PIERS 2018 Toyama

Progress In Electromagnetics Research Symposium

Program

August 1–4, 2018
Toyama, JAPAN

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CONTENTS

TECHNICAL PROGRAM SUMMARY

Wednesday AM, August 1, 2018

Wednesday PM, August 1, 2018

Thursday AM, August 2, 2018

Thursday PM, August 2, 2018

Friday AM, August 3, 2018

Friday PM, August 3, 2018

Saturday AM, August 4, 2018

Saturday PM, August 4, 2018

THE ELECTROMAGNETICS ACADEMY

The Progress in Electromagnetics Research Symposium (PIERS) is sponsored by The Electromagnetics Academy.

The Electromagnetics Academy is devoted to academic excellence and the advancement of research and relevant applications of the electromagnetic theory and to promoting educational objectives of the electromagnetics profession. PIERS provides an international forum for reporting progress and advances in the modern development of electromagnetic theory and its new and exciting applications.

Founded by the late Professor Jin Au Kong (1942–2008) of MIT in 1989, The Electromagnetics Academy is a non-profit organization registered in USA.

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JOURNAL: PROGRESS IN ELECTROMAGNETICS RESEARCH

Progress In Electromagnetics Research (PIER) publishes peer-reviewed original and comprehensive articles on all aspects of electromagnetic theory and applications. This is an open access, on-line journal PIER (E-ISSN 1559-8985). It has been first published as a monograph series on Electromagnetic Waves (ISSN 1070-4698) in 1989. It is freely available to all readers via the Internet.

PIER is a non-profit organization.

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Progress In Electromagnetics Research Symposium
August 1–4, 2018
Toyama, JAPAN

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The 2018 Progress In Electromagnetics Research Symposium will be held in Toyama during August 1–4, at "Toyama International Conference Center" and "ANA Crowne Plaza Toyama".

REGISTRATION

The PIERS technical sessions will begin at 08:30 on Wednesday, August 1, 2018. You may come to register during 12:30-18:30 on Tuesday, July 31, 2018, and during 08:00-18:00 on Wednesday, August 1, 2018, at the registration counter, Toyama International Conference Center. Registration is also available from 08:00 to 18:00 on August 2 and 3, and from 08:00 to 17:00 on August 4, 2018.

The on-site registration fee is USD 690, and the reduced registration fee for a student is USD 450 (a valid student ID is required). Please be reminded that the on-site payments will be collected in Japanese Yen. If you have pre-registered and paid, your name badge and symposium program will be ready for you to pick up at the registration counter during the symposium. Please wear your name badge throughout the meeting. Access to the coffee break, interactive areas, and technical sessions will be prohibited if a name badge is not visible.

SPECIAL EVENTS

Symposium Reception

On Wednesday evening, August 1, all conference participants are invited to a welcome reception at the conference hotel. The tickets are free and handed out on a first-come-first-served basis. Please make reservation in advance for the reception by July 10.

Symposium Banquet

On Friday evening, August 3, symposium banquet is planned for PIERS participants and their guests. A limited number of banquet tickets will be available. For all participants, the price is USD 80 per person. Please make reservation and pay in advance for the banquet by July 10.

PIERS ONLINE

Information on PIERS 2018 Toyama and future PIERS is posted at www.piers.org.

GUIDELINE FOR PRESENTERS

Oral Presentations

- **Load and TEST presentation files in advance:**
  All Oral Presenters must load and test presentation files in their own session room computers no later than 12 hours before the scheduled talk. Presenters are not allowed to detach the session computer and attach their own notebook/laptop to the LCD projector in session room.
- **Presentation files format:**
  PDF, Power Point are recommended. Movies or animations in MPEG, Windows Media, and etc, should be tested in PIERS computer in PIERS OFFICE no later than half-day before the session.
- **USB disk, CD-ROM, DVD:**
  Presentation files in USB disk, CD-ROM, DVD are acceptable by PIERS Computer.
- **Report to Session Chair:**
  Presenters are required to report to their session chairs at least 10 minutes prior to the start of their session.
- **Length of your talk:**
  In a regular session, the time length for each talk is 20 minutes. In a focus session, the presentation time limit is 30 minutes for a keynote talk, 20 minutes for an invited talk, and 15 minutes for a contributed talk.
- **DO NOT change presentation sequence:**
  Session Chairs, please be present in the session room at least 15 minutes before the start of the session and must strictly observe the starting time and time limit of each paper and refrain from changing paper presentation sequence.
- **NO picture request:**
  When such a request is made by the presenter, the session chair and session helpers will do their best to ensure that no pictures will be taken at the presentation.

Poster Presentations

Presenters should post time slots of their presence on the panel and be present for interactive questions at the given time. Each poster can be posted at 8:30–11:30 and 14:00–17:00, and all presenters are suggested to be present at least during 10:40–11:00 and 15:40–16:00.

One panel area of $47.2''$ (W) $\times$ $82.7''$ (H) or 1200 mm (W) $\times$ 2100 mm (H) will be available for each poster.

All presenters are required to mount their papers 30 minutes before the session and remove them at the end of their sessions.

GENERAL INFORMATION

LANGUAGE

The official language for the Symposium is English.

CURRENCY AND CREDIT CARDS

The local currency is the Japanese Yen (JPY) and the exchange rate is 1 USD for about 110 JPY (as of June 1, 2018). Credit cards and cash are acceptable for payments. International credit cards are acceptable in most shops, restaurants etc.

TAX AND TIP

Please do not tip a waiter/waitress or a taxi driver and other persons who provide regular service. All advertised merchandise prices normally include tax.

TAXI

Usually, a taxi is available along the roadsides (while you wave for it) or right in front of a hotel.

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- **Post Office**
  Opening hours: usually 08:30 – 17:00, from Monday to Friday.
- **Bank**
  Opening hours: usually 09:00 – 16:00, from Monday to Friday.
- **Store**
  Opening hours: usually 10:00 – 21:00, from Monday to Sunday. There are 24 h service shops also.
- **Public Transportation**
  Operating hours: generally 05:30 – 23:30

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In Toyama area in Japan, the standard outlets provide AC of 100 V/60 Hz.

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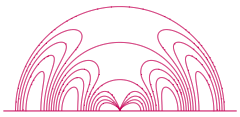


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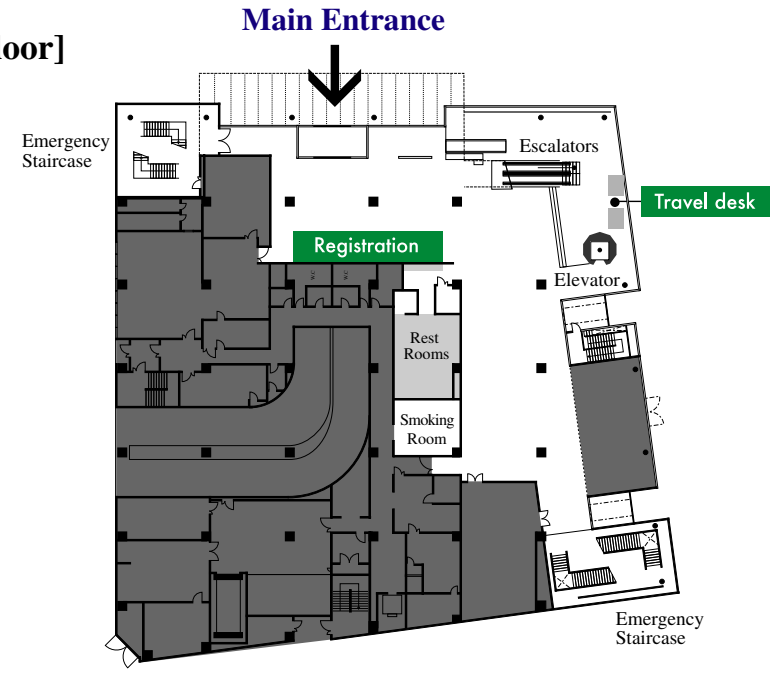

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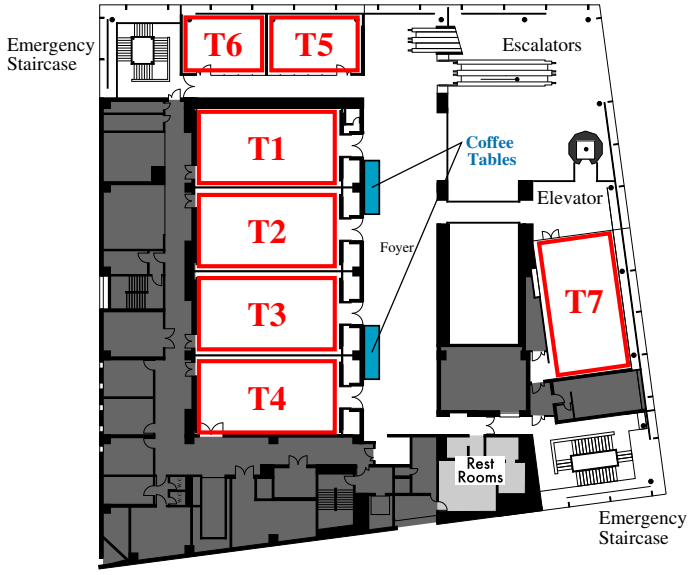

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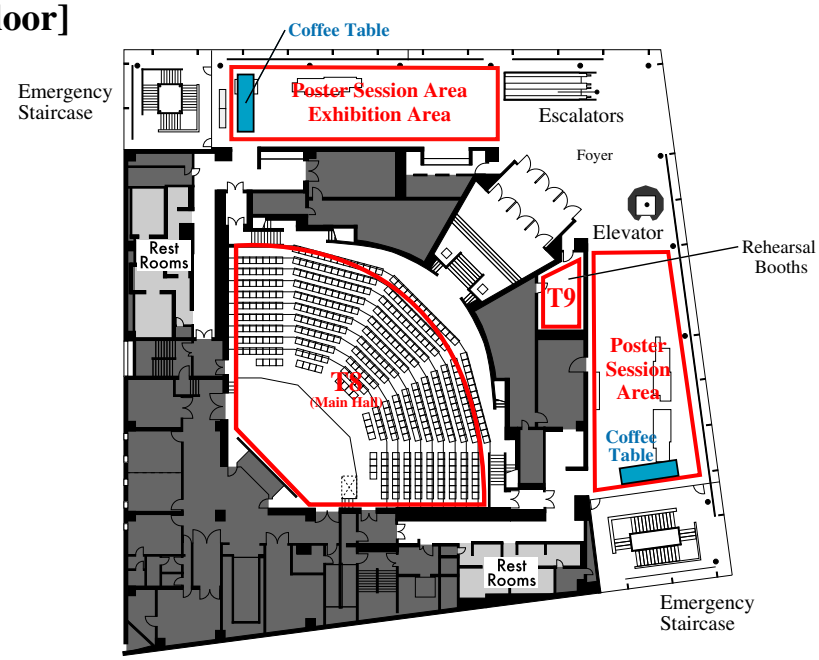
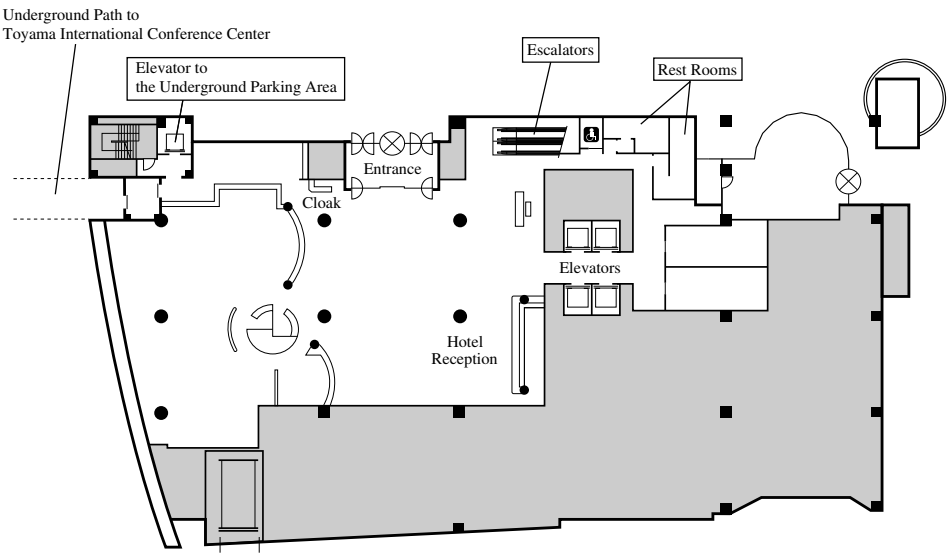
Toyama International Conference Center

[3rd Floor]



Venue 1:
Toyama International Conference Center

[1st Floor]



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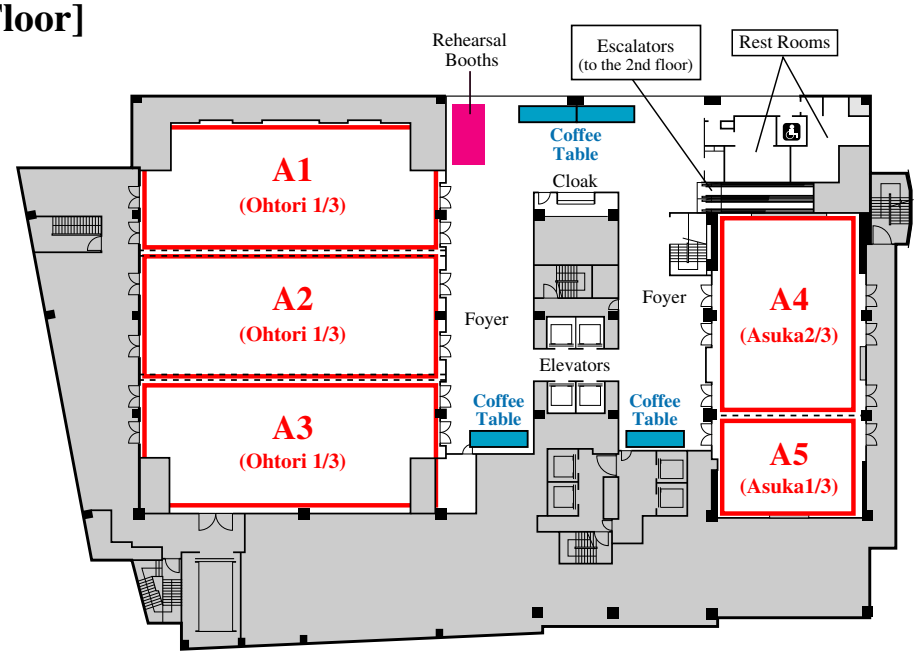

Venue 2:
ANA Crowne Plaza Toyama

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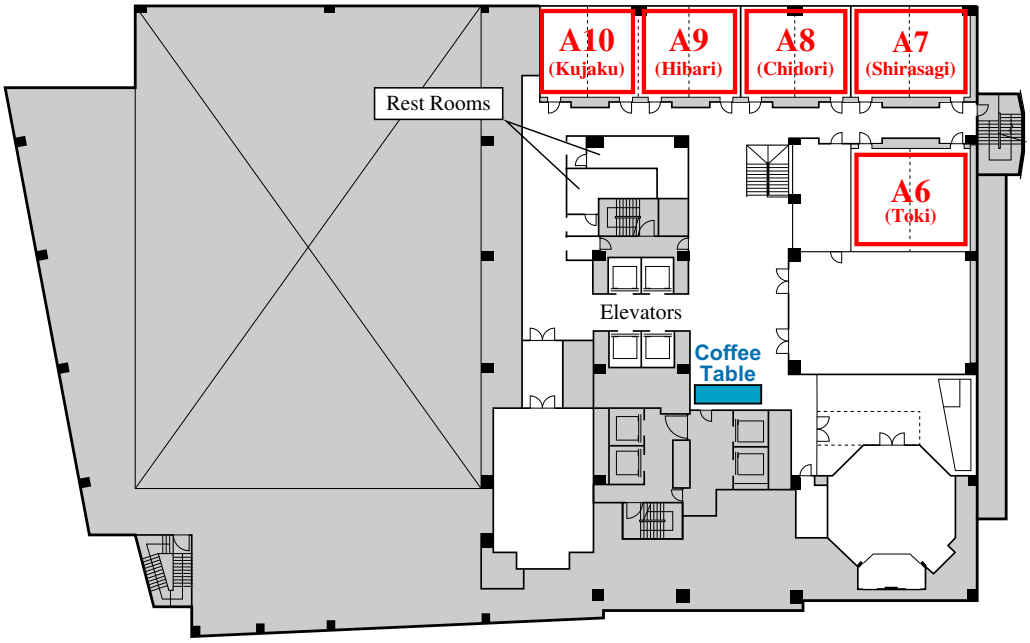

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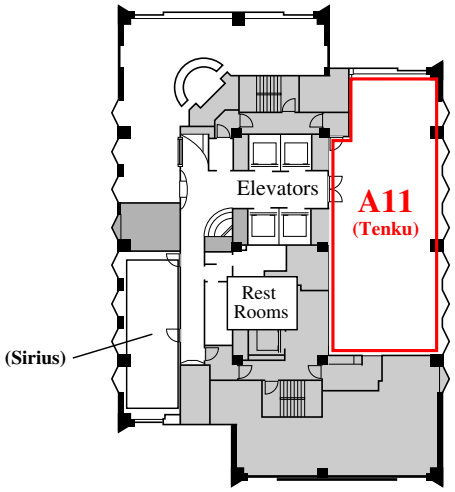
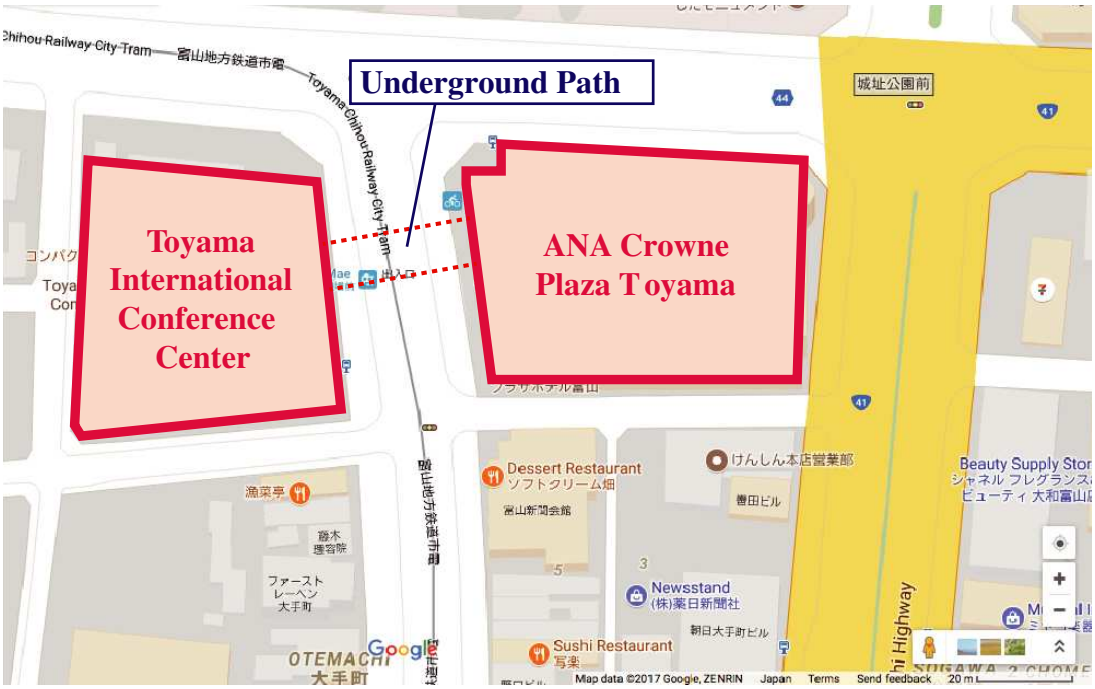
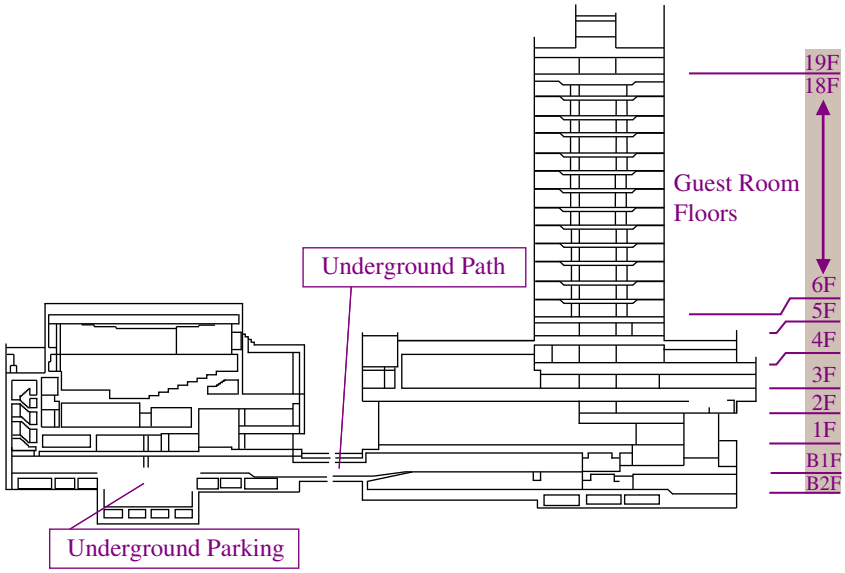


Venue 2:
ANA Crowne Plaza Toyama

PIERS 2018 Toyama Venue

"Toyama International Conference Center" & "ANA Crowne Plaza Toyama"





GENERAL LECTURES

General Lecture 1 (11:00-12:00, Wednesday, August 1, 2018)
Venue: Main Hall, 3rd floor, Toyama International Conference Center

Mathematics, Physics, Engineering, and Electromagnetics

Speaker: Weng Cho Chew, Purdue University, USA

Chaired by Yury V. Shestopalov, University of Gavle, Sweden

Abstract

In this lecture, we will discuss mathematics issues that commonly emerge in solving electromagnetics and engineering problems. Approximation methods, convergence of approximation methods, existence of solutions, stability of time-stepping methods are often encountered. The understanding of linear vector spaces, such as Hilbert spaces, and Sobolev spaces becomes important in understanding the underlying behaviors of many approximation or numerical methods.

Due to the advent of computers, fast solution methods have been of interest to many researchers. Hence, matrix or operator factorization becomes an important topic of research. Many of the modern fast methods can be thought of matrix or operator factorization techniques. Acceleration of convergence through multi-level multi-grid also becomes the prerogatives of many researchers.

In addition, the use of differential geometry or exterior calculus has been connected to electromagnetics for many years. But recently, a discrete version of exterior calculus has been developed. It seems that this exterior calculus is a superset theory of classical calculus.

In physics, many theories are postulated instead of been derived. For instance, quantum postulates give rise to quantum theory that is a superset theory that describes the world from a new perspective. It will be good for mathematicians to investigate if all physical theories have superset theories. They can lead to a richer description of the world.

Also, there are many mathematical theories that are developed independently of physics and engineering applications. Examples of these are complex variable theory, topology, Lie algebra. The use of topology concepts like Chern number is replete in many literatures on topological insulators.

It will be important that bridges be built between mathematics, physics, engineering, and electromagnetics so that this set of knowledge permeates for real-world applications more readily.

Profile

W. C. Chew received all his degrees from MIT. His research interests are in wave physics, specializing in fast algorithms for multiple scattering imaging and computational electromagnetics in the last 30 years. His recent research interest is in combining quantum theory with electromagnetics, and differential geometry with computational electromagnetics. After MIT, he joined Schlumberger-Doll Research in 1981. In 1985, he joined U Illinois Urbana-Champaign, was then the director of the Electromagnetics Lab from 1995–2007. During 2000–2005, he was the Founder Professor, 2005–2009 the YT Lo Chair Professor, and 2013–2017 the Fisher Distinguished Professor. During 2007–2011, he was the Dean of Engineering at The University of Hong Kong. He joined Purdue U in August 2017 as a Distinguished Professor. He has co-authored three books, many lecture notes, over 400 journal papers, and over 600 conference papers. He is a fellow of various societies, and an ISI highly cited author. In 2000, he received the IEEE Graduate Teaching Awar, in 2008, he received the IEEE AP-S CT Tai Distinguished Educator Award, in 2013, elected to the National Academy of Engineering, and in 2015 received the ACES Computational Electromagnetics Award. He received the 2017 IEEE Electromagnetics Award. He now is the 2018 IEEE AP-S President.

General Lecture 2 (11:00-12:00, Thursday, August 2, 2018)
Venue: Main Hall, 3rd floor, Toyama International Conference Center

Challenges in Metamaterial and Metasurfaces Design for Practical Antenna Applications

Speaker: Raj Mittra, University of Central Florida, USA

Chaired by Ari Sihvola, Aalto University, Finland

Abstract

Metamaterials (MTMs) were introduced to the EM world by Veselago in a seminal paper back the 60's, in which he argued that materials with DNG (double-negative) characteristics, whose e and m are both negative, would exhibit exotic properties such as subwavelength resolution, when used in devices such as lenses. Since then other interesting properties of MTMs have been identified, and their applications to cloaking, performance enhancement of small antennas, and related areas, have been proposed. More recently, there has been considerable interest in the topic of Metasurfaces (MTSs), as opposed to volume-type materials, that have been employed to control the propagation of EM waves with applications to communication antennas.

Despite a flood of publications on MTMs and related topics — literally thousands during the last 10 years — the number of real-world applications in which MTMs and MTSs have been utilized have been rather limited. The primary reason for this is the lack of availability of the materials needed to fabricate devices such as those that reduce the size of antennas without compromising their performance in terms of gain, bandwidth, and efficiency, for instance, or shrouds (cloaks) that suppress the electromagnetic scattering from radar targets, to name just a few. A similar situation arises when one attempts to design an antenna, or a similar device, using Transformation Optics (TO), a relatively new concept which was recently introduced by Pendry, among others. In this approach, the transformation of one coordinate system to another is used to modify the geometry of an antenna, without altering its performance, by replacing the original material properties with new ones that can be rigorously determined by applying the principles of TO to Maxwell's equations. An example of such a device is a flat Luneburg lens which is derived by transforming the conventional spherical Luneburg lens, to render it easier to fabricate. The caveat is that the TO algorithm calls for e and m materials that are not available naturally, e.g., MTMs. The same is also true for a wide variety of other devices, such as flat GRIN (graded index) lenses and Reflectarrays (RAs), which require materials that are unavailable off-the-shelf and, hence, must be synthesized artificially.

In light of this background on MTMs, this presentation will focus on the topic of artificial synthesis of materials with real-world applications in mind. We will review the different strategies that have been proposed, will identify the ones that have been successfully implemented, provide several practical examples of the same, and go on to discuss the challenges that still need to be met — not the least of which is cost-effective fabrication — to satisfy the ever-increasing demands posed by emerging technologies, such as IoT and 5G.

The topic of Additive Manufacturing for low-cost fabrication of MTMs also being pursued a by several groups around the world will be covered, and some issues particularly related to this topic will be examined.

Profile

Raj Mittra is a Professor in the Department of Electrical Engineering & Computer Science department of the University of Central Florida in Orlando, FL., where he is the Director of the Electromagnetic Communication Laboratory. Prior to joining the University of Central Florida, he worked at Penn State as a Professor in the Electrical and Computer Engineering from 1996 through June, 2015. He was a Professor in the Electrical and Computer Engineering at the University of Illinois in Urbana Champaign from 1957 through 1996, when he moved to the Penn State University. Currently, he also holds the position of Hi-Ci Professor at King Abdulaziz University in Saudi Arabia.

He is a Life Fellow of the IEEE, a Past-President of AP-S, and he has served as the Editor of the Transactions of the Antennas and Propagation Society. He won the Guggenheim

Fellowship Award in 1965, the IEEE Centennial Medal in 1984, and the IEEE Millennium medal in 2000. Other honors include the IEEE/AP-S Distinguished Achievement Award in 2002, the Chen-To Tai Education Award in 2004 and the IEEE Electromagnetics Award in 2006, and the IEEE James H. Mulligan Award in 2011.
Recently he founded the e-Journal FERMAT (www.e-fermat.org) and has been serving as the co-editor-in-chief of the same. Dr. Mittra is a Principal Scientist and President of RM Associates, a consulting company founded in 1980, which provides services to industrial and governmental organizations, both in the U.S. and abroad.

General Lecture 3 (11:00-12:00, Friday, August 3, 2018)
Venue: Main Hall, 3rd floor, Toyama International Conference Center

Advances in Quantum Dot Photonics

Speaker: Yasuhiko Arakawa, The University of Tokyo, Japan

Chaired by Tadao Nagatsuma, Osaka University, Japan

Abstract

Since the first proposal of the concept of the quantum dot in 1982, the quantum dots have been intensively studied for both fundamental solid-state physics and advanced device applications. Fully discretizing the energy levels of electrons by quantum dots has enabled the realization of high performance quantum lasers, high-sensitivity quantum dot infrared detectors, and quantum information devices such as single photon sources. Quantum dots can be applied to solar cells with a forecasted conversion efficiency over 75% for the future sustainable renewable energy system. Moreover, embedding a single quantum dot inside the photonic nanocavity provides a new platform for studying solid-state cavity quantum electronics (cavity-QED).
In this lecture, we overview recent progress in quantum dot technology, including practical implementation of quantum dot lasers and demonstration of single photon sources operating above room temperature. Moreover, advances in quantum dot cavity-QED and prospects of the future quantum dot photonics are also discussed.

Profile

Yasuhiko Arakawa received his PhD degree in Electronics and Electrical Engineering from the University of Tokyo in 1980. He joined the University of Tokyo as an assistant professor and became a full professor at the University of Tokyo in 1993. He is now Professor and the Director of the Institute for Nano Quantum Information Electronics, the University of Tokyo. He served to the International Commission for Optics (ICO) as the President and was elected as a Foreign Member of US National Academy of Engineering (NAE). He has received numerous awards, including Leo Esaki Award (2004), IEEE/LEOS William Streifer Award (2006), Fujiwara Award (2007), IEEE David Sarnoff Award (2009), Medal with Purple Ribbon (2009), C&C Prize (2010), Heinrich Welker Award (2011), OSA Nick Holonyak Jr. Award (2011), and Japan Academy Prize (2017). He is a Life Fellow of IEEE and a Fellow of OSA.

General Lecture 4 (11:00-12:00, Saturday, August 4, 2018)
Venue: Main Hall, 3rd floor, Toyama International Conference Center

Electromagnetic Wave Theory for Wireless Power Transfer

Speaker: Naoki Shinohara, Kyoto University, Japan

Chaired by Satoshi Yagitani, Kanazawa University, Japan

Abstract

A wireless power transfer (WPT) technology is considered as one of game changing technologies. The WPT technology is basically based on the same theory for a wireless communication. We use an antenna for the WPT. We use a wave circuit for the WPT. Only the difference of the technologies between for the WPT and for the wireless communication is a view point of an efficiency of the power transmission between the antennas and of the power conversion at the circuit. For example, we put a transmitting antenna and a receiving antenna at distance in which a mutual coupling between the transmitting and the receiving antenna occurs to increase a beam efficiency. When the mutual coupling between the transmitting and the receiving antenna is very strong, it is called inductive/capacitive coupling WPT. In that distance, a magnetic field or an electric field is used as a carrier of the power. When the mutual coupling is weak, it is called a resonance coupling WPT and an evanescent mode wave is used as the carrier of the power. When the mutual coupling is very weak or negligible, it is called a WPT via electromagnetic wave in a radiative near field. In that distance, we cannot apply Friis transmission equation because we cannot assume a plane wave. All phenomena will occur with the same antenna. Now there are various kind of WPT commercial applications, e.g., a wireless charger of a smart phone with an inductive coupling WPT, a resonance coupling wireless charger of an electric vehicle, an RF-ID via microwave power, and an IoT devices whose power is supplied by an energy harvesting from an ambient radio wave. They seem to be different WPT systems. But we can explain all WPT systems via the same electromagnetic theory.
In this talk, first of all, current R&D status of the WPT in the world will be described and hopeful future of the WPT as a game changing technology will be described. Next total electromagnetic theory for the WPT will be explained. New circuit theory to increase a power conversion efficiency will also described. This talk will give audiences total knowledge of the WPT theory and technologies.

Profile

Naoki Shinohara received the B.E. degree in electronic engineering, the M.E. and Ph.D (Eng.) degrees in electrical engineering from Kyoto University, Japan, in 1991, 1993 and 1996, respectively. He was a research associate in Kyoto University from 1996. From 2010, he has been a professor in Kyoto University. He has been engaged in research on Solar Power Station/Satellite and Microwave Power Transmission system. He is IEEE MTT-S Technical Committee 26 (Wireless Power Transfer and Conversion) chair, IEEE MTT-S Distinguish Microwave Lecturer (DML), IEEE Wireless Power Transfer Conference advisory committee member, URSI Commission D vice chair, international journal of Wireless Power Transfer (Cambridge Press) executive editor, first chair and technical committee member on IEICE Wireless Power Transfer, Japan Society of Electromagnetic Wave Energy Applications (JEMEA) president, Space Solar Power Systems Society board member, Wireless Power Transfer Consortium for Practical Applications (WiPoT) chair, and Wireless Power Management Consortium (WPMc) chair.

PRE-CONFERENCE WORKSHOP

Prior to the conference, a Workshop will be held on July 31, 2018, where all the paid registrants of PIERS 2018 Toyama are invited to attend without any extra fee nor any advance reservation.

Date: July 31, 2018
Time: 13:30-17:45 (Registration Desk will open at 12:30.)
Venue: Main Hall, 3rd floor, Toyama International Conference Center
Fee: Free (included in the PIERS 2018 Toyama registration fee)

Session WS1 (13:30-15:45)

Chaired by Shinichiro Ohnuki, Nihon University, Japan and Malay Ranjan Tripathy, Amity University Uttar Pradesh, India

Invited Talk 1 (13:30-14:15)

A Simple Collective Ray Description for the EM Radiation by Conformal Phase Scanned Antenna Arrays on Locally Smooth Convex Surfaces

Speaker: Prabhakar H. Pathak, Professor Emeritus, The Ohio State University, USA

Abstract

A collective uniform geometrical theory of diffraction (UTD) ray solution is described for efficiently analyzing the radiation from large phase scanned antenna arrays mounted conformally on locally smooth convex surfaces. This collective UTD describes the radiation from an entire, large, phased array in terms of just a few rays; this is in contrast to the brute force array element by element field summation via UTD. In so doing, the collective UTD provides a vivid physical description for the array radiation mechanisms. The UTD solution is useful in predicting the radiation performance of large conformal phased arrays on larger locally convex but otherwise complex platforms which may occur in modern applications. The basic ideas are demonstrated via the analysis of canonical problems involving the radiation by finite size linear periodic phased arrays placed either along the axial or along the circumferential directions on a PEC circular cylinder, and excited with a uniform amplitude and appropriate phase distribution for scanning in a given direction. An asymptotic high frequency analysis, which is applicable here, is seen to yield a collective UTD description for the fields of the array in terms of basically three rays which arrive at an observation point in the near or far zone in the region external to the array but not too close to it. One such ray originates from an appropriate point interior to the array and constitutes the Floquet modal ray which exists as if the axial array was infinitely long, or the circumferential array completely wrapped the cylinder. The remaining two rays arrive from each end of the finite linear array and thus constitute the Floquet modal diffracted fields arising from the array truncation. An extension of this work to tapered array source distributions and to surface array distributions (as opposed to linear arrays) will also be briefly discussed.

Profile

Prabhakar H. Pathak received his Ph.D. (1973) in Electrical Engineering from the Ohio State University (OSU). Currently he is Professor Emeritus at OSU, and Adjunct Professor at the Univ. of South Florida. Prof. Pathak is regarded as a codeveloper of the uniform geometrical theory of diffraction (UTD). His research interests continue to be in the development of new UTD ray solutions in both the frequency and time domains, as well as in the development of fast beam

and hybrid (ray and numerical) methods for analyzing electrically large electromagnetic (EM) antenna and scattering problems, including reflector systems and conformal phased arrays. His work includes the development of analytical tools for predicting EM radiation and mutual coupling associated with antennas/arrays on large airborne/spaceborne platforms. He is also working on novel methods related to near field measurements of far zone antenna patterns. Prof. Pathak has been presenting short courses and invited talks at conferences and workshops both in the US and abroad. He has authored/coauthored over hundred journal and conference papers, as well as contributed chapters to seven books. Prior to 1993, he served two terms as an associated editor for IEEE Trans AP. He was appointed IEEE AP-S distinguished lecturer during 1991–1993, and was later appointed as chair of the distinguished lecturer program for the IEEE AP-S during 1995–2005. He was an IEEE AP-S AdCom member in 2010. He received the 1996 Schelkunoff best paper award from IEEE AP-S; the ISAP 2009 best paper award, the George Sinclair award (1996) from the OSU ElectroScience Laboratory, and the IEEE Third Millenium medal from AP-S in 2000. Prof. Pathak received the IEEE AP-S distinguished achievement award in 2013. He is an IEEE Life Fellow and a member of URSI commission B.

Invited Talk 2 (14:15-15:00)

Stochastic Method for Solving Certain EM Field Computation Problems

Speaker: Ramakrishna Janaswamy, The University of Massachusetts Amherste, USA

Abstract

Stochastic method, wherein the solution of a boundary value problem in electrostatics or electrodynamics is represented as an ensemble average of a stochastic process generated by the underlying partial differential equation, is very attractive in electromagnetics because (i) it permits the solution in any subregion of a computational domain without having to determine the field everywhere, (ii) the solution is amenable to complete parallelization, and (iii) the solution can be generated without an explicit mesh. We discuss here the basics of the stochastic formulation and apply the method to the solution of Poisson's equation and the Helmholtz equation. The latter will involve examples below the first resonance for normal media and for any frequency in plasmonic media.

Profile

Ramakrishna Janaswamy is a Professor in the Department of Electrical & Computer Engineering, University of Massachusetts, Amherst. His research interests include deterministic and stochastic radio wave propagation modeling, analytical and computational electromagnetics, antenna theory and design, and wireless communications. He is Fellow of IEEE and an elected member of U.S. National Committee of International Union of Radio Science, Commissions B and F. He is a recipient of the R. W. P. King Prize Paper Award of the IEEE Transactions on Antennas and Propagation and the IEEE 3rd Millennium Medal. He served as an Associate Editor of Radio Science, the IEEE Transactions on Vehicular Technology, the IEEE Transactions of Antennas and Propagation and the IET Electronics Letters. He is an IEEE Standards Activity member representing the IEEE Antennas and Wave Propagation Standards. He is the author of the book Radiowave Propagation and Smart Antennas for Wireless Communications, Kluwer Academic Publishers, November 2000, and a contributing author in Handbook of Antennas in Wireless Communications, L. Godara (Ed.), CRC Press, August 2001 and Encyclopedia of RF and Microwave Engineering, John Wiley and Sons, 2005.

Invited Talk 3 (15:00-15:45)

Metamaterials, Anapoles and Flying Donuts

Speaker: Nikolay Zheludev, University of Southampton, UK & Nanyang Technological University, Singapore

Abstract

Metamaterials have been the platform for experimental development of a new chapter in electrodynamics devoted to toroidal and anapole modes of excitation and the generation of electromagnetic flying donuts. Electromagnetic toroidal dipoles can be represented as currents flowing on the surfaces of tori. They provide physically significant contributions to the basic characteristics of matter including absorption, dispersion, and chirality. They give rise to dynamic anapoles, illusive non-radiating charge-current configurations. Toroidal excitations also exist in free space as spatially and temporally localized electromagnetic pulses propagating at the speed of light and interacting with matter in a way different from conventional electromagnetic transvers pulses. We discuss these recent findings and the role of localized and propagating electromagnetic toroidal excitations in light-matter interactions, spectroscopy and telecommunications.

Profile

Nikolay Zheludev, directs the Centre for Photonic Metamaterials at Southampton University, UK and Centre for Disruptive Photonic Technologies at Nanyang Technological University, Singapore. He is also deputy director of the Optoelectronics Research Centre at Southampton and co-Director of the Photonics institute at NTU, Singapore. His research interests are in nanophotonics and metamaterials. He is Fellow of the Royal Society and his personal awards include the Thomas Young Medal for "global leadership and pioneering, seminal work in optical metamaterials and nanophotonics", Senior Professorships of the Engineering and Physical Sciences Research Council (UK) and the Leverhulme Trust and the Royal Society Wolfson Research Fellowship. Professor Zheludev is the Editor-in-Chief of the IOP "Journal of Optics" and advisor to the Nature-Springer publishing group.

⟨Break⟩ (15:45-16:15)

Session WS2 (16:15-17:45)

Chaired by Yury Shestopalov, University of Gavle, Sweden and Leung Tsang, University of Michigan, USA

Invited Talk 4 (16:15-17:00)

Contribution of Electromagnetics to Humanitarian Demining and UXO Clearance

Speaker: Motoyuki Sato, Tohoku University, Japan

Abstract

Humanitarian demining and UXO clearance have gathered interest all over the world last 20 years, however, it is still quite important activity in many mine/UXO affected countries. Since the Ottawa treaty established in 1997, land mine problems have been widely known, and we have continued efforts to demolish all the landmines including buried mines in mine affected countries. Even though, we have noticed that in many mine affected countries, mine clearance is not an easy task and we have to continue this effort. It is reported that accidents caused by landmines

occurred in 56 countries in 2016, and more than 9,000 people were killed or injured. As of November 2017, landmines remains in 61 countries.
In order to detect buried landmines and UXO, electromagnetic techniques have widely been used. Electromagnetic Induction Sensor (EMI sensor) is one of the most commonly used sensor for detection of metal objects. Most of UXO are made of metal and most types of landmines contain metal components, which can be detected by EMI sensor. In addition, recently, Ground Penetrating Radar (GPR) has also been used for humanitarian demining, because it can detect non-metal objects. In this workshop, at first I will introduce these techniques.
Then, we introduce more actual activities. Tohoku University has developed ALIS for humanitarian demining. ALIS is a handheld "Dual sensor" which combines EMI sensor and GPR. This is a hand held sensor, equipped with position tracking system, therefore ALIS can acquire the EMI and GPR signal together with its position information, while it is scanned on the ground surface by an operator by hand manually. Then, the data can be processed using Synthetic Aperture Radar (SAR) processing (migration) and can reconstruct 3-D subsurface image. GPR of ALIS operates at 1–3 GHz, and the penetration depth of the GPR is 20–50 cm. The development of ALIS started in 2002, and after evaluation test in some mine affected countries including Afghanistan, a long-term evaluation test has been conducted in Cambodia since 2009. We found that the prototype of ALIS is capable for imaging buried mines, and can reduce the false alarm ratio drastically. We have detected more than 80 buried land mines in Cambodia mine fields. The ALIS is based on these practical evaluation conducted together with CMAC (Cambodian Mine Action Center). The new ALIS system is compact and light weight which is less than 3.1 kg, and can be used for more than 6 hours. It was evaluated in CMAC test site in 2018, and we demonstrated its high performance.

Profile

Motoyuki Sato received the B.E., M.E degrees, and Dr. Eng. degree in information engineering from the Tohoku University, Sendai, Japan, in 1980, 1982 and 1985, respectively. Since 1997 he is a professor at Tohoku University and a distinguished professor of Tohoku University since 2007, and he was the Director of Center for Northeast Asian Studies, Tohoku University during 2009–2013. In 1988, he was a visiting researcher at the Federal German Institute for Geoscience and Natural Resources (BGR) in Hannover, Germany. His current interests include transient electromagnetics and antennas, radar polarimetry, ground penetrating radar (GPR), borehole radar, electromagnetic induction sensing, interferometric and polarimetric SAR. He has conducted the development of GPR sensors for humanitarian demining, and his sensor ALIS which is a hand-held dual sensor, has detected more than 80 mines in mine fields in Cambodia. He received 2014 Frank Frischknecht Leadership Award from SEG for his contribution to his sustained and important contributions to near-surface geophysics in the field of ground-penetrating radar. He received IEICE Best paper award (Kiyasu Award), and IEEE Ulrich L. Rohde Innovative Conference Paper Awards on Antenna Measurements and Applications both in 2017. He is a visiting Professor at Jilin University, China, Delft University of Technology, The Netherlands, and Mongolian University of Science and Technology.

Invited Talk 5 (17:00-17:45)

Computational Bioelectromagnetics: Human Safety, Healthcare and Medical Applications

Speaker: Akimasa Hirata, Nagoya Institute of Technology, Japan

Abstract

The adverse health effects caused by the electromagnetic field exposures at low- and radio-frequencies are the stimulation and thermal effect, respectively. International guidelines/standards for human exposure safety have been set to prevent from the effects. In the guidelines/standards, the limits are prescribed in terms of the internal

physical quantities; in-situ electric field at low frequencies and specific absorption rate (SAR) at radio frequencies. The SAR is a surrogate of the temperature elevation.
When providing the rational for the guidelines/standards, the threshold for inducing the health effect should be assessed. The computational electromagnetics, in addition to the thermodynamics for radio-frequency exposure, is powerful and essential tool in the standardization. Computational techniques for electromagnetics in human have been developed for exposure safety; magneto-quasi-static approximation techniques at low frequencies and full-wave analysis at radio frequencies. A committee on EMF dosimetry modeling has been formed under the IEEE International Committee on Electromagnetic Safety. Combining computational electromagnetics with modeling techniques of human body from medical images, integrated computational techniques are used for healthcare and medical applications. For example, in the non-invasive brain stimulation (e.g., transcranial magnetic stimulation, transcranial direct current stimulation etc), personalized electrostimulation strategy using combined computational techniques becomes common. This is the same for hyperthermia, radio-frequency ablation, etc.
In this talk, computational techniques for bioelectromagnetics in different frequency ranges will be reviewed first, and then the role of computational bioelectromagnetics for setting the limit in the safety guidelines will be explained, together with current research agenda. A risk management system of heat-related illness and diagnosis systems for the brain function will be reviewed, together with future perspective in this research field.

Profile

Dr. Hirata is Director and Professor of Research Center of Bioelectromagnetic Engineering, Nagoya Institute of Technology. He serves as WHO Expert and a member of the main commission of International Commission on Non-Ionizing Radiation Protection (ICNIRP) where he leads a project group on dosimetry (engineering/physics modeling). He also serves administrative member and chairperson of subcommittee 6 of IEEE International Committee on Electromagnetic Safety. He won several awards including Japan Academy Medal (2018), IEEE EMC-S Technical Achievement Award (2015), Prizes for Science and Technology (2014 Public Understanding Category and 2011 Research Category) from Ministry of Education, Culture, Sports, Science and Technology, Japan. He is Fellow of IEEE and Institute of Physics.

PIERS 2018 TOYAMA TECHNICAL PROGRAM

Session 1A1
FocusSession.SC5: Remote Sensing for Hydrological Applications 1

Wednesday AM, August 1, 2018

Room T1

Organized by Jian-Cheng Shi, Hui Lu

Chaired by Jian-Cheng Shi, Hui Lu

08:30 Keynote — Fully Coherent Model for Layered Bicontinuous Medium Using Analytical Method of Feynman Diagram for Applications in Microwave Remote Sensing of Snow Cover

Jiyue Zhu (*University of Michigan*); *Leung Tsang* (*University of Michigan*); *Shurun Tan* (*University of Michigan*); *Son V. Nghiem* (*California Institute of Technology*);

09:00 Invited — Improving Snow Fraction Spatio-temporal Continuity Using a Combination of MODIS and Fengyun-2 Satellites over China

Lingmei Jiang (*Beijing Normal University*); *GongXue Wang* (*Beijing Normal University*); *Jian-Cheng Shi* (*Institute of Remote Sensing Applications, Chinese Academy of Sciences*);

09:20 Invited — Time-series Passive Microwave Observations Applied for Snow Estimation

Jinmei Pan (*Institute of Remote Sensing and Digital Earth, Chinese Academy of Science*); *Chuan Xiong* (*Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences*); *Jian-Cheng Shi* (*Institute of Remote Sensing Applications, Chinese Academy of Sciences*); *Deyuan Geng* (*Institute of Remote Sensing and Digital Earth, Chinese Academy of Science*); *Haokui Xu* (*University of Michigan*);

09:40 Invited — Time-series Ground Based X and Ku Band SAR Observation of Seasonal Snow: Modeling and Retrieval

Chuan Xiong (*Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences*); *Jiancheng Shi* (*Institute of Remote Sensing and Digital Earth, CAS*); *Jinmei Pan* (*Institute of Remote Sensing and Digital Earth, Chinese Academy of Science*); *Haokui Xu* (*Institute of Remote Sensing and Digital Earth, Chinese Academy of Science*); *Tianjie Zhao* (*Institute of Remote Sensing and Digital Earth, Chinese Academy of Science*); *Deyuan Geng* (*Institute of Remote Sensing and Digital Earth, Chinese Academy of Science*);

10:00 Invited — Measurement and Modeling of Multi-frequency Microwave Emission of Soil Freezing and Thawing Processes

Tianjie Zhao (*Jointly Sponsored by Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences*); *Jian-Cheng Shi* (*Institute of Remote Sensing Applications, Chinese Academy of Sciences*); *Shaojie Zhao* (*Beijing Normal University*); *Kun-Shan Chen* (*Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences*); *Pingkai Wang* (*Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences*); *Shangnan Li* (*Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences*); *Chuan Xiong* (*Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences*); *Qing Xiao* (*Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences*);

10:20 Z-R Relationships for Weather Radar in Indonesia from the Particle Size and Velocity (Parsivel) Optical Disdrometer

Marzuki (*Andalas University*); *Hiroyuki Hashiguchi* (*Kyoto University*); *Mutya Vonnisa* (*Andalas University*); *Harmadi* (*Andalas University*); *Muzirwan* (*National Institute of Aeronautics and Space*); *Sugeng Nugroho* (*Indonesian Agency for Meteorological, Climatological and Geophysics*); *Meri Yoseva* (*Andalas University*);

10:40 **Coffee Break**

Session 1A2
FocusSession.SC5: Inverse Scattering, Imaging, and Remote Sensing 1

Wednesday AM, August 1, 2018

Room T2

Organized by Xiuzhu Ye, Xudong Chen

Chaired by Xiuzhu Ye

08:30 A Robust Algorithm of Through-wall Imaging by Electromagnetic Power Measurement
Yan-Lei Li (*Institute of Electronics, Chinese Academy of Sciences*); *Xingdong Liang* (*Institute of Electronics, Chinese Academy of Sciences*); *Qi-Chang Guo* (*Institute of Electronics, Chinese Academy of Sciences*); *Yun-Long Liu* (*Institute of Electronics, Chinese Academy of Sciences*); *Long-Yong Chen* (*Institute of Electronics, Chinese Academy of Sciences*);

08:50 Steepest-descent Accelerated Contrast-source Inversion Scheme for Sparse Electromagnetic Imaging
Ali Imran Sandhu (*King Abdullah University of Science and Technology (KAUST)*); *Abdulla Desmal* (*King Abdullah University of Science and Technology (KAUST)*); *Hakan Bagci* (*King Abdullah University of Science and Technology (KAUST)*);

09:10 Shear-induced Size Sorting of Rain and Hail Observed by a C-band Polarimetric Weather Radar
Tian-You Yu (*University of Oklahoma*); *Yadong Wang* (*Southern Illinois University*);

09:30 Imaging Plasma Inhomogeneities Using Spatial Wave Field Processing with DWFT Approximation
Sergei I. Knizhin (*Irkutsk State University*); *Mikhail V. Tinin* (*Irkutsk State University*); *A. D. Tkachev* (*Irkutsk State University*);

09:50 Magnetic Resonance Based Electrical Properties Reconstruction with Total Variation Regularization and Zero-point Control of Electric Fields
Motofumi Fushimi (*The University of Tokyo*); *Takaaki Nara* (*The University of Tokyo*);

10:10 Invited Non-linear Image Reconstruction for Halbach Magnet Array Based Magnetic Resonance Imaging
Shao Ying Huang (*Singapore University of Technology and Design*); *Wenchuan Mu* (*Singapore University of Technology and Design*); *Zhi Hua Ren* (*Singapore University of Technology and Design*); *Wen Wei Yu* (*Chiba University*);

10:40 **Coffee Break**

Session 1A3
SC1: Analytical Methods in Propagation, Scattering and Guiding of Waves

Wednesday AM, August 1, 2018

Room T3

Organized by Ramakrishna Janaswamy

Chaired by Ramakrishna Janaswamy

08:30 Rotated Uniaxial Parallel-plate Waveguide Green Function Using a Scalar Potential Formulation
Michael John Havrilla (*Air Force Institute of Technology*);

08:50 Physical Limits of Electromagnetic Responses of Layered Stacked Structures
Binbin Zhu (*Kuang-Chi Institute of Advanced Technology*); *Huquan Li* (*Kuang-Chi Institute of Advanced Technology*); *Ruopeng Liu* (*Kuang-Chi Institute of Advanced Technology*); *Chunlin Ji* (*Kuang-Chi Institute of Advanced Technology*); *Dong Wei* (*Shenzhen Kuang-Chi Institute of Advanced Technology*);

09:10 Fidelity of Integral Representations of Green's Functions in Open Regions
Ramakrishna Janaswamy (*University of Massachusetts*);

09:30 Study on a Fast Solver for Poisson's Equation Based on Deep Learning Technique
Tao Shan (*Tsinghua University*); *Xunwang Dang* (*Tsinghua University*); *Maokun Li* (*Tsinghua University*); *Fan Yang* (*Tsinghua University*); *Shenheng Xu* (*Tsinghua University*); *Ji Wu* (*Tsinghua University*);

09:50 Stored Electromagnetic Field Energies in General Materials
Geyi Wen (*Nanjing University of Information Science and Technology*);

10:10 Design of a Waveguide Slots Array Antenna for Uniform Heating of Material in a Cavity
Taewoo Yu (*Seoul National University*); *Sangwook Nam* (*Seoul National University*);

10:40 **Coffee Break**

Session 1A4
Advanced Computational Methods for Nano-optical Applications

Wednesday AM, August 1, 2018

Room T4

Organized by Ozgur Ergul, Shinichiro Ohnuki

Chaired by Ozgur Ergul, Shinichiro Ohnuki

08:30 High Order Curvilinear DGTD Methods for Local and Nonlocal Plasmonics
Nikolai Schmitt (*Cote d'Azur University, Inria, CNRS, LJAD*); *Jonathan Viquerat* (*Cote d'Azur University, Inria, CNRS, LJAD*); *Stephane Lanteri* (*Cote d'Azur University, Inria, CNRS, LJAD*); *Claire Scheid* (*Cote d'Azur University, LJAD, CNRS, Inria*);

08:50 Recent Advances in Thermally-assisted-occupation Density Functional Theory (TAO-DFT)
Jeng-Da Chai (*National Taiwan University*);

09:10 A Kretschmann-type Surface Plasmon Resonance Waveguide Sensor in the THz Region
Jun Shibayama (*Hosei University*); *Kota Mitsutake* (*Hosei University*); *J. Yamauchi* (*Hosei University*); *H. Nakano* (*Hosei University*);

09:30 Optimal Cavities to Enhance Free-space Matching in Solar Cells
Bariscan Karaosmanoglu (*Middle East Technical University*); *Ulas Topcuoglu* (*Middle East Technical University*); *Sadri Güler* (*Middle East Technical University*); *Emre Tuygar* (*Middle East Technical University*); *Ozgur Ergul* (*Middle East Technical University*);

09:50 Time-domain Reference Solutions of Near-field EM Waves Using Fast Inverse Laplace Transform
Soichiro Masuda (*Nihon University*); *Motohiro Endo* (*Nihon University*); *Ryohei Ohnishi* (*Nihon University*); *Shinichiro Ohnuki* (*Nihon University*);

10:10 Multiphysics Analysis of Plasmonic Photomixers under Periodic Boundary Conditions Using Discontinuous Galerkin Time Domain Method
Liang Chen (*King Abdullah University of Science and Technology (KAUST)*); *Kostyantyn Sirenko* (*O. Usikov Institute for Radiophysics and Electronics of National Academy of Sciences of Ukraine (IRE NASU)*); *Hakan Bagci* (*King Abdullah University of Science and Technology (KAUST)*);

10:40 **Coffee Break**

Session 1A5
SC1: Radar Cross Section

Wednesday AM, August 1, 2018

Room T5

Organized by Hiroshi Shirai, Ryoichi Sato

Chaired by Hiroshi Shirai, Ryoichi Sato

08:30 Analytical-Numerical Method for Transient Scattered Magnetic Field from a Coated Conducting Cylinder Excited by UWB Pulse Wave
Keiji Goto (*National Defense Academy*); *Toru Kawano* (*National Defense Academy*); *Manami Inoue* (*National Defense Academy*); *Hisaki Kitahara* (*National Defense Academy*); *Yuri Fukumura* (*National Defense Academy*);

08:50 Diffraction by a Rectangular Hole in a Thick Conducting Screen — Calculation of Aperture Fields
Hirohide Serizawa (*Numazu National College of Technology*); *Kaisei Okawa* (*Numazu National College of Technology*);

09:10 Plane Wave Scattering from Two Cracks on Conducting Plane
Ryoichi Sato (*Niigata University*); *Hiroshi Shirai* (*Chuo University*);

09:30 Wiener-Hopf Analysis of the Diffraction by a Slit in a Material Screen
Takashi Nagasaka (*Chuo University*); *Kazuya Kobayashi* (*Chuo University*);

09:50 Research on the Establishment of Scattering Model of Complex Cavity Based on Data-driven Approach
Jun Gu (*Shanghai Radio Equipment Research Institute*);

10:40 **Coffee Break**

Session 1A6
Parabolic Equation and Related Methods in Diffraction Theory

Wednesday AM, August 1, 2018

Room T6

Organized by Ivan V. Andronov, Andrey V. Shanin

Chaired by Ivan V. Andronov, Andrey V. Shanin

08:30 Parabolic Equation of Diffraction Theory: Why It Works Better than Expected?
Andrey V. Shanin (*Moscow State University*); *Andrey Igorevich Korolkov* (*Moscow State University*);

08:50 An Explanation of Solar Glories in Terms of Surface Waves Propagating in the Interior of Water Droplets
Andrey V. Osipov (*Microwaves and Radar Institute, German Aerospace Center (DLR)*);

09:10 On Diffraction of Whispering Gallery Modes by Boundary Inflection Points
Valery P. Smyshlyaev (*University College London*);

09:30 Dipole Field Diffraction by a Strongly Elongated Spheroid in High-frequency Approximation
Ivan V. Andronov (*St. Petersburg State University*);

09:50 Diffraction of TM Polarized EM Waves by a Nonlinear Inhomogeneous Dielectric Cylinder
Eugene Smolkin (*Penza State University*); *Maxim Snegur* (*Penza State University*); *Yury V. Shestopalov* (*University of Gavle*);

10:10 Measurement of the Diffraction Coefficient of a Trihedral Cone with Homogeneous Neumann Boundary Conditions
Valeriy Yu. Valyaev (*Nihon Michelin Tire Co. Ltd.*); *Andrey V. Shanin* (*Moscow State University*);

10:40 **Coffee Break**

Session 1A7
SC1: Recent Approaches to Periodic Structures 1

Wednesday AM, August 1, 2018

Room T7

Organized by Koki Watanabe, Gerard Granet

Chaired by Koki Watanabe, Gerard Granet

08:30 Realization of Linear Amplification of Optical Signal in Guiding Nanostructures
Vakhtang Jandieri (*University of Duisburg-Essen*); *Tornike Onoprishvili* (*Free University of Tbilisi*); *Ramaz Khomeriki* (*Tbilisi State University*); *Daniel Erni* (*University of Duisburg-Essen, Campus Duisburg*);

08:50 Experimental Study on Filtering Circuits by Electromagnetic Band Gap Structure in Microwave Frequency
Hiroshi Maeda (*Fukuoka Institute of Technology*); *K. Haari* (*Fukuoka Institute of Technology*); *X. Z. Meng* (*Fukuoka Institute of Technology*); *N. Higashinaka* (*Fukuoka Institute of Technology*);

09:10 Comparative Analysis of Various Domain Truncation Techniques for Initial-boundary Value Problems for Periodic Structures
Vadym Pazynin (*O. Usikov Institute for Radiophysics and Electronics of National Academy of Sciences of Ukraine (IRE NASU)*); *Kostyantyn Sirenko* (*O. Usikov Institute for Radiophysics and Electronics of National Academy of Sciences of Ukraine (IRE NASU)*); *Yuriy Sirenko* (*O. Usikov Institute for Radiophysics and Electronics of National Academy of Sciences of Ukraine (IRE NASU)*); *Nataliya Yashina* (*O. Usikov Institute for Radiophysics and Electronics of National Academy of Sciences of Ukraine (IRE NASU)*);

09:30 Comparative Study of Differential Theories to Surface-relief Gratings
Koki Watanabe (*Fukuoka Institute of Technology*);

09:50 Fourier Modal Method with Modified Boundary Conditions for Near-field Calculations of Diffraction Gratings
Roman Antos (*Charles University*); *Josef Navratil* (*Charles University*); *Jaroslav Hamrle* (*Charles University*); *Martin Veis* (*Charles University*); *Jan Mistrik* (*University of Pardubice*); *Miroslav Vlcek* (*University of Pardubice*);

10:10 Analysis of Arbitrary-shaped Surface Relief Gratings Using Matched Coordinates and Polynomial Expansions
Gerard Granet (*Universite Clermont Auvergne*);

10:40 **Coffee Break**

Session 1A8
FocusSession.SC2: Advanced Holography and Illusionary Effects by Metasurfaces, Metamaterials and Plasmonic Structures 1

Wednesday AM, August 1, 2018

Room T8

Organized by Yun Lai, Tao Li

Chaired by Yun Lai, Tao Li

08:30 Broadband Achromatic Metalenses
Invited
Shuming Wang (*Nanjing University*); *Pin Chieh Wu* (*National Taiwan University*); *Vin-Cent Su* (*National Taiwan University*); *Yi-Chieh Lai* (*National Cheng Kung University*); *Cheng Hung Chu* (*Research Center for Applied Sciences*); *Jia-Wern Chen* (*National Taiwan University*); *Shen-Hung Lu* (*National Taiwan University*); *Ji Chen* (*Nanjing University*); *Beibei Xu* (*Nanjing University*); *Chieh-Hsiung Kuan* (*National Taiwan University*); *Tao Li* (*Nanjing University*); *Shi-Ning Zhu* (*Nanjing University*); *Din Ping Tsai* (*Academia Sinica*);

08:50 Multiplexed Holography by SPP and Guided Mode Waves
Invited
Ji Chen (*Nanjing University*); *Chenchen Zhao* (*Nanjing University*); *Tao Li* (*Nanjing University*); *Shi-Ning Zhu* (*Nanjing University*);

09:10 Holographic Display with Full Parallax by Metamaterials
Invited
Wen Qiao (*Soochow University*); *Linsen Chen* (*Soochow University*);

09:30 Metasurface-based Cloaking Technologies
Invited
Hongchen Chu (*Soochow University*); *Jie Luo* (*Soochow University*); *Yun Lai* (*Soochow University*);

10:40 **Coffee Break**

Session 1A9
FocusSession.SC3: Novel Photonic Materials for Advanced Applications 1

Wednesday AM, August 1, 2018

Room A1

Organized by Iam-Choon Khoo

Chaired by Iam-Choon Khoo

08:30 Photonic Crystal Solar Cells: Toward Thermodynamic Power Conversion Efficiency
Keynote
Sajeev John (*University of Toronto*);

09:00 Photonics Polymers for Ultra-high Definition Display Systems
Yasuhiro Koike (*Keio University*);

09:20 Scanning Wave Photopolymerization for Design of Photo-patterned Liquid Crystal Films
Invited
Atsushi Shishido (*Tokyo Institute of Technology*);

09:40 Liquid Crystal Based Fiber-optic Random Laser Source for Speckle-free Imaging
Ting-Mao Feng (*National Sun Yat-Sen University*); *Tzu-Hsuan Yang* (*National Sun Yat-Sen University*); *Chun-Wei Chen* (*National Sun Yat-Sen University*); *Chun-Ta Wang* (*National Sun Yat-sen University*); *Hung-Chang Jau* (*National Sun Yat-sen University*); *Chih-Wei Wu* (*National Sun Yat-Sen University*); *Tsung-Hsien Lin* (*National Sun Yat-Sen University*);

10:00 Continuous Wave Operation of InAs-based Quantum Cascade Lasers above 20 µm
Zeineb Loghmari (*Université de Montpellier*); *Michael Bahriz* (*Universite de Montpellier*); *Ariane Meguekam-Sado* (*Université de Montpellier*); *Hoang Nguyen-Van* (*Université de Montpellier*); *Roland Teissier* (*Université de Montpellier*); *Alexei N. Baranov* (*Université de Montpellier*);

10:20 Chromatic Imaging
Invited
Zhiwen Liu (*Pennsylvania State University*); *Yizhu Chen* (*Pennsylvania State University*); *Jimin Kim* (*Pennsylvania State University*); *Jian Yang* (*Pennsylvania State University*);

10:40 **Coffee Break**

Session 1A10
FocusSession.SC3: Enabling Solutions of Nano-photonics 1

Wednesday AM, August 1, 2018

Room A2

Organized by Sergei Popov, Ari T. Friberg

Chaired by Sergei Popov, Ari T. Friberg

08:30 Control of Optical Radiation in Metamaterial Structures
Invited
Markus Nyman (*Aalto University*); *Andriy Shevchenko* (*Aalto University*); *Ville Kivijarvi* (*Aalto University*); *Matti Kaivola* (*Aalto University*);

08:50 Electrically-driven Nanoscale Chemistry with Plasmonic Nanorod Metamaterials
Invited
Pan Wang (*King's College London*); *Alexey V. Krasavin* (*King's College London*); *Mazhar E. Nasir* (*King's College London*); *Wayne Dickson* (*King's College London*); *Anatoly V. Zayats* (*King's College London*);

09:10 Photon Crystal Supported Surface Electromagnetic
Invited Waves and Their Use for Ultrasensitive Label-free Biosensing and Generation of Long Propagating Surface Plasmon-polaritons
Sergey K. Sekatskii (*Ecole Polytechnique Federale de Lausanne*);

09:30 Nano-structured Transparent Wood — Peculiar Find-
Invited ing or Promising Branch in Photonics?
Sergei Popov (*KTH Royal Institute of Technology*); *Elena Vasileva* (*KTH Royal Institute of Technology*); *Ilya Sychugov* (*KTH Royal Institute of Technology*); *Max Yan* (*KTH Royal Institute of Technology*); *Yuanyuan Li* (*KTH Royal Institute of Technology*); *Lars Berglund* (*KTH Royal Institute of Technology*);

09:50 Pancharatnam-Berry Geometric Phase and Surface
Invited Plasmon Polaritons
Salman Daniel (*University of Eastern Finland*); *Kimmo Saastamoinen* (*University of Eastern Finland*); *Taco D. Visser* (*Vrije Universiteit*); *Ari T. Friberg* (*University of Eastern Finland*);

10:10 Surface Plasmon Excitation on Hybrid Structures of
Invited Oxide Semiconductors of (Ga_2O_3)/ZnO:Ga in Near-infrared Range
Y. Kuranaga (*The University of Tokyo*); *H. Matsui* (*The University of Tokyo*); *A. Ikehata* (*National Agriculture and Food Research Organization*); *Y.-L. Ho* (*The University of Tokyo*); *J.-J. Delaunay* (*The University of Tokyo*); *Hitoshi Tabata* (*The University of Tokyo*);

10:40 **Coffee Break**

Session 1A11
SC3: 3D Integrated Photonics

Wednesday AM, August 1, 2018

Room A3

Organized by Linjie Zhou, Weidong Zhou

Chaired by Linjie Zhou

08:30 Heterogeneously Integrated Optoelectronic Devices
Invited for Implantable Neural Interfaces
Xing Sheng (*Tsinghua University*);

08:50 Heterogeneous Integration of III-V/Ge on Si for Pho-
Invited tonic Integrated Circuits
Mitsuru Takenaka (*The University of Tokyo*); *Shinichi Takagi* (*The University of Tokyo*);

09:10 Multi-Layer Silicon Photonics with MEMS for Scal-
Invited able Optical Switches
Tae Joon Seok (*Gwangju Institute of Science and Technology*);

09:30 Progress in Meta-structured Photonic Integrated De-
Invited vices
Jian Wang (*Huazhong University of Science and Technology*);

09:50 Heterogeneously Integrated Photonic Devices Using
Invited III-V, Si and SiN on Si Platform
Shinji Matsuo (*NTT Corporation*);

10:10 Heterogeneous Integration Technology for 3D Opto-
Invited electronic Integrated Circuits
Sang Hyeon Kim (*Korea Institute of Science and Technology (KIST)*);

10:40 **Coffee Break**

Session 1A12
FocusSession.SC3: Integrated and Fiber-based Photonic Circuits and Devices

Wednesday AM, August 1, 2018

Room A4

Organized by Mikhail E. Belkin, Alexander S. Sigov

Chaired by Mikhail E. Belkin, Alexander S. Sigov

08:30 Selecting an Optimal Concept to Measure Frequency
Invited Response of Millimeter-bandwidth Photodetector
Mikhail E. Belkin (*Moscow Technological University MIREA*); *Tatiana N. Bakhvalova* (*Moscow State Institute of Radioengineering, Electronics and Automation (Technical University)*); *D. Klushnik* (*Moscow State Technological University (MIREA), Scientific and Technological Center "Integrated Microwave Photonics"*); *Alexander S. Sigov* (*Moscow Technological University MIREA*);

08:50 Bending Effects in Multicore Optical Fibers for Fiber-
Invited optic Delay Line
O. N. Egorova (*Fiber Optics Research Center RAS (FORC RAS)*); *Mikhail E. Belkin* (*Moscow Technological University MIREA*); *S. G. Zhuravlev* (*Fiber Optics Research Center RAS (FORC RAS)*); *Sergey L. Semjonov* (*Fiber Optics Research Center RAS (FORC RAS)*);

09:10 Microwave Photon Transport Transistors
Invited
Stavros Iezekiel (*University of Cyprus*);

09:30 Optical Switching by Exploiting Integrated OAM Multiplexers (Invited)
Muhammad N. Malik (*CNIT*); *Mirco Scaffardi* (*CNIT*); *Filippo Scotti* (*CNIT — National Photonics Labs*); *Francesco Paolucci* (*Scuola Superiore Sant'Anna*); *Ning Zhang* (*University of Glasgow*); *Charalambos Klitis* (*University of Glasgow*); *Andrea Sgambelluri* (*Scuola Superiore Sant'Anna*); *Martin Lavery* (*University of Glasgow*); *Filippo Cugini* (*CNIT*); *Marc Sorel* (*University of Glasgow*); *Antonella Bogoni* (*CNIT*);

09:50 Characterization of Integrated Photonic Circuits with Ultrahigh Resolution (Invited)
Min Xue (*Nanjing University of Aeronautics and Astronautics*); *Shilong Pan* (*Nanjing University of Aeronautics and Astronautics*);

10:10 A High-speed Pipelined ADC Based on Open-loop Amplification
Yujia Huang (*Southeast University*); *Qiao Meng* (*Southeast University*); *Fei Li* (*Southeast University*);

10:40 **Coffee Break**

Session 1A13
Optical Tweezers and Applications

Wednesday AM, August 1, 2018

Room A5

Organized by Yuqiang Jiang

Chaired by Yuqiang Jiang

08:30 Spin-to-orbital Conversion of Angular Momentum in Femtosecond Laser Trapping
Yaqiang Qin (*Institute of Genetics and Developmental Biology, Chinese Academy of Sciences*); *Lu Huang* (*Institute of Genetics and Developmental Biology, Chinese Academy of Sciences*); *Honglian Guo* (*Minzu University of China*); *Hao Shi* (*Institute of Genetics and Developmental Biology, Chinese Academy of Sciences*); *Liantuan Xiao* (*Shanxi University*); *Yuqiang Jiang* (*Institute of Genetics and Developmental Biology, Chinese Academy of Sciences*);

08:50 A Chip of Pulse-laser-assisted Dual-beam Fiber-optic Trap
Zhenhai Fu (*Zhejiang University*); *Xuan She* (*Zhejiang University*); *Nan Li* (*Zhejiang University*); *Wenqiang Li* (*Zhejiang University*); *Huizhu Hu* (*Zhejiang University*);

09:10 Rotation of a Trapped Microsphere in a Misaligned Dual-beam Optical Tweezer
Wenqiang Li (*Zhejiang University*); *Nan Li* (*Zhejiang University*); *Zhenhai Fu* (*Zhejiang University*); *Heming Su* (*Zhejiang University*); *Yu Shen* (*Zhejiang University of Science and Technology*); *Huizhu Hu* (*Zhejiang University*);

09:30 Angular Stability Analysis of a Nanorod Rotated by Laser in Air
Heming Su (*Zhejiang University*); *Nan Li* (*Zhejiang University*); *Wenqiang Li* (*Zhejiang University*); *Huizhu Hu* (*Zhejiang University*);

09:50 Dynamic Analysis and Simulation of Optically Levitated Rotating Particle in High Vacuum
Qi Zhu (*Zhejiang University*); *Nan Li* (*Zhejiang University*); *Heming Su* (*Zhejiang University*); *Yu Shen* (*Zhejiang University of Science and Technology*); *Huizhu Hu* (*Zhejiang University*);

10:10 Dynamics of KIF11 Measured by Optical Tweezers
Yingxi Xue (*Institute of Genetics and Developmental Biology, Chinese Academy of Sciences*); *Lu Huang* (*Institute of Genetics and Developmental Biology, Chinese Academy of Sciences*); *Yuqiang Jiang* (*Institute of Genetics and Developmental Biology, Chinese Academy of Sciences*);

10:40 **Coffee Break**

Session 1A14
SC3: Integrated Chip-scale Photonic Signal Processing

Wednesday AM, August 1, 2018

Room A6

Organized by Jian Wang

Chaired by Jian Wang

08:30 Invited Advances in Photonic-integrated Fast Microwave phase-shifter in Silicon-on-insulator Technology for Beam-steering in 5G Systems and Radar Applications
C. Porzi (*TeCIP — Scuola Superiore Sant'Anna*); *F. Falconi* (*CNIT — National Photonics Labs*); *S. Pinna* (*TeCIP — Scuola Superiore Sant'Anna*); *V. Sorianello* (*CNIT — National Photonics Labs*); *G. Serafino* (*TeCIP — Scuola Superiore Sant'Anna*); *M. Puleri* (*Ericsson Telecomunicazioni SpA*); *A. D'Errico* (*Ericsson Telecomunicazioni SpA*); *F. Scotti* (*CNIT — National Photonics Labs*); *M. Romagnoli* (*CNIT — National Photonics Labs*); *Antonella Bogoni* (*CNIT — Photonics Networks and Technologies Laboratory*); *P. Ghelfi* (*TeCIP — Scuola Superiore Sant'Anna*);

08:50 Invited Active Silicon Photonic Devices and Integration & Related Applications in Signal Processing
Wei Jiang (*Nanjing University*);

09:10 Invited Silicon-based Optoelectronic Devices for Communication and Sensing Applications
Kyoungsik Yu (*KAIST*);

09:30 Invited Optical Signal Processing Using Silicon Photonic Nanobeam Devices: Filtering and Switching
Yong Zhang (*Shanghai Jiao Tong University*); *Ciyuan Qiu* (*Shanghai Jiao Tong University*); *Xinhong Jiang* (*Shanghai Jiao Tong University*); *Huanying Zhou* (*Shanghai Jiao Tong University*); *Zhenzhen Xu* (*Shanghai Jiao Tong University*); *Yikai Su* (*Shanghai Jiao Tong University*);

09:50 Invited Programmable Silicon Photonic Circuits for Multifunctional Microwave Photonic Signal Processing
Liangjun Lu (*Shanghai Jiao Tong University*);

10:10 Invited High Modulation Efficiency Compact Graphene-Si Waveguide Modulator
Xingjun Wang (*Peking University*); *Haowen Shu* (*Peking University*);

10:40 **Coffee Break**

Session 1A15
SC3: Future Wireless Communication Systems for Railways

Wednesday AM, August 1, 2018

Room A7

Organized by Hiroyo Ogawa, Hiroyuki Toda

Chaired by Hiroyuki Toda

08:30 Current and Future Trend of Research and Development of Telecommunication System for Railway
Kazuki Nakamura (*Railway Technical Research Institute*); *Kunihiro Kawasaki* (*Railway Technical Research Institute*);

08:50 Railway Radio Communication System for High Speed Train Using Millimeter Wave and RoF Technology
Nobuhiko Shibagaki (*Hitachi Kokusai Electric Inc.*); *Yousuke Sato* (*Hitachi Kokusai Electric Inc.*); *Kennich Kashima* (*Hitachi Kokusai Electric Inc.*);

09:10 Linear Cellularization Enabling Millimeter-wave Train Radio Communication Systems in 5G Era
Hiroshi Nishimoto (*Mitsubishi Electric Corporation*); *K. Kamohara* (*Mitsubishi Electric Corporation*); *F. Hasegawa* (*Mitsubishi Electric Corporation*); *S. Umeda* (*Mitsubishi Electric Corporation*); *Y. Kinoshita* (*Mitsubishi Electric Corporation*); *A. Okazaki* (*Mitsubishi Electric Corporation*); *A. Okamura* (*Mitsubishi Electric Corporation*);

09:30 Optical Access Network Technology for Millimeter-wave Railway Communication Systems Using Linear Cell Configuration
Atsushi Kanno (*National Institute of Information and Communications Technology*); *Pham Tien Dat* (*Waseda University*); *Naokatsu Yamamoto* (*National Institute of Information and Communications Technology*); *Tetsuya Kawanishi* (*National Institute of Information and Communications Technology*);

09:50 Propagation Study Including ITU-R Activities for Millimeter Wave Railway Communication Systems
Hirokazu Sawada (*National Institute of Information and Communication Technology (NICT)*); *Kentaro Ishizu* (*National Institute of Information and Communication Technology (NICT)*); *Fumihide Kojima* (*National Institute of Information and Communication Technology (NICT)*); *Hiroyo Ogawa* (*National Institute of Information and Communications Technology*); *Kazuki Nakamura* (*Railway Technical Research Institute*); *Nagateru Iwasawa* (*Railway Technical Research Institute*); *Kunihiro Kawasaki* (*Railway Technical Research Institute*); *Nobuhiko Shibagaki* (*Hitachi Kokusai Electric Inc.*); *Keizo Inagaki* (*National Institute of Information and Communications Technology*);

10:10 Spectrum Regulation in the 100-GHz Band for Railway Radiocommunication System
Hiroyo Ogawa (*National Institute of Information and Communications Technology*); *Atsushi Kanno* (*National Institute of Information and Communications Technology*); *Tetsuya Kawanishi* (*National Institute of Information and Communications Technology*); *Naokatsu Yamamoto* (*National Institute of Information and Communications Technology*);

10:40 **Coffee Break**

Session 1A16
SC5: Waves Propagation and Scattering in Random Media

Wednesday AM, August 1, 2018

Room A8

Organized by Hosam El-Ocla

Chaired by Hassan El-Sallabi

08:30 Improvement in Accuracy of Breakpoint Distance Model for Path Loss Prediction
Hassan El-Sallabi (*Emiri Signal and Information Technology Corps*); *Abdulaziz Aldosari* (*Emiri Signal and Information Technology Corps*); *Yahia Basahl* (*Emiri Signal and Information Technology Corps*); *Jean-Francois Chamberland* (*Texas A&M University*);

08:50 Effects of Storm Attenuation over Satellite Links in Sub-tropical Africa
Mary Nabangala Ahuna (*University of KwaZulu-Natal*); *Thomas Joachim Odhiambo Afullo* (*University of KwaZulu-Natal (UKZN)*);

09:10 A Comparative Study of Dual-slope Path Loss Model in Various Indoor Environments at 14 to 22 GHz
Nicholas O. Oyie (*University of KwaZulu-Natal (UKZN)*); *Thomas Joachim Odhiambo Afullo* (*University of KwaZulu-Natal (UKZN)*);

09:30 An Empirical Approach to Omnidirectional Path Loss and Line-of-sight Probability Models at 18 GHz for 5G Networks
Nicholas O. Oyie (*University of KwaZulu-Natal (UKZN)*); *Thomas Joachim Odhiambo Afullo* (*University of KwaZulu-Natal (UKZN)*);

09:50 The Second Order Moment Equation of Crossly Polarized EM-waves Due to Depolarization in Propagation through Continuous Isotropic Random Medium
Yukihisa Nanbu (*National Institute of Technology, Sasebo College*); *Mitsuo Tateiba* (*Kyushu University*);

10:10 Application of Hybrid T-matrix Method to Predict Vegetation Attenuation in Outdoor Agriculture Orchard and Comparison with Measurement
Tossaporn Srisooksai (*Tokyo Institute of Technology*); *Jun-Ichi Takada* (*Tokyo Institute of Technology*);

10:40 **Coffee Break**

Session 1A17
SC3: Guided-mode-resonance Devices and Applications 1

Wednesday AM, August 1, 2018

Room A9

Organized by Shogo Ura

Chaired by Shogo Ura

08:30 Invited Applications of Gradient Grating Period Guided-mode Resonance in Spectral Measurement
Cheng-Sheng Huang (*National Chiao Tung University*); *Hsin-An Lin* (*National Chiao Tung University*); *Chih-Wei Chang* (*National Chiao Tung University*); *Hsin-Yun Hsu* (*National Chiao Tung University*);

08:50 Invited GMR-type Multi-channel Wavelength Filters for NIR Spectroscopy
Yasuo Ohtera (*Tohoku University*);

09:10 Invited Guided Mode Resonant Grating for Thermal and Laser Applications
Kota Ito (*Toyota Central R&D Labs., Inc.*); *Takayuki Matsui* (*Toyota Central R&D Labs., Inc.*); *Hideo Iizuka* (*Toyota Central R&D Labs., Inc.*);

09:30 Invited Guided-mode Resonances in Dielectric Waveguide Gratings: Role of Surface Modulation Profile
Wenxin Liu (*Tongji University*); *Yong Sun* (*Tongji University*); *Hong Chen* (*Tongji University*);

09:50 Invited Guided-mode Resonance in Waveguide Cavity
Junichi Inoue (*Kyoto Institute of Technology*); *Shogo Ura* (*Kyoto Institute of Technology*); *Kenji Kintaka* (*National Institute of Advanced Industrial Science and Technology*);

10:10 Invited Guided-mode-resonance Biosensing
Martina Gerken (*Christian-Albrechts-Universitat zu Kiel*);

10:40 **Coffee Break**

Session 1A18
Application of EM Field in Medical Diagnostics and Therapy

Wednesday AM, August 1, 2018

Room A10

Organized by Jan Vrba

Chaired by Jan Vrba

08:30 Status of ThomX and TTX2 — Development of a High Power Optical Cavity Used for Laser Electron Beam Interaction
Huan Wang (*Universite Paris-Saclay*); *Loic Amoudry* (*Universite Paris-Saclay*); *Ronic Chiche* (*Universite Paris-Sud*); *Wenhui Huang* (*Tsinghua University*); *Aurelien Martens* (*Universite Paris-Sud*); *Viktor Soskov* (*Universite Paris-Sud*); *Kevin Cassou* (*Universite Paris-Sud*); *Kevin Dupraz* (*Universite Paris-Sud*); *Daniele Nutarelli* (*Universite Paris-Sud*); *Chuanxiang Tang* (*Tsinghua University*); *Lixin Yan* (*Tsinghua University*); *Fabian Zomer* (*Universite Paris 11*);

08:50 Microwave Interstitial Applicator Array for Treatment of Pancreatic Cancer
Jan Vrba (*Czech Technical University in Prague*); *Lucie Vojackova* (*Czech Technical University in Prague*); *Ondrej Fiser* (*Czech Technical University in Prague*); *Ilja Merunka* (*Czech Technical University in Prague*);

09:10 Microwaves in Medical Diagnostics and Treatment
Jan Vrba (*Czech Technical University in Prague*); *Jan Vrba, Jr.* (*Czech Technical University in Prague*); *David Vrba* (*Czech Technical University in Prague*); *Ondrej Fiser* (*Czech Technical University in Prague*); *Ilja Merunka* (*Czech Technical University in Prague*);

09:30 Advancements in the Development of Microwave Technology for Brain Stroke Monitoring
Rosa Scapaticci (*Institute for Electromagnetic Sensing of the Environment*); *J. A. Tobon Vasquez* (*CNR-IREA*); *G. Turvani* (*CNR-IREA*); *G. Dassano* (*CNR-IREA*); *N. Joachimowicz* (*Universite Paris Saclay*); *Bernard Duchene* (*CNRS, CentraleSupelec, Université Paris-Sud*); *Gennaro Bellizzi* (*University of Naples Federico II*); *E. Tedeschi* (*University of Naples Federico II*); *Mario Roberto Casu* (*Politecnico di Torino*); *Francesca Vipiana* (*Politecnico di Torino*); *Lorenzo Crocco* (*CNR — National Research Council of Italy*);

09:50 Numerical Study of Stroke Detection Using UWB Radar
Ondrej Fiser (*Czech Technical University in Prague*); *Vojtech Hruby* (*Czech Technical University in Prague*); *Ilja Merunka* (*Czech Technical University in Prague*); *Jan Vrba, Jr.* (*Czech Technical University in Prague*); *Jan Vrba* (*Czech Technical University in Prague*);

10:40 **Coffee Break**

Session 1P1
FocusSession.SC5: Remote Sensing of Soil Moisture

Wednesday PM, August 1, 2018

Room T1

Organized by Steven K. Chan, Rajat Bindlish

Chaired by Steven K. Chan

13:00 Prediction of Cement-based Materials' Water Content with the Use of Electromagnetic Homogenisation Schemes
Vincent Guihard (*EDF R&D*); *Frederic Taillade* (*EDF R&D*); *Jean-Paul Balayssac* (*Universite de Toulouse*); *Barthelemy Steck* (*EDF R&D*); *Julien Sanahuja* (*EDF R&D*); *Fabrice Deby* (*LMDC Toulouse*);

13:20 AMSR2 Soil Moisture Retrieval and Evaluation Using Successive Radiometric Overpass Observations
Steven K. Chan (*NASA Jet Propulsion Laboratory, California Institute of Technology*);

13:40 Physical Modeling of Transmission and Phase Shift of Vegetation and Trees at P-band for Remote Sensing of Soil Moisture
Huanting Huang (*University of Michigan*); *Leung Tsang* (*University of Michigan*); *Rashmi Shah* (*California Institute of Technology*); *Xiaolan Xu* (*California Institute of Technology*); *Simon H. Yueh* (*California Institute of Technology*);

14:00 Fully Bistatic Polarized Radar Scattering and Its Use in Parameters Inversion
Kun-Shan Chen (*Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences*); *Yang Yin* (*Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences*); *Yu Liu* (*Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences*); *Yongwei Liu* (*Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences*);

14:20 Multi-temporal L-band Estimation of Soil Moisture Using Bistatic GNSS Land Returns
Mohammad Al-Khaldi (*The Ohio State University*); *Joel T. Johnson* (*The Ohio State University*); *Eric Loria* (*The Ohio State University*); *Andrew O'Brien* (*The Ohio State University*);

14:40 Radar Bistatic Configuration for Soil Moisture Estimation at L-band Using Global Sensitivity Analysis Method
Jiangyuan Zeng (*Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences*); *Kun-Shan Chen* (*Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences*);

15:00 Root-zone and Surface Soil Moisture Retrievals Using Signal of Opportunity (SoOp) Observations
Rajat Bindlish (*NASA Goddard Space Flight Center*); *James L. Garrison* (*Purdue University*); *Mehmet Kurum* (*Mississippi State University*); *Jeffrey R. Piepmeier* (*NASA Goddard Space Flight Center*); *Manuel A. Vega* (*NASA Goddard Space Flight Center*); *Benjamin Nold* (*Purdue University*);

15:20 Multi-frequency Signals of Opportunity for Remote Sensing of Root Zone Soil Moisture
Simon H. Yueh (*California Institute of Technology*); *Rashmi Shah* (*California Institute of Technology*); *Xiaolan Xu* (*California Institute of Technology*); *Kelly Elder* (*California Institute of Technology*); *Steve Margulis* (*California Institute of Technology*);

15:40 **Coffee Break**

Session 1P2
FocusSession.SC5: Inverse Scattering, Imaging, and Remote Sensing 2

Wednesday PM, August 1, 2018

Room T2

Organized by Xiuzhu Ye, Xudong Chen

Chaired by Xiuzhu Ye

13:00 Keynote Multiphysics/Multimodality Inversion for Subsurface Sensing and Imaging
Qing Huo Liu (*Duke University*); *Yuan Fang* (*Duke University*); *Yunyun Hu* (*Duke University*); *Dezhi Wang* (*Duke University*); *Tian Lan* (*Xiamen University*); *Feng Han* (*Xiamen University*); *Na Liu* (*Xiamen University*);

13:30 Invited Recent Advances in Inverse Microwave Imaging
Uday K. Khankhoje (*Indian Institute of Technology Madras*);

13:50 Invited A Study of Successive Estimation Technique in Concrete Diagnosis
Zhi Qi Meng (*Fukuoka University*); *Tomonori Tsuburaya* (*Fukuoka University*); *Takashi Takenaka* (*Nagasaki University*);

14:10 Two-slab High Sensitivity Technique for Measurement of Permittivity of a Dielectric Slab in a Rectangular Waveguide
Roman Kushnin (*Riga Technical University*); *Janis Semenjako* (*Riga Technical University*); *Yury V. Shestopalov* (*University of Gavle*); *Andris Viduzs* (*Riga Technical University*);

14:25 Invited Inverse Problem and Image Reconstruction in Electrical Capacitance Tomography
Lijun Xu (*Beihang University*); *Jiangtao Sun* (*Beihang University*); *Shijie Sun* (*Beihang University*); *Zhang Cao* (*Beihang University*); *Jiayu Zhao* (*Beihang University*);

14:45 Shape Measurement Based on Combined Reduced Phase Dual-directional Illumination Digital Holography and Speckle Displacements
Davood Khodadad (*Linnaeus University*); *Behnam Tayebi* (*Korea University*);

15:00 Keynote Study on the Feasibility of Multi-physics Imaging for Human Thorax
Maokun Li (*Tsinghua University*); *Ke Zhang* (*Tsinghua University*); *Xiaoqian Song* (*Tsinghua University*); *Haolin Zhang* (*Tsinghua University*); *Fan Yang* (*Tsinghua University*); *Shenheng Xu* (*Tsinghua University*); *Aria Abubakar* (*Schlumberger Houston Formation Evaluation*);

15:40 **Coffee Break**

Session 1P3
SC1: Advances in Integral Equation Methods for Electromagnetic Problems

Wednesday PM, August 1, 2018

Room T3

Organized by Maokun Li, Gaobiao Xiao

Chaired by Maokun Li, Gaobiao Xiao

13:20 Invited A-Φ Formulation Time Domain Integral Equations Free from Interior Resonances
Thomas Edgar Roth (*University of Illinois at Urbana-Champaign*); *Weng Cho Chew* (*University of Illinois*);

13:40 A Fast Algorithm in Modeling Quasi-periodic Arrays
Xunwang Dang (*Tsinghua University*); *Maokun Li* (*Tsinghua University*); *Fan Yang* (*Tsinghua University*); *Shenheng Xu* (*Tsinghua University*);

14:00 Invited MOD Based Discontinuous Galerkin PMCHW Method for Simulating Transient Scattering Characteristics of Dielectric Objects
Li Huang (*Shanghai Jiao Tong University*); *Hao-Xuan Zhang* (*Shanghai Jiao Tong University*); *Liang Zhou* (*Shanghai Jiao Tong University*); *Wen-Yan Yin* (*Zhejiang University*);

14:20 Invited Fast Solution of Volume Integral Equations Based on Meshless Discretization
Qing Xu (*Tongji University*); *Mei Song Tong* (*Tongji University*);

14:40 Analyzing Phased Arrays with Basis Functions Associated with Characteristic Modes
Gaobiao Xiao (*Shanghai Jiao Tong University*); *Can Xiong* (*Shanghai Jiao Tong University*); *Yibei Hou* (*Shanghai Jiao Tong University*);

15:00 Convergence of Iterative Solution of a Linear System in the Framework of the Discrete Dipole Approximation
Maxim A. Yurkin (*Voevodsky Institute of Chemical Kinetics and Combustion, SB RAS*);

15:20 Reconstruction of the Poynting Vector from the Measurements of the Electric Field for 920 MHz Electromagnetic Wave Sources
Akihiro Chiba (*The University of Tokyo*); *Takaaki Nara* (*The University of Tokyo*);

15:40 **Coffee Break**

Session 1P4
SC1: Computational Simulations and Techniques in Electromagnetics

Wednesday PM, August 1, 2018

Room T4

Organized by Masahiro Tanaka, Shinichiro Ohnuki

Chaired by Masahiro Tanaka, Shinichiro Ohnuki

13:20 FDTD Analysis of Radiation and Reflection of Electromagnetic Fields in Finite Length Microstrip Lines with Terminal Cross-section
Rakkappan Balasubramanian (*Synclayer, Inc.*); *Yasumitsu Miyazaki* (*Aichi University of Technology*);

13:40 Parallel Computing in Particle Swarm Optimization for Antenna Design
Linh Ho Manh (*Hanoi University of Science and Technology*); *Nguyen Khac Kiem* (*Hanoi University of Science and Technology*); *Chien Dao Ngoc* (*Ministry of Science and Technology*);

14:00 Comparison Study on EFIE, MFIE and CFIE for Three-dimensional Hollow Waveguide
Masahiro Tanaka (*Gifu University*);

14:20 Ray Tracing in the Context of Atmospheric Propagation
Andreas Danklmayer (*Fraunhofer Institute for High Frequency Physics and Radar Techniques (FHR)*); *Frank Weinmann* (*Research Institute for High Frequency Physics and Radar Techniques*);

14:40 Full-vectorial Analysis of Optical Waveguide Discontinuities Using Propagation Operator Method Based on Finite Element Scheme
K. Morimoto (*Muroran Institute of Technology*); *Yasuhide Tsuji* (*Muroran Institute of Technology*);

15:00 Analysis of Electromagnetic Fields Combined with Magnetization Dynamics
Shinichiro Ohnuki (*Nihon University*); *Takumi Yasuda* (*Nihon University*); *Kazuyuki Tanaka* (*Nihon University*);

15:40 **Coffee Break**

Session 1P5
FocusSession: Education for Electromagnetics

Wednesday PM, August 1, 2018

Room T5

Organized by Eng Leong Tan, Ari Sihvola

Chaired by Eng Leong Tan, Ari Sihvola

13:20 Invited Study on Characteristics of High-gain, Narrow-band and Low-gain, Wideband Antennas
Mitsuo Taguchi (*Nagasaki Univ*);

13:40 Invited Analysis on Equation System in Textbook in Electromagnetics on Aspect of Network Topology
Osamu Sakai (*The University of Shiga Prefecture*); *Tetsuya Kojima* (*The University of Shiga Prefecture*);

14:00 Invited Demonstrating the Use of iPad to Aid Teaching of Transmission Line Theory in Undergraduate Electromagnetic Course
Eng Leong Tan (*Nanyang Technological University*); *Ding Yu Heh* (*Nanyang Technological University*);

14:20 Invited Broadband Electromagnetics Education: The Role of History of Electrical Engineering
Ari Sihvola (*Aalto University*);

14:40 Uncertainties in EMC — Calibration and Testing
Dirk L. R. Van Troyen (*Katholieke Universiteit Leuven*); *Filip Nauwelaerts* (*Katholieke Universiteit Leuven*);

14:55 Real-time Remote Practical and Virtual Lab Work in the Web Browser
Timothy D. Drysdale (*University of Edinburgh*);

15:10 Invited Ways to Enhance Teaching Effectiveness in Electromagnetics
Ying Wu (*King Abdullah University of Science and Technology (KAUST)*);

15:40 **Coffee Break**

Session 1P6
SC4: Computational Electromagnetics in Exposure Safety and Medical Application

Wednesday PM, August 1, 2018

Room T6

Organized by Akimasa Hirata, Tatsuya Kashiwa

Chaired by Akimasa Hirata, Tatsuya Kashiwa

13:00 Development on High Resolution Human Voxel Model for High Frequency Exposure Analysis
Kenji Taguchi (*Kitami Institute of Technology*); *Tatsuya Kashiwa* (*Kitami Institute of Technology*); *Akimasa Hirata* (*Nagoya Institute of Technology*);

13:20 Comparison of Thermal Response in Human and Rat for RF Field
Sachiko Kodera (*Nagoya Institute of Technology*); *A. Hirata* (*Nagoya Institute of Technology*);

13:40 Heat Potential of Power Density for MMW Exposure Assessment from 6 GHz to 1 THz
Kun Li (*National Institute of Information and Communications Technology*); *Kensuke Sasaki* (*National Institute of Information and Communications Technology*); *Soichi Watanabe* (*National Institute of Information and Communications Technology*);

14:00 Numerical Estimation on the Threshold of Nerve Excitation Caused by the Application of Current with Multiple Frequencies
Kei Makino (*Tokyo Metropolitan University*); *Yukihisa Suzuki* (*Tokyo Metropolitan University*); *Masao Taki* (*Tokyo Metropolitan University*);

14:20 Validation of Numerical Method for Analysis of Contact Current Using Measured Electric Field in Intermediate Frequency Band
Keisuke Arai (*Tokyo University of Agriculture and Technology*); *Jerdvisanop Chakarothai* (*National Institute of Information and Communication Technology*); *Kanako Wake* (*National Institute of Information and Communications Technology*); *Soichi Watanabe* (*National Institute of Information and Communications Technology*); *Takuji Arima* (*Tokyo University of Agriculture and Technology*); *Toru Uno* (*Tokyo University of Agriculture and Technology*);

14:40 Simulation of Cardiac Electrophysiology by Small Electric Dipoles with Numerical Model
T. Nakane (*Nagoya Institute of Technology*); *T. Ito* (*Nagoya Institute of Technology*); *Akimasa Hirata* (*Nagoya Institute of Technology*);

15:00 Transcutaneous Electrical Nerve Stimulation (TENS) during Pregnancy: Computing the Electric Field inside the Foetal Brain
Behailu Kibret (*Monash University*); *Malin Premaratne* (*Monash University*); *Assefa K. Teshome* (*Victoria University*); *Daniel T. H. Lai* (*Victoria University*);

15:20 Algorithm of Brain Wave Source Localization by Matching Pursuit Using Anatomical Human Head Model
Yuki Osachi (*Nagoya Institute of Technology*); *T. Ito* (*Nagoya Institute of Technology*); *A. Hirata* (*Nagoya Institute of Technology*);

15:40 **Coffee Break**

Session 1P7
SC1: Recent Approaches to Periodic Structures 2

Wednesday PM, August 1, 2018

Room T7

Organized by Koki Watanabe, Gerard Granet

Chaired by Koki Watanabe, Gerard Granet

13:20 Latest Advances on Modal Methods in Computational Electromagnetics: Applications in Nanophotonics and Plasmonics
Kofi Edee (*Clermont Uniniversite*); *M. Ben Rhouma* (*Universite Clermont Auvergne*); *M. Antezza* (*Universite Montpellier*); *B. Guizal* (*Universite Montpellier*);

13:40 Numerical Analysis for Structural Coloration in Multilayered Dielectric Gratings
Hideaki Wakabayashi (*Okayama Prefectural University*); *M. Asai* (*Kindai University*); *Jiro Yamakita* (*Okayama Prefectural University*);

14:00 Spectroscopic Ellipsometry Characterization of Surface Relief Chalcogenide Gratings
Jan Mistrik (*University of Pardubice*); *Roman Antos* (*Charles University*); *Karel Palka* (*University of Pardubice*); *Stanislav Slang* (*University of Pardubice*); *Liudmila Loghina* (*University of Pardubice*); *Marina Grinco* (*University of Pardubice*); *Josef Navratil* (*Charles University*); *Miroslav Vlcek* (*University of Pardubice*);

14:20 Coupling of Surface Plasmon Polariton Wave and Waveguide Modes
Jaromir Pistora (*VSB — Technical University of Ostrava*); *Jaroslav Vlcek* (*VSB — Technical University of Ostrava*); *Michal Lesnak* (*VSB — Technical University of Ostrava*);

14:40 Band-pass and Band-stop Characteristics of a Periodic Array of Magnetodielectric Circular Cylinders Using Analytic Dispersion Formulation
Yong Heui Cho (*Mokwon University*);

15:40 **Coffee Break**

Session 1P8
FocusSession.SC2: Advanced Holography and Illusionary Effects by Metasurfaces, Metamaterials and Plasmonic Structures 2

Wednesday PM, August 1, 2018

Room T8

Organized by Yun Lai, Tao Li

Chaired by Yun Lai, Tao Li

13:00 Invited Hiding Dynamic Objects Selectively at Visible Wavelengths
Qiluan Cheng (*Huazhong Agricultural University*); *Guo Ping Wang* (*Shenzhen University*);

13:20 Invited 3D Holographic Display with Enlarged Field of View Based on Binary Optical Elements
Erkai Hua (*Soochow University*); *Wen Qiao* (*Soochow University*); *Linsen Chen* (*Soochow University*);

13:40 Invited Holographic Related Technology Based on Metasurfaces
Lingling Huang (*Beijing Institute of Technology*);

14:00 Invited Broadband Achromatic Silicon Nitride Metalens for Unpolarized Visible Light
Zhi-Bin Fan (*Sun Yat-Sen University*); *Xiao-Ning Pang* (*Sun Yat-Sen University*); *Jian-Wen Dong* (*Sun Yat-Sen University*);

14:20 Invited Wave-front Reshaping of Surface Wave with Metawalls
Shaohua Dong (*Fudan University*); *Yu Zhang* (*Fudan University*); *Huijie Guo* (*Fudan University*); *Qiong He* (*Fudan University*); *Haibin Zhao* (*Fudan University*); *Lei Zhou* (*Fudan University*); *Shulin Sun* (*Fudan University*);

14:40 Invited Advanced Holography and Illusionary Effects by Reconfigurable Phase Control Metasurfaces
Tianhang Chen (*Zhejiang University*); *Bin Zheng* (*Zhejiang University*); *Lijun Guo* (*Zhejiang University*); *Huaping Wang* (*Zhejiang University*); *Lian Shen* (*Zhejiang University*); *Hongsheng Chen* (*Zhejiang University*);

15:00 Invited Programmable Imaging Based on Information Metasurfaces
Tie Jun Cui (*Southeast University*); *Lianlin Li* (*Peking University*);

15:40 **Coffee Break**

Session 1P9
FocusSession.SC3: Novel Photonic Materials for Advanced Applications 2

Wednesday PM, August 1, 2018

Room A1

Organized by Iam-Choon Khoo

Chaired by Iam-Choon Khoo, Zhiwen Liu

13:00 Invited Reusable Localized Surface Plasmon Sensors Based on Octupolar Nanostructures for dsDNA Detection
M. Rippa (*Institute of Applied Sciences and Intelligent Systems "E. Caianiello", CNR*); *R. K. Trojanowicz* (*Wroclaw University of Science and Technology*); *R. Castagna* (*Institute of Applied Sciences and Intelligent Systems "E. Caianiello", CNR*); *J. Zyss* (*LPQM-Ecole Normale Superieurede Cachan*); *K. Matczyszyn* (*Wroclaw University of Science and Technology*); *Lucia Petti* (*Institute of Applied Sciences and Intelligent Systems — ISASI, CNR*);

13:20 Photothermal Conjugated Polymer Films for Optical Actuation
Invited
Hanwhuy Lim (*Yonsei University*); *Jong Un Hwang* (*Yonsei University*); *Jinbo Kim* (*Yonsei University*); *Minsu Han* (*Yonsei University*); *Eunkyoung Kim* (*Yonsei University*);

13:40 Photonic Crystal Slab for Terahertz Applications
Invited
Masayuki Fujita (*Osaka University*);

14:00 The Physics and Applications of Coherent Control of Metasurfaces
Keynote
Nikolay I. Zheludev (*University of Southampton*); *Kevin F. MacDonald* (*University of Southampton*); *Eric Plum* (*University of Southampton*); *Daniele Faccio* (*Heriot-Watt University*);

14:30 Dynamics and Spectral Dependence of Ultrafast Optical Nonlinearities in Doped Semiconductors at Epsilon-near-zero
Invited
Sepehr A. Benis (*University of Central Florida*); *E. W. van Stryland* (*University of Central Florida*); *David J. Hagan* (*University of Central Florida*);

14:50 Superlight Inverse Doppler Effect
Xiao Lin (*Nanyang Technological University*); *Baile Zhang* (*Nanyang Technological University*);

15:10 Extreme Nonlinear Optics with Liquid Crystalline Photonic Crystals
Iam-Choon Khoo (*Pennsylvania State University*);

15:30 Plasmonic Enhanced Sensing Using Random Lasers
Judith M. Dawes (*Macquarie University*); *W. Z. W. Ismail* (*Macquarie University*); *C. Hurot* (*Macquarie University*); *C. Huard* (*Macquarie University*); *N. Sitpathom* (*Macquarie University*);

15:40 **Coffee Break**

Session 1P10
FocusSession.SC3: Enabling Solutions of Nano-photonics 2

Wednesday PM, August 1, 2018

Room A2

Organized by Sergei Popov, Ari T. Friberg

Chaired by Sergei Popov, Ari T. Friberg

13:20 Designing Spatially Dispersive Optical Nanomaterials
Invited
Andriy Shevchenko (*Aalto University*); *Markus Nyman* (*Aalto University*); *Ville Kivijarvi* (*Aalto University*); *Matti Kaivola* (*Aalto University*);

13:40 Quantum-mimetic Approach to Optical Coherence Tomography
Invited
Tomohiro Shirai (*National Institute of Advanced Industrial Science and Technology (AIST)*);

14:00 Optomechanical Interaction in Complex Dielectric Media
Invited
Pedro David Garcia Fernandez (*Catalan Institute of Nanoscience and Nanotechnology (ICN2)*); *C. M. Sotomayor-Torres* (*Catalan Institute of Nanotechnology*);

14:40 Resonances and Local Fields in the Nonlinear Response of Metal Nanostructures
Invited
Martti Kauranen (*Tampere University of Technology*); *Antti Kiviniemi* (*Tampere University of Technology*); *Robert Czaplicki* (*Tampere University of Technology*); *Mikko J. Huttunen* (*Tampere University of Technology*); *Kalle Koskinen* (*Tampere University of Technology*); *Ismo Vartiainen* (*University of Eastern Finland*); *Janne Laukkanen* (*University of Eastern Finland*); *Semyon Chervinskii* (*University of Eastern Finland*); *Markku Kuitinen* (*University of Eastern Finland*); *Sergey Scherbak* (*Peter the Great St. Petersburg Polytechnic University*); *Andrey Lipovskii* (*Peter the Great St. Petersburg Polytechnic University*);

15:00 On the Quest for High-efficiency Third-harmonic Generation on the Nanoscale
Invited
Gustavo Grinblat (*Imperial College London*); *Ibrahim Abdelwahab* (*Imperial College London*); *Toshihiko Shibanuma* (*Imperial College London*); *Pablo Albella* (*Imperial College London*); *Kai Leng* (*National University of Singapore*); *Xiao Chi* (*National University of Singapore*); *Andrivo Rusydi* (*National University of Singapore*); *Yi Li* (*Imperial College London*); *Kian Ping Loh* (*National University of Singapore*); *Stefan Alexander Maier* (*Imperial College London*);

15:40 **Coffee Break**

Session 1P11
SC3: Fiber Gratings and Optical Sensors

Wednesday PM, August 1, 2018

Room A3

Organized by Chin-Ping Yu

Chaired by Hung-Wen Chang, Nai-Hsiang Sun

13:00 Hydrophone Based on a Fiber Bragg Grating
Hung-Ying Chang (*Feng Chia University*); *Chan-Yu Kuo* (*Feng Chia University*); *Teng-Lung Wang* (*Feng Chia University*); *Yu-Chung Chang* (*National Changhua University of Education*); *Ming-Yue Fu* (*Air Force Academy*); *Wen-Fung Liu* (*Feng Chia University*);

13:20 Fiber FPI Sensor Formed by Etching a PCF with a Enhanced Temperature Sensing Sensitivity
Ho-Nien Wang (*National Sun Yat-Sen University*); *Jing-Chi Du* (*National Sun Yat-Sen University*); *Chin-Ping Yu* (*National Sun Yat-Sen University*);

13:40 Sensitivity-enhanced MZI-based Fiber RI Sensor by Collapsed the Middle Region of a Hollow-core Fiber
Huai-Hsaun Hsu (*National Sun Yat-sen University*); *Guan-Ting Lin* (*National Sun Yat-sen University*); *Chin-Ping Yu* (*National Sun Yat-Sen University*);

14:00 Analysis of Metallic Diffraction Grating in Photonic Crystal Fiber Sensor
Jung-Sheng Chiang (*I-Shou University*); *Jia-Ming Syu* (*I-Shou University*); *Ming-Young Chung* (*I-Shou University*); *Nai-Hsiang Sun* (*I-Shou University*);

14:20 Detecting Dynamics of Curved Shape Memory Alloy Beams Using Fiber Bragg Gratings
Kuo-Chih Chuang (*Zhejiang University*); *Xu-Feng Lv* (*Zhejiang University*); *Zhi-Wen Yuan* (*Zhejiang University*); *Yu-Han Wang* (*Zhejiang University*);

14:40 A Bi-parameter Sensor Based on Integrating a Fiber Mach-Zehnder Interferometer and a Fiber Bragg Grating
Shao-Wei Wang (*National Sun Yat-Sen University*); *Hung-Ying Chang* (*Feng Chia University*); *Wen-Fung Liu* (*Feng Chia University*); *Chin-Ping Yu* (*National Sun Yat-Sen University*);

15:00 Highly Sensitive Open-cavity Fiber-optic FPI Sensor by Using Beveled Fiber and Hollow-core Fiber
Shi-Yuan Lin (*National Sun Yat-sen University*); *Chin-Ping Yu* (*National Sun Yat-Sen University*);

15:20 Invited Constructing Structured Light Beams in Optical Fiber via Mode Reconfiguration
Ting Mei (*Northwestern Polytechnical University*); *W. Zhang* (*Northwestern Polytechnical University*); *F. Lu* (*Northwestern Polytechnical University*); *M. Liu* (*Northwestern Polytechnical University*);

15:40 **Coffee Break**

Session 1P12
FocusSession.SC3: Ultra-high Capacity Optical Communication

Wednesday PM, August 1, 2018

Room A4

Organized by Sergei Popov, Sergei K. Turitsyn

Chaired by Sergei Popov

13:20 Invited Exploration of Optical Amplifiers Based on Erbium (Er^{3+}) and Ytterbium (Yb^{3+}) Doped Fiber Segments and Its Emerging Applications
Ingrida Lavrinovica (*Riga Technical University*); *Andis Supe* (*Riga Technical University*); *Aleksejs Udalcovs* (*RISE Acreo AB*); *Oskars Ozolins* (*RISE Acreo AB*); *Sergei Popov* (*KTH Royal Institute of Technology*); *Jurgis Porins* (*Riga Technical University*);

13:40 Invited Phase-sensitive Optical Amplification in Optical Fiber and Free-space Communication
Peter A. Andrekson (*Chalmers University of Technology*);

14:00 Invited Deep Learning for Interference Cancellation in Non-orthogonal Signal Based Optical Communication Systems
Tongyang Xu (*University College London*); *Tianhua Xu* (*University of Warwick*); *Izzat Darwazeh* (*University College London*);

14:20 Invited Ultra-low Loss Fiber Technologies for High-capacity Transmission
Takemi Hasegawa (*Sumitomo Electric Industries, Ltd.*);

14:40 Towards Coherent Detection in SDM-based Optical Access Networks (Invited)
Aleksejs Udalcovs (*RISE Acreo AB*); *Oskars Ozolins* (*RISE Acreo AB*); *Xiaodan Pang* (*KTH Royal Institute of Technology*); *Jaime Rodrigo Navarro* (*Network and Transmission Laboratory, Acreo AB*); *Rui Lin* (*KTH Royal Institute of Technology*); *Marco Levantesi* (*KTH Royal Institute of Technology*); *Lin Gan* (*Huazhong University of Science and Technology*); *Richard Schatz* (*Royal Institute of Technology (KTH)*); *Anders Djupsjobacka* (*RISE Acreo AB*); *Jonas Martensson* (*RISE Acreo AB*); *Ming Tang* (*Huazhong University of Science and Technology (HUST)*); *Songnian Fu* (*Huazhong University of Science and Technology (HUST)*); *Deming Liu* (*Huazhong University of Science and Technology*); *Weijun Tong* (*Yangtze Optical Fibre and Cable Company Ltd. (YOFC)*); *Jiajia Chen* (*KTH Royal Institute of Technology*); *Gunnar Jacobsen* (*Acreo Swedish ICT AB*); *Sergei Popov* (*KTH Royal Institute of Technology*);

15:00 Opportunities and Challenges of Silicon Photonics Based Optical-layer Switching Toward Post-Moore's Law Era (Invited)
Shu Namiki (*National Institute of Advanced Industrial Science and Technology (AIST)*);

15:20 Nonlinearity Mitigation in Systems with Distributed Raman Amplification (Invited)
Giuseppe Rizzelli (*Instituto de Optica CSIC*); *Pawel Rosa* (*Consejo Superior de Investigaciones Científicas*); *Juan Diego Ania Castanon* (*Consejo Superior de Investigaciones Científicas*);

15:40 **Coffee Break**

Session 1P13
FocusSession.SC3: Silicon Lasers and Integrated Silicon Photonics

Wednesday PM, August 1, 2018

Room A5

Organized by Shuyu Zhang, Xiang Wu

Chaired by Shuyu Zhang, Xiang Wu

13:20 Modulation of Luminescence Behaviors by Incorporating Phosphorus into Si Nanocrystals/SiO_2 Multilayers (Invited)
Jun Xu (*Nanjing University*);

13:40 Design of Si-based Quasi-direct Band Ge Light Emitting Diodes for Enhanced Electroluminescence (Invited)
Cheng Li (*Xiamen University*); *Guangyang Lin* (*Xiamen University*); *Jianyuan Wang* (*Xiamen University*);

14:00 On-chip Detection from Directly Modulated Quantum Dot Microring Lasers on Si (Invited)
Yating Wan (*University of California Santa Barbara*); *Daehwan Jung* (*University of California Santa Barbara*); *Daisuke Inoue* (*Tokyo Institute of Technology*); *Justin C. Norman* (*University of California Santa Barbara*); *Chen Shang* (*University of California Santa Barbara*); *Arthur C. Gossard* (*University of California Santa Barbara*); *John E. Bowers* (*University of California*);

14:20 Silicon-based Polarization Analyzer by Polarization-frequency Mapping (Invited)
Hailong Zhou (*Huazhong University of Science and Technology*); *Siqi Yan* (*Huazhong University of Science and Technology*); *Jianji Dong* (*Huazhong University of Science and Technology*); *Xinliang Zhang* (*Huazhong University of Science and Technology*);

14:40 Ellipsometric Study on Photoluminescence-enhanced Silicon Nanocrystals Embedded in SiO_2 Matrices Obtained by Annealing Hydrogen Silsesquioxane (Invited)
Wenjie Zhou (*Fudan University*); *Yu-Xiang Zheng* (*Fudan University*); *Chi Zhang* (*Fudan University*); *Xiao-Feng Ma* (*The Shanghai Institute of Technical Physics of the Chinese Academy of Sciences*); *Da-Hai Li* (*Fudan University*); *Lei Ma* (*Fudan University*); *Fei Hu* (*Fudan University*); *Shang-Dong Yang* (*Fudan University*); *Liao Yang* (*Fudan University*); *Meng-Yu Gao* (*Fudan University*); *Ming Lu* (*Fudan University*); *Rongjun Zhang* (*Fudan University*); *Songyou Wang* (*Fudan University*); *Liangyao Chen* (*Fudan University*);

15:00 An All-silicon Distributed Feedback Laser Based on Silicon Nanocrystals with High Optical Gains (Invited)
Chi Zhang (*Fudan University*); *Dong-Chen Wang* (*Fudan University*); *Pan Zeng* (*Fudan University*); *Wenjie Zhou* (*Fudan University*); *Lei Ma* (*Fudan University*); *Hao-Tian Wang* (*Fudan University*); *Zhi-Quan Zhou* (*Fudan University*); *Fei Hu* (*Fudan University*); *Shuyu Zhang* (*Fudan University*); *Ming Lu* (*Fudan University*); *Xiang Wu* (*Fudan University*);

15:40 **Coffee Break**

Session 1P14
SC3: Photonics and Optoelectronics Integration for Terahertz Processing

Wednesday PM, August 1, 2018

Room A6

Organized by Kazutoshi Kato

Chaired by Kazutoshi Kato, Seiji Fukushima

13:00 Invited — Tunable Dual-mode Laser with Heterogeneous Structure of Quantum Dot and Si Photonics-based Photonic Integrated Circuits for Terahertz Application
Atsushi Matsumoto (*National Institute of Information and Communications Technology*); *Kouichi Akahane* (*National Institute of Information and Communications Technology*); *Toshimasa Umezawa* (*National Institute of Information and Communications Technology*); *Naokatsu Yamamoto* (*National Institute of Information and Communications Technology*); *Hirohito Yamada* (*Tohoku University*); *Tomohiro Kita* (*Tohoku University*);

13:20 Invited — Optoelectronic Frequency Conversion Employing an Electro-absorption Modulated Laser for a Cube Satellite Earth Station
Seiji Fukushima (*Kagoshima University*); *Tomonori Uezono* (*Kagoshima University*); *Sotaro Ohshima* (*Kagoshima University*); *Toshio Watanabe* (*Kagoshima University*); *Tsutomu Nagayama* (*Kagoshima University*);

13:40 Invited — Surface Micromachining Using Ultra-precision Ductile-mode Cutting Method for Strongly Confined Low-loss $LiNbO_3$ Waveguides
Ryo Takigawa (*Kyushu University*); *Tetsuya Kawanishi* (*National Institute of Information and Communications Technology*); *Eiji Higurashi* (*The University of Tokyo*); *Tanemasa Asano* (*Kyushu University*);

14:00 Invited — 300-GHz 100-Gb/s Wireless Transceiver Based on InP-HEMT MMICs
Hiroshi Hamada (*NTT Corporation*); *Takuya Fujimura* (*Tokyo Institute of Technology*); *Ibrahim Abdo* (*Tokyo Institute of Technology*); *Kenichi Okada* (*Tokyo Institute of Technology*); *Takuya Tsutsumi* (*NTT Corporation*); *Ho-Jin Song* (*NTT Corporation*); *Hiroki Sugiyama* (*NTT Corporation*); *Hideaki Matsuzaki* (*NTT Corporation*); *Hideyuki Nosaka* (*NTT corporation*);

14:20 Invited — Precise Frequency Measurement of THz Radiations Using Ultra-compact Electro-optic Probe
Isao Morohashi (*National Institute of Information and Communications Technology*); *Norihiko Sekine* (*National Institute of Information and Communications Technology*); *Iwao Hosako* (*National Institute of Information and Communications Technology*);

14:40 Invited — High SHF Band RF Signal Relay Employing Radio over Multi-mode Fibers
Takamitsu Aiba (*Yazaki Corporation*); *Atsushi Kanno* (*National Institute of Information and Communications Technology*); *Naokatsu Yamamoto* (*National Institute of Information and Communications Technology*); *Tetsuya Kawanishi* (*National Institute of Information and Communications Technology*); *Tomohiro Wakabayashi* (*Yazaki Corporation*);

15:00 — 600 GHz Wave Combiner Using Arrayed Photomixer
Nanami Nishiyama (*Kyushu University*); *Zhou Yang* (*Kyushu University*); *Gouki Sakano* (*Kyushu University*); *Hiroshi Ito* (*Kitasato University*); *Tadao Ishibashi* (*NTT Electronics Techno Corporation*); *Kazutoshi Kato* (*Kyushu University*);

15:20 — THz-wave Beam Steering by Utilizing Photomixing and Chromatic Dispersion of Two Lightwaves
Yuta Naito (*Kyushu University*); *Yusuke Yamanaka* (*Kyushu University*); *Nanami Nishiyama* (*Kyushu University*); *Kazutoshi Kato* (*Kyushu University*);

15:40 **Coffee Break**

Session 1P15
Advances in the Electromagnetic Modelling of Complex, Heterogeneous and Fractal Structures

Wednesday PM, August 1, 2018

Room A7

Organized by Muhammad Zubair, Yee Sin Ang

Chaired by Muhammad Zubair, Yee Sin Ang

13:20 — Modelling Defects on Junction between Coaxial Cables in View of Fault Diagnostic
Geoffrey Beck (*CEA-LIST*);

13:40 Surface Electromagnetic Waves Propagation Guided by Dissipative Dielectric Material Sandwich between Two Periodic Multilayered Isotropic Materials in Prism Coupled Configuration
Muhammad Danyal (*GIK Institute*); *Arbab Abdur Rahim* (*GIK Institute of Engineering Sciences and Technology*); *Husnul Maab* (*Ghulam Ishaq Khan Institute of Science and Technology*); *Muhammad Mahmood Ali* (*Ghulam Ishaq Khan Institute of Engineering Sciences and Technology*);

14:00 Modified Wang Shaped Ultra-wideband (UWB) Fractal Patch Antenna for Millimetre-wave Applications
Rana M. Hassan Bilal (*GIK Institute*); *Arbab Abdur Rahim* (*GIK Institute of Engineering Sciences and Technology*); *Husnul Maab* (*Ghulam Ishaq Khan Institute of Science and Technology*); *Muhammad Mahmood Ali* (*Ghulam Ishaq Khan Institute of Engineering Sciences and Technology*);

14:20 Combined Electric and Magnetic Field Tuning of the Impedance of Lanthanum Strontium Manganite Thin Film Interdigital Electrode Devices
Mahmoud Al Ahmad (*United Arab Emirates University*);

14:40 Magnetization State Determination Using Deep Learning
Mehroz Alam (*National University of Computer and Emerging Sciences*); *Akhtar Ali* (*National University of Computer and Emerging Sciences*); *Muhammad Shahzad Sultan* (*National University of Computer and Emerging Sciences*); *Mohammad Nauman* (*National University of Computer and Emerging Sciences*); *Omar Usman Khan* (*National University of Computer and Emerging Sciences*);

15:00 Modelling of Field-induced Electron Emission from Rough Surfaces: A Fractional Calculus Approach
Muhammad Zubair (*Information Technology University (ITU)*); *Yee Sin Ang* (*Singapore University of Technology and Design (SUTD)*); *Lay Kee Ang* (*Singapore University of Technology and Design (SUTD)*);

15:20 Ultra-broadband Tungsten Absorber
Ahsan Sarwar Rana (*Information Technology University (ITU)*); *Muhammad Qasim Mehmood* (*Information Technology University (ITU)*); *Heongyeong Jeong* (*Pohang University of Science and Technology (POSTECH)*); *Inki Kim* (*Pohang University of Science and Technology (POSTECH)*); *Junsuk Rho* (*Pohang University of Science and Technology (POSTECH)*);

15:40 **Coffee Break**

Session 1P16
SC5: Noninvasive Examination Techniques in Industry and Biomedicine

Wednesday PM, August 1, 2018

Room A8

Organized by Fedor Alexandrovich Gubarev

Chaired by Fedor Alexandrovich Gubarev, Andrei Vladimirovich Mostovshchikov

13:00 Invited Evaluation of Fractal Water Structures in Various Aqueous Systems by Broadband Dielectric Spectroscopy with Open-end Coaxial Electrodes
Shin Yagihara (*Tokai University*); *K. Shoji* (*Tokai University*); *T. Saito* (*Tokai University*); *Y. Maruyama* (*Tokai University*); *H. Saito* (*Tokai University*); *R. Kita* (*Tokai University*); *N. Shinyashiki* (*Tokai University*); *M. Fukuzaki* (*Tokai University*);

13:20 A Refined VR Based Video Indirect Ophthalmoscope
Kala Bharathan (*PESIT — Bangalore South Campus*); *S. P. Tejas* (*PESIT — Bangalore South Campus*); *G. C. Tejas* (*PESIT — Bangalore South Campus*); *T. E. Ashraya Nayaka* (*The Eye Foundation*);

13:40 Non-invasive and Non-destructive Measurements of Human Skin Using Dielectric Spectroscopy
Yuko Maruyama (*Tokai University*); *H. Kamata* (*Tokai University*); *R. Kita* (*Tokai University*); *N. Shinyashiki* (*Tokai University*); *Shin Yagihara* (*Tokai University*);

14:00 Fundamental Study for Optical Transillumination Imaging of Arteriovenous Fistula — System Integration into Practical Compact Device for Bedside Application
Hideaki Kamiyama (*Hokkaido University of Science*); *Masataka Kitama* (*Hokkaido University of Science*); *Masaji Yamashita* (*Hokkaido University of Science*); *Hisae O. Shimizu* (*Hokkaido University of Science*); *Yohichiro Kojima* (*Hokkaido University of Science*); *Go Okuyama* (*Hokkaido University of Science*); *Akihiro Kikuchi* (*Hokkaido University of Science*); *Koichi Shimizu* (*Waseda University*);

14:20 Monitoring of Nanopowder Combustion Ignited by Laser Radiation
Lin Li (*National Research Tomsk Polytechnic University*); *Andrei Vladimirovich Mostovshchikov* (*National Research Tomsk Polytechnic University*); *Alexander Petrovich Ilyin* (*Tomsk Polytechnic University*); *Andreas Smirnov* (*Technische Hochschule Nürnberg Georg-Simon-Ohm*); *Fedor Alexandrovich Gubarev* (*National Research Tomsk Polytechnic University*);

14:40 Corrosion Evaluation of Steel Reinforcing Bar Using Electromagnetic Method
Dong Feng He (*National Institute for Materials Science*); *Mitsuharu Shiwa* (*National Institute for Materials Science*); *S. Takaya* (*Kyoto University*); *N. Tsutsumi* (*National Institute for Materials Science*); *Koichi Tsuchiya* (*National Institute for Materials Science*);

15:00 Effect of Microwave Radiation on the Thermal Properties of the Electroexplosive Copper Nanopowder
Andrei Vladimirovich Mostovshchikov (*Tomsk Polytechnic University*); *Alexander Petrovich Il'in* (*Tomsk Polytechnic University*); *Vladislav Sergeevich Igumnov* (*Tomsk Polytechnic University*); *Pavel Yurievich Chumerin* (*Tomsk Polytechnic University*); *Fedor Alexandrovich Gubarev* (*Tomsk Polytechnic University*);

15:20 Application of Laser-speckle Correlation Method for Blood Coagulation Estimation
Lin Li (*National Research Tomsk Polytechnic University*); *Iuliia Dmitrievna Sytnik* (*Tomsk Polytechnic University*); *Yakov Semyonovich Peker* (*Siberian State Medical University*); *Fedor Alexandrovich Gubarev* (*Tomsk Polytechnic University*);

15:40 **Coffee Break**

Session 1P17a
SC3: Guided-mode-resonance Devices and Applications 2

Wednesday PM, August 1, 2018

Room A9

Organized by Shogo Ura

Chaired by Shogo Ura

13:00 Invited Structural Color Filters Based on Guided-mode Resonant Effect
Yoshiaki Kanamori (*Tohoku University*);

13:20 Invited Improved Infrared Photo-detection via Guided Mode Resonances
Jean-Luc Pelouard (*Universite Paris-Sud, Universite Paris-Saclay*);

13:40 Invited Sensor Applications of Guided Mode Resonant Gratings
Hisao Kikuta (*Osaka Prefecture University*); *Akio Mizutani* (*Osaka Prefecture University*);

14:00 Large Area Fabrication of Patterns of Resonant Waveguide Gratings by Electron Beam Lithography for Up-scalable Applications
Giorgio Quaranta (*Swiss Center of Electronics and Microtechnology (CSEM S.A.)*); *Guillaume Basset* (*Swiss Center of Electronics and Microtechnology (CSEM S.A.)*); *Zdenek Benes* (*Swiss Federal Institute of Technology (EPFL)*); *Olivier J. F. Martin* (*Swiss Federal Institute of Technology (EPFL)*); *Benjamin Gallinet* (*Ecole Polytech Fed Lausanne*);

Session 1P17b
SC1: Interaction of Electromagnetic Wave with Complex Media

Wednesday PM, August 1, 2018

Room A9

Organized by Mei Song Tong, Lin E. Sun

Chaired by Mei Song Tong

14:20 3D Inversion of Anisotropic Permittivities by Model-based Method
Lin E. Sun (*Youngstown State University*); *Y. J. Zhang* (*Tongji University*); *Mei Song Tong* (*Tongji University*);

14:40 Three-dimensional Electromagnetic Scattering and Inverse Scattering from Inhomogeneous Anisotropic Objects Embedded in Layered Uniaxial Anisotropic Media by the BCGS-FFT-VBIM Method
Feng Han (*Xiamen University*); *Jianliang Zhuo* (*Xiamen University*); *Na Liu* (*Xiamen University*); *Qing Huo Liu* (*Duke University*);

15:00 Characterizing the Electromagnetic Properties of Fiber Materials Using Effective Medium Technique
Yen-Ren Chen (*National Tsing-Hua University*); *Hsien-Wen Chao* (*National Tsing Hua University*); *Tsun-Hun Chang* (*National Tsing Hua University*);

15:20 Solvent Effect Induced Optical Nonlinearities in Absorbing Liquids Studied with Z-scan Technique
Yi-Ci Li (*National Chung Cheng University*); *Po-Yuan Huang* (*National Chung Cheng University*); *Yu-Ting Kuo* (*National Chung Cheng University*); *Tai-Huei Wei* (*National Chung Cheng University*);

15:40 **Coffee Break**

Session 1P18
SC1: Soft Magnetic Wires and Giant Magnetoimpedance Effect for High Sensitive Magnetic Sensors and Non-destructive Control

Wednesday PM, August 1, 2018

Room A10

Organized by Arkady P. Zhukov

Chaired by Arkady P. Zhukov

13:00 Invited — Real-time Magnetoencephalogram Measurement Using Highly Sensitive GMI Magnetic Sensor
Tsuyoshi Uchiyama (*Nagoya University*);

13:20 Invited — The Development of a High Sensitive Micro Size Magnetic Sensor Named as GSR Sensor Excited by GHz Pulse Current
Yoshinobu Honkura (*Magnedesign Corporation*); *Shinpei Honkura* (*Nanocoil Incorporation*);

13:40 Invited — Recent Developments on Wiegand Wire and Its Device Applications
Yasushi Takemura (*Yokohama National University*);

14:00 Magnetic Properties of GSR Sensor on Hysteresis and Linearity
Yoshinobu Honkura (*Magnedesign Corporation*); *Shinpei Honkura* (*Nanocoil Incorporation*);

14:20 The Development of an Ultra-small Type GSR Sensor with Its Element Formed on ASIC Surface
Yoshinobu Honkura (*Magnedesign Corporation*); *J. Tanabe* (*Magnedesign Corporation*); *E. Kikuch* (*Magnedesign Corporation*); *E. Kudo* (*Nanocoil Incorporation*); *Shinpei Honkura* (*Nanocoil Incorporation*);

14:40 Comprehensive Analysis of Frequency Dependence on Miniaturized Thin-film Magnetoimpedance Element
Hiroaki Kikuchi (*Iwate University*); *S. Oe* (*Iwate University*); *C. Sumida* (*Iwate University*); *T. Shima* (*Iwate University*); *S. Kamata* (*Iwate University*);

15:00 Engineering of GMI Effect of Fe-rich Microwires by Stress Annealing
Arkady P. Zhukov (*Universidad del Pais Vasco*); *Mihail Ipatov* (*Universidad del Pais Vasco*); *J. M. Blanco* (*Universidad del Pais Vasco*); *V. Zhukova* (*UPV/EHU*);

15:20 Optimization of GMI Effect and Magnetic Properties of Co-rich Microwires by Joule Heating
Arkady P. Zhukov (*Universidad del Pais Vasco and Ikerbasque*); *Paula Corte-Leon* (*UPV/EHU*); *Mihail Ipatov* (*Universidad del Pais Vasco*); *Valentina Zhukova* (*UPV/EHU*);

15:40 **Coffee Break**

Session 2A1
FocusSession.SC5: Remote Sensing for Hydrological Applications 2

Thursday AM, August 2, 2018

Room T1

Organized by Jian-Cheng Shi, Hui Lu

Chaired by Jian-Cheng Shi, Hui Lu

08:30 Invited — Development of an Enhanced Rainfall Product on the Tibetan Plateau: An Integrated Use of GPM, SMAP, and MODIS Products
Hui Lu (*Tsinghua University*); *Fan Yang* (*Tsinghua University*); *Peng Gong* (*Tsinghua University*); *Wei Wang* (*Tsinghua University*);

08:50 Trend Analysis of Total Precipitable Water in Recent Decade
Dabin Ji (*Jointly Sponsored by Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences*); *Jiancheng Shi* (*Institute of Remote Sensing and Digital Earth, CAS*); *Tianjie Zhao* (*Jointly Sponsored by Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences*); *Tianxing Wang* (*Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences*);

09:10 Critical Fluctuations for Prediction of Monsoon Timing: Observational Evidence
Elena Surovyatkina (*Potsdam Institute for Climate Impact Research*);

09:30 Satellite-based Estimation of All-sky Land Surface Shortwave and Longwave Radiation
Tianxing Wang (*Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences*); *Jian-Cheng Shi* (*Institute of Remote Sensing Applications, Chinese Academy of Sciences*);

09:50 Eutrophication Analysis of Water Reservoirs by Remote Sensing and Neural Networks
Hieda Adriana Nascimento Silva (*University of Rome "La Sapienza"*); *Massimo Panella* (*University of Rome "La Sapienza"*);

10:40 **Coffee Break**

Session 2A2
FocusSession.SC5: Inverse Scattering, Imaging, and Remote Sensing 3

Thursday AM, August 2, 2018

Room T2

Organized by Xudong Chen, Xiuzhu Ye

Chaired by Xiuzhu Ye

08:30 Invited — A Hybrid Cross-regularized Inversion Method for Highly Nonlinearly Inverse Scattering Problems
Kuiwen Xu (*Hangzhou Dianzi University*); *Yu Zhong* (*Institute of High Performance Computing, A*STAR*);

08:50 — Filtered Back Projection and Simultaneous Algebraic Reconstruction Technique for Image Formation on Square-shaped Physical Phantom Aimed at Microwave Imaging Applications
Syahrul Ramdani (*Universitas Indonesia*); *Aiyuni Putri Astyani* (*Universitas Indonesia*); *Basari* (*Universitas Indonesia*);

09:10 — Detection of Moving Object by Using Fractal Analysis of the Bird's-eye View Images
Takashi Kuroiwa (*Nihon University*); *Syota Yazawa* (*Nihon University*); *Kiyozumi Niizuma* (*Nihon University*);

09:30 — Estimation of the Energy Characteristics of a Multiposition Radar System for the Control of Small-sized Space Debris for Various Orbital Zones
A. I. Baskakov (*National Research University "Moscow Power Engineering Institute"*); *Aleksey Aleksandrovich Komarov* (*National Research University "Moscow Power Engineering Institute"*); *A. V. Ruban* (*National Research University "Moscow Power Engineering Institute"*);

09:50 — Estimation of the Resolution of a Multi-position Radar for the Control of Small-sized Space Debris Objects That Are Not Resolved by Angular Coordinates
A. I. Baskakov (*National Research University "Moscow Power Engineering Institute"*); *Aleksey Aleksandrovich Komarov* (*National Research University "Moscow Power Engineering Institute"*);

10:10 Invited — Thermoacoustic Monitoring Technique for Microwave Hyperthermia
Lifan Xu (*ShanghaiTech University*); *Xiong Wang* (*ShanghaiTech University*);

10:40 **Coffee Break**

Session 2A3
FocusSession.SC1&SC2: Multiscale and Multiphysics Computation and Applications 1

Thursday AM, August 2, 2018

Room T3

Organized by Qing Huo Liu

Chaired by Qing Huo Liu, Mei Song Tong

08:30 Invited — Efficient Electromagnetic Scattering Analysis for Multi-scale Problems Using Green's Functions of Arbitrary Scatterers
Shurun Tan (*University of Michigan*); *Leung Tsang* (*University of Michigan*);

08:50 Keynote — Multiscale Seismic Tomography of the Earth and Moon
Dapeng Zhao (*Tohoku University*);

09:20 Invited — Multiscale Discontinuous Galerkin Time Domain Methods for Electromagnetic and Elastic Waves
Qing Huo Liu (*Duke University*); *Qiwei Zhan* (*Duke University*); *Qingtao Sun* (*Duke University*); *Qiang Ren* (*Duke University*); *Ke Chen* (*Xiamen University*); *Na Liu* (*Xiamen University*);

09:40 Invited — Low Frequency Ultrasound Imaging for Human Throax
Xiaoqian Song (*Tsinghua University*); *Maokun Li* (*Tsinghua University*); *Fan Yang* (*Tsinghua University*); *Shenheng Xu* (*Tsinghua University*); *Aria Abubakar* (*Schlumberger Houston Formation Evaluation*);

10:00 Invited — Transient Multiphysics Simulation of High-speed Graphene-based Interconnects
Shuzhan Sun (*Purdue University*); *Dan Jiao* (*Purdue University*);

10:20 — Plasmonic Properties of Electrolytes beyond Classical Nanophotonics — A Two-fluid, Hydrodynamic Approach to Nonlocal Soft Plasmonics
Christin David (*Madrid Institute for Advanced Studies in Nanoscience (IMDEA Nanoscience)*);

10:40 **Coffee Break**

Session 2A4
SC1&SC3: Design and Simulation of Electromagnetic and Optical Devices 1

Thursday AM, August 2, 2018

Room T4

Organized by Shinichiro Ohnuki, Jun Shibayama

Chaired by Shinichiro Ohnuki, Jun Shibayama

08:30 Software-automatically-designed Ultrathin Broadband Metamaterial Absorber Based on Magnetic Rubber Plate and LC Resonator
Zeshan Shi (*Lanzhou University*); *Yiwen Hu* (*Lanzhou University*); *Zhong-Lei Mei* (*Lanzhou University*);

08:50 Structural Design of an Electromagnetic Wave Shield Composed of Multi-materials
Hong Kyoung Seong (*Yonsei University*); *Jeonghoon Yoo* (*Yonsei University*);

09:10 Modeling the Magnetic Field Radiated from a Ferrite Rod Antenna for Mining Proximity Detection Systems
Chenming (Jim) Zhou (*National Institute for Occupational Safety and Health (NIOSH)*); *Jingcheng Li* (*National Institute for Occupational Safety and Health (NIOSH)*); *Jacob Carr* (*National Institute for Occupational Safety and Health (NIOSH)*);

09:30 A Dielectric Rod Antenna Tapered Curvilinearly from the Inside of a Launching Horn
J. Yamauchi (*Hosei University*); *Ryu Ando* (*Hosei University*); *H. Nakano* (*Hosei University*);

09:50 Dielectric Feedome for Controlling Higher-order Mode Coefficients on a Square-aperture Horn Antenna
Raynell Andal Inojosa (*Doshisha University*); *Hiroyuki Deguchi* (*Doshisha University*); *Mikio Tsuji* (*Doshisha University*);

10:10 A Novel Approach to Microfabrication of Planar Microstrip Meander-line Slow Wave Structures for Millimeter-Band TWT
Andrei Victorovich Starodubov (*Saratov State University*); *Alexey Alexandrovich Serdobintsev* (*Saratov State University*); *Anton Mikhailovich Pavlov* (*Saratov State University*); *Victor Vladimirovich Galushka* (*Saratov State University*); *Peter Vladimirovich Ryabukho* (*Saratov State University*); *Nikita Mikhailovich Ryskin* (*V. A. Kotel'nikov Institute of Radio Engineering and Electronics RAS*);

10:40 **Coffee Break**

Session 2A5
SC3&SC4: Antenna Measurement and Electromagnetic Field Application Using Photonic Technique

Thursday AM, August 2, 2018

Room T5

Organized by Maya Mizuno, Yukihisa Suzuki

Chaired by Kiyotaka Sasagawa, Shintaro Hisatake

08:30 Comparison System for THz Generators and Detectors in Time-domain Spectroscopy
Maya Mizuno (*National Institute of Information and Communications Technology*); *Isao Morohashi* (*National Institute of Information and Communications Technology*);

08:50 Microwave Guided-mode Propagation and Reflection along Fiber-reinforced Plastic Mortal Pipe Walls and Their Applications to Nondestructive Measurement
Hiroshi Murata (*Mie University*);

09:10 Microwave Receiving System Using VCSEL Based Low Cost Photonics Applied Electromagnetic Measurement Technology
Satoru Kurokawa (*National Institute of Advanced Industrial Science and Technology*); *Masanobu Hirose* (*National Institute of Advanced Industrial Science and Technology*); *S. Murata* (*Koden Electronics Company Limited*); *Tsutomu Mitui* (*Koden Electronics Company Limited*);

09:30 Radiation Pattern Inspection of the FMCW Signal Using Asynchronous Electro-optic Measurement System
K. Horio (*Gifu University*); *H. Uchida* (*Arkray Inc.*); *M. Tojyo* (*Think-Lands Co., Ltd.*); *Y. Oikawa* (*Think-Lands Co., Ltd.*); *K. Miyaji* (*Think-Lands Co., Ltd.*); *Shintaro Hisatake* (*Gifu University*);

09:50 Magnetic Near Field Measurement by Pulsed Laser
Kazushi Ishiyama (*Tohoku University*);

10:10 Visualization and Quantification of Temperature Distributions Due to the Millimeter Wave Exposure with Micro-encapsulated Thermo-chromic Liquid Crystals
Yukihisa Suzuki (*Tokyo Metropolitan University*); *T. Tasaki* (*Kanazawa Medical University*); *M. Kojima* (*Kanazawa Medical University*);

10:40 **Coffee Break**

Session 2A6
Biomedical Imaging and Sensing Involving both Light and Ultrasound 1

Thursday AM, August 2, 2018

Room T6

Organized by Xueding Wang, Chulhong Kim

Chaired by Xueding Wang, Daniel Razansky

08:30 Invited One Step Forward to Clinical and Commercial Photoacoustic Imaging
Chulhong Kim (*Pohang University of Science and Technology*);

08:50 Photoacoustic Imaging and Evaluation of Cancer Histological Microfeatures and Microenvironment
Invited
Xueding Wang (*Tongji University*); *Guan Xu* (*University of Michigan*); *Janggun Jo* (*University of Michigan*); *Joel Tan* (*University of Michigan*); *Chang Lee* (*University of Michigan*); *Raoul Kopelman* (*University of Michigan*);

09:10 Three Dimensional Photoacoustic Breast Imaging Using the Handheld Ultrasound Linear Probe
Invited
Tao Han (*Peking University*); *Meng Yang* (*Peking Union Medical College Hospital, Chinese Academy of Medical Sciences & Peking Union Medical College*); *Fang Yang* (*Shenzhen Mindray Bio-Medical Electronics Co., Ltd.*); *Lingyi Zhao* (*Peking University*); *Yuxin Jiang* (*Peking Union Medical College Hospital, Chinese Academy of Medical Sciences & Peking Union Medical College*); *Changhui Li* (*Peking University*);

09:30 Wide-field Forward-viewing Photoacoustic Endoscopy Using a Fiber Bundle
Invited
Guangyao Li (*Shanghai Jiao Tong University*); *Zhendong Guo* (*Shanghai Jiao Tong University*); *Sung-Liang Chen* (*Shanghai Jiao Tong University*);

09:50 Synergy of Light and Sound for Deep-tissue Biomedical Optical Focusing and Imaging
Invited
H. Li (*The Hong Kong Polytechnic University*); *Z. Yu* (*The Hong Kong Polytechnic University*); *Y. Zhou* (*The Hong Kong Polytechnic University*); *Puxiang Lai* (*The Hong Kong Polytechnic University*);

10:10 Quantitative Photoacoustic Imaging Based on Parametric Spectral Analysis and Machine Learning
Invited
Chuangjian Cai (*Tsinghua University*); *Kexin Deng* (*Tsinghua University*); *Jianwen Luo* (*Tsinghua University*); *Cheng Ma* (*Tsinghua University*);

10:40 **Coffee Break**

Session 2A7
SC2: Advances in Metasurfaces 1

Thursday AM, August 2, 2018

Room T7

Organized by Shulin Sun, Qiong He

Chaired by Shulin Sun

08:30 Dielectric Metasurfaces-based Hologram and Cryptodisplay
Invited
Junsuk Rho (*Pohang University of Science and Technology (POSTECH)*);

08:50 Dispersion Engineering in Metasurfaces for Applicable Optical Devices
Invited
Tao Li (*Nanjing University*); *Shuming Wang* (*Nanjing University*); *P. C. Wu* (*Academia Sinica*); *C. Chen* (*Nanjing University*); *Ji Chen* (*Nanjing University*); *Shi-Ning Zhu* (*Nanjing University*); *Din Ping Tsai* (*Academia Sinica*);

09:10 Time-variant Metasurfaces as a Frequency Converting Platform
Invited
Bumki Min (*Korea Advanced Institute of Science and Technology (KAIST)*);

09:30 Microwave Digital Metasurface Controlled by Illuminating Light
Invited
Wei Xiang Jiang (*Southeast University*); *Xin Ge Zhang* (*Southeast University*);

09:50 Designing Silicon Mie Resonators as Subwavelength Color Pixels
Invited
Yusuke Nagasaki (*Osaka University*); *Masafumi Suzuki* (*Osaka University*); *Ikuto Hotta* (*Osaka University*); *Junichi Takahara* (*Osaka University*);

10:10 Extreme Nonlinear Optics Using Epsilon-near-zero Thin Films
Invited
Yuanmu Yang (*Tsinghua University*);

10:40 **Coffee Break**

Session 2A8
SC2: Theory and Applications of Anisotropic and Bianisotropic Metamaterials 1

Thursday AM, August 2, 2018

Room T8

Organized by Liang Peng, Yuntian Chen

Chaired by Liang Peng, Yuntian Chen

08:30 Anisotropic Coding Metasurfaces for Wave Manipulation
Invited
Qiang Cheng (*Southeast University*); *Jin Yang* (*Southeast University*);

08:50 Non-Abelian Gauge Field Optics
Invited
Zhongfei Xiong (*Huazhong University of Science and Technology*); *Ruo-Yang Zhang* (*Nankai University*); *Jian Qi Shen* (*Zhejiang University*); *Yuntian Chen* (*Huazhong University of Science and Technology*); *Che Ting Chan* (*The Hong Kong University of Science and Technology*);

09:10 Resonant Laser Printing of Functional Metasurfaces
Xiaolong Zhu (*Technical University of Denmark*); *N. Asger Mortensen* (*University of Southern Denmark*); *Uriel Levy* (*Hebrew University of Jerusalem*); *Anders Kristensen* (*Technical University of Denmark*);

09:30 Invited Highly Squeezed Anisotropic Polaritons in van der Waals Metamaterials
Xiao Lin (*Nanyang Technological University*); *Baile Zhang* (*Nanyang Technological University*);

09:50 Bianisotropy Induced Forbidden in Metamaterials
Liang Peng (*Hangzhou Dianzi University*); *Kewen Wang* (*Hangzhou Dianzi University*); *Gaofeng Wang* (*Hangzhou Dianzi University*);

10:10 Full Wave Scattering Solution of Localized Defects/Sources in a Periodic Lattice Using Green's Function of Periodic Scatterers
Shurun Tan (*University of Michigan*); *Leung Tsang* (*University of Michigan*);

10:40 **Coffee Break**

Session 2A9
FocusSession.SC3: Novel Photonic Materials for Advanced Applications 3

Thursday AM, August 2, 2018

Room A1

Organized by Iam-Choon Khoo

Chaired by Iam-Choon Khoo

08:30 Invited Photonic Devices Based on Liquid Crystals for Low Power Applications
Rita Asquini (*University of Rome La Sapienza*); *Luca Civita* (*University of Rome La Sapienza*); *Antonio d'Alessandro* (*University of Rome La Sapienza*);

08:50 Invited Plasmonic Self-growth of Plasmonic 3D Nanostructures
Satoshi Kawata (*Osaka University*);

09:10 Invited Optical and Magnetic Functions of Organic-inorganic Hybrids with Non-covalent Coupling of Functionalized Nanoparticles on Graphene
Sung-Hyun Kim (*Hannam University*); *Juhyoung Jung* (*Hannam University*); *Heungseob Shin* (*Hannam University*); *Sungwoo Jeon* (*Hannam University*); *Sinil Choi* (*Hannam University*); *Prem Prabhakaran* (*Hannam University*); *Kwang-Sup Lee* (*Hannam University*);

09:30 Invited Nonlinear Vortex Beam Array Generation by Spatially Modulated Fundamental Wave
Hui Li (*Shanghai Jiao Tong University*); *Haigang Liu* (*Shanghai Jiao Tong University*); *Xianfeng Chen* (*Shanghai Jiao Tong University*);

09:50 Invited Nonreciprocal Optical Metasurfaces
Xingjie Ni (*Pennsylvania State University*);

10:10 Invited Gold Nanorod@$NaYF_4$:Yb^{3+},Er^{3+} Multifunctional Nanocomposites for Simultaneous Diagnostic In Vitro Photothermal Therapy, Temperature Sensing and Bioimaging of Oral Cancer Cells
Duc Tu Vu (*National Chung Cheng University*); *Le Quoc Minh* (*Institute of Materials Science*); *Churng Ren Chris Wang* (*National Chung Cheng University*); *Lai-Kwan Chau* (*National Chung Cheng University*); *Tzyy Schiuan Yang* (*National Chung Cheng University*); *Michael W. Y. Chan* (*National Chung Cheng University*); *Cheng-I Lee* (*National Chung Cheng University*); *Chu-Chi Ting* (*National Chung Cheng University*); *Jiunn-Yuan Lin* (*National Chiao Tung University*); *Hung-Chih Kan* (*National Chung Cheng University*); *Chia Chen Hsu* (*National Chung Cheng University*);

10:40 **Coffee Break**

Session 2A10
Optoelectronic Devices and Integration

Thursday AM, August 2, 2018

Room A2

Chaired by Massimo Panella, Lin Yang

08:30 Optoelectronic Implementation of Echo State Networks for Real-time Big Data Forecasting
Massimo Panella (*University of Rome "La Sapienza"*); *Rita Asquini* (*University of Rome "La Sapienza"*);

08:50 2D Electronic and Photoelectronic Devices Driven by Ferroelectric
Xudong Wang ();

09:10 High-speed Silicon Mach-Zehnder Optical Modulators with Large Optical Bandwidths
Lin Yang (*Institute of Semiconductors, Chinese Academy of Sciences*); *Jianfeng Ding* (*Institute of Semiconductors, Chinese Academy of Sciences*); *Sizhu Shao* (*Institute of Semiconductors, Chinese Academy of Sciences*); *Lingchen Zheng* (*Institute of Semiconductors, Chinese Academy of Sciences*); *Lei Zhang* (*Institute of Semiconductors, Chinese Academy of Sciences*);

09:30 2D Integrating Cell for on Chip Absorption Measurement
Alexander Yu. Petrov (*Hamburg University of Technology*); *Lena Simone Fohrmann* (*Hamburg University of Technology*); *Gerrit Sommer* (*Hamburg University of Technology*); *Giampaolo Pitruzzello* (*University of York*); *Thomas F. Krauss* (*University of York*); *Manfred Eich* (*Hamburg University of Technology*);

09:50 Novel Measurement Set-ups of FTB Stress Propagation in an IC
Yann Bacher (); *Lorenzo Quazzo* (*Nice Sophia Antipolis University*); *Henri Braquet* (*Nice Sophia Antipolis University*); *Nicolas Froidevaux* (*ST Microelectronics*); *Gilles Jacquemod* (*Nice Sophia Antipolis University*);

10:10 All Optical Logic Gates Using Hybrid Insulator Metal Insulator Plasmonic Waveguide
Prateeksha Sharma (*Indian Institute of Information Technology, Design & Manufacturing*); *Kumar Vishwakarma Dinesh* (*Indian Institute of Information Technology, Design & Manufacturing*);

10:40 **Coffee Break**

Session 2A11
MS-1: Mini-symposium on Microwave Photonics 1

Thursday AM, August 2, 2018

Room A3

Organized by Christina Lim, Jianji Dong

Chaired by Jianji Dong

08:30 Invited Optical Access Technologies with Digital and Analog Approaches for 5G and Beyond
Hwan Seok Chung (*Electronics and Telecommunications Research Institute (ETRI)*);

08:50 Invited Direct Modulation Technology for RoF-based Mobile Fronthaul Networks
Hoon Kim (*KAIST*);

09:10 Invited Sigma-Delta Modulated Radio over Fiber Transmission
Guy Torfs (*Ghent University*); *Haolin Li* (*Ghent University*); *Laurens Breyne* (*Ghent University*); *J. Van Kerrebrouck* (*Ghent University*); *Chia-Yi Wu* (*Ghent University*); *Johan Bauwelinck* (*Ghent University*); *Piet Wambacq* (*IMEC*); *Piet Demeester* (*Ghent University*);

09:30 Invited Analog Radio over Fiber Systems for Future Mobile Fronthaul Networks
Pham Tien Dat (*National Institute of Information and Communications Technology*); *Atsushi Kanno* (*National Institute of Information and Communications Technology*); *Naokatsu Yamamoto* (*National Institute of Information and Communications Technology*); *Tetsuya Kawanishi* (*National Institute of Information and Communications Technology*);

09:50 Invited Radio-over-fiber Fronthaul Approaches for 5G Systems Operating at 60 GHz Band
Thas Ampalavanapillai Nirmalathas (*The University of Melbourne*); *Y. Tian* (*The University of Melbourne*); *Christina Lim* (*The University of Melbourne*); *K.-L. Lee* (*The University of Melbourne*);

10:10 Invited Photonic-based Mobile Front-haul Network for 5G Systems in Dense User Environment
Hiroshi Murata (*Osaka University*); *Andreas Stohr* (*Universität Duisburg-Essen*);

10:40 **Coffee Break**

Session 2A12
FocusSession.SC3: Advanced Optofluidics: Photonic Systems for Fluids and Life Science 1

Thursday AM, August 2, 2018

Room A4

Organized by Francesco Simoni, Luigino Criante

Chaired by Luigino Criante

08:30 Invited Optofluidic Polymer Chips for Raman Spectroscopy and Optical Trapping
Heidi Ottevaere (*Vrije Universiteit Brussel*); *Qing Liu* (*Vrije Universiteit Brussel*); *Hugo Thienpont* (*Vrije Universiteit Brussel*);

08:50 Invited A Hollow Fiber Coupler Sensor
Nithin Kuruba (*University of Victoria*); *Tao Lu* (*University of Victoria*);

09:10 Invited Photo-induced Orientation Change of Photo-responsive Liquid Crystals
Kenji Katayama (*Chuo University*);

09:30 New Frontiers in Optofluidics: Trapping with Plasmonic Optical Lattice, and Optogenetic Bioreactors
Invited
Ya-Tang Yang (*National Tsing Hua University*);

09:50 Single-step Solvent-free Lift-off Nanolithgraphy for Wearable Photo- and Plasmonic-mobile SERS Nanosensors
Invited
Riccardo Castagna (*Institute of Applied Sciences and Intelligent Systems "E. Caianiello", CNR*); *Massimo Rippa* (*Institute of Applied Sciences and Intelligent Systems "E. Caianiello", CNR*); *Lucia Pettti* (*Institute of Applied Sciences and Intelligent Systems "E. Caianiello", CNR*);

10:10 Integrated In-plane Hemispherical Active Resonator for Lab-on-a-chip Platforms
Invited
Silvio Bonfadini (*Istituto Italiano di Tecnologia*); *Paolo Spegni* (*Universita Politecnicadelle Marche*); *Francesco Simoni* (*Universita Politecnica delle Marche*); *Luigino Criante* (*Istituto Italiano di Tecnologia*);

10:40 **Coffee Break**

Session 2A13
Extended/Unconventional Electromagnetic Theory, EHD(Electro-hydrodynamics)/EMHD(Electro-magneto-hydrodynamics), and Electro-biology

Thursday AM, August 2, 2018

Room A5

Organized by Eva Gescheidtova

Chaired by Petr Marcon

08:30 Speed of Light in Vacuum in the Case of a Lumped Electric Circuit
Namik Yener (*Kocaeli University*);

08:50 Numerical Models of a Multilayered Graphene Structure
Pavel Fiala (*Brno University of Technology*); *J. Maxa* (*Brno University of Technology*);

09:10 Algorithms to Detect and Localize the Source of a Wideband Pulse Signal
Radim Kadlec (*Brno University of Technology*); *Petr Drexler* (*Brno University of Technology*); *P. Machala* (*Brno University of Technology*);

09:30 A Numerical Analysis of a Periodic Resonant Structure at THz Frequencies
Tomas Kriz (*Brno University of Technology*); *Petr Drexler* (*Brno University of Technology*); *Radim Kadlec* (*Brno University of Technology*);

09:50 Vision-based and Differential Global Positioning System to Ensure Precise Autonomous Landing of UAVs
Petr Marcon (*Brno University of Technology*); *Jiri Janousek* (*Brno University of Technology*); *Radim Kadlec* (*Brno University of Technology*);

10:40 **Coffee Break**

Session 2A14
Oral Presentations for Best Student Paper Awards — SC1: CEM, EMC, Scattering & EM Theory

Thursday AM, August 2, 2018

Room A6

Chaired by Yury V. Shestopalov, Paul D. Smith, Mei Song Tong

08:30 High Frequency Scattering from Conducting Rectangular Cylinder via Surface Equivalence Theorem
Hieu Ngoc Quang (*Chuo University*); *Hiroshi Shirai* (*Chuo University*);

08:50 $\boldsymbol{H}$-polarized Plane Wave Diffraction by Thick Conducting Slits
Khanh Nam Nguyen (*Chuo University*); *Hiroshi Shirai* (*Chuo University*);

09:10 An Enhanced Model for the Analysis of Non-uniform Multiconductor Transmission Lines Based on Scattering Theory
Manuja Gunawardana (*University of Manitoba*); *Behzad Kordi* (*University of Manitoba*);

09:30 Spatial Prediction of Electromagnetic Fields Using Few Measurements
Chandan Bhat (*Indian Institute of Technology Madras*); *Ankit Gupta* (*Indian Institute of Technology Madras*); *Radhakrishna Ganti* (*Indian Institute of Technology Madras*); *Uday K. Khankhoje* (*Indian Institute of Technology Madras*);

09:50 Coupling of Differential and Common Modes of Two-line Circuits in the Multi-conductor Transmission-line Theory Including Radiation
Shuji Kitora (*Osaka University*); *Souma Jinno* (*Osaka University*); *H. Toki* (*Osaka University*); *M. Abe* (*Osaka University*);

10:40 **Coffee Break**

Session 2A15
Oral Presentations for Best Student Paper Awards — SC2: Metamaterials, Plasmonics and Complex Media

Thursday AM, August 2, 2018

Room A7

Chaired by Tadao Nagatsuma, Andrey V. Osipov, Ari Sihvola

08:30 Invited — Orbital Angular Momentum Generation Using Composite Quasi-continuous Metasurfaces with Perfect Efficiency
Menglin L. N. Chen (*The University of Hong Kong*); *Li Jun Jiang* (*University of Hong Kong*);

08:50 Giant Nonlinear Response of Subwavelength Dielectric Resonators Enhanced by Bound States in the Continuum
Kirill L. Koshelev (*ITMO University*); *L. Carletti* (*University of Brescia*); *C. De Angelis* (*University of Brescia*); *Yu. S. Kivshar* (*Australian National University*);

09:10 Metasurfaces for Improvement Magnetic Resonance Imaging Characteristics: Novel Designs and In Vivo Studies
Alena V. Shchelokova (*ITMO University*); *Alexey P. Slobozhanyuk* (*ITMO University*); *Stanislav B. Glybovski* (*ITMO University*); *Irina Melchakova* (*ITMO University*); *Pavel A. Belov* (*ITMO University*);

09:30 Characterization of Terahertz Plasmonic Structures Based on Metallic Wire Woven Meshes
Dejun Liu (*University of Tsukuba*); *Borwen You* (*University of Tsukuba*); *Ja-Yu Lu* (*National Cheng Kung University*); *Toshiaki Hattori* (*University of Tsukuba*);

09:50 Invited — Helicity-induced Multifunctional Devices Based on Hybrid Metasurfaces
He-Xiu Xu (*Air Force Engineering University*); *Lei Han* (*National University of Singapore*); *Yunming Sun* (*Key Lab of Aeronautics Computing Technique*); *Tong Liu* (*Fudan University*); *Cheng-Wei Qiu* (*National University of Singapore*);

10:40 **Coffee Break**

Session 2A16
Oral Presentations for Best Student Paper Awards — SC3: Optics and Photonics

Thursday AM, August 2, 2018

Room A8

Chaired by Stavros Iezekiel, Sergei Popov, Hiroyuki Toda

08:30 Integrated Circuits Using Photonic-crystal Slab Waveguides and Resonant Tunneling Diodes for Terahertz Communication
Xiongbin Yu (*Osaka University*); *Ryoumei Yamada* (*Osaka University*); *Jae-Young Kim* (*Fundamental Research and Development Division, ROHM Co., Ltd.*); *Masayuki Fujita* (*Osaka University*); *Tadao Nagatsuma* (*Osaka University*);

08:50 Invited — Improved Detection Strategies for Nonlinear Frequency-division Multiplexing
Stella Civelli (*TeCIP Institute, Scuola Superiore Sant'Anna*); *Enrico Forestieri* (*TeCIP Institute, Scuola Superiore Sant'Anna*); *Marco Secondini* (*TeCIP Institute, Scuola Superiore Sant'Anna*);

09:10 Open Area Concealed Weapon Detection Sensor System Development
Yuxiang Huang (*University of Huddersfield*); *Peter Mather* (*University of Huddersfield*); *Martin James Norbury Sibley* (*University of Huddersfield*);

09:30 Design and Analysis of Inductive Reluctance Position Sensor
Chi-Fu Hong (*National Tsing Hua University*); *Shang-Hsun Mao* (*ANSYS Taiwan*); *Pei Jen Wang* (*National Tsing Hua University*);

10:40 **Coffee Break**

Session 2A17
Oral Presentations for Best Student Paper Awards — SC4: Antennas and Microwave Technologies

Thursday AM, August 2, 2018

Room A9

Chaired by Koichi Ito, Malay Ranjan Tripathy, Jan Vrba

08:30 Wireless Energy Harvesting in RFID Applications at 5.8 GHz ISM Band, a System Analysis
Sanaz Haddadian (*University of Paderborn*); *J. Christoph Scheytt* (*University of Paderborn*);

08:50 A Novel Microwave Applicator for Sandy Soil Disinfection
Abdelrhman Sabry (*Egypt-Japan University of Science and Technology*); *Ahmed Allam* (*Egypt-Japan University of Science and Technology*); *Adel B. Abdel-Rahman* (*South Valley University*); *Diaa El-Ansary* (*Alexandria University*);

09:10 Study of Simultaneous Switching Noise in Two-dimensional Transport Theory including Radiation Effect
Souma Jinno (*Osaka University*); *Shuji Kitora* (*Osaka University*); *Hiroshi Toki* (*Osaka University*); *M. Abe* (*Osaka University*);

09:30 Effect of Absorbing Coating on Shielding Effectiveness of Electromagnetic Shielding Fabric
Jiajia Duan (*Zhongyuan University of Technology*); *Xiuchen Wang* (*Zhongyuan University of Technology*); *Yayun Li* (*Zhongyuan University of Technology*); *Zhe Liu* (*Zhongyuan University of Technology*); *Yaping Li* (*Zhongyuan University of Technology*);

09:50 Optimal Design of Yagi Microstrip Antenna Based on Particle Swarm Optimization with Fitness Estimation
Xiao-Hong Fan (*Jiangsu University of Science and Technology*); *Yu-Bo Tian* (*Jiangsu University of Science and Technology*); *Yi Zhao* (*Jiangsu University of Science and Technology*);

10:40 **Coffee Break**

Session 2A18
Oral Presentations for Best Student Paper Awards — SC5: Remote Sensing, Inverse Problems, Imaging, Radar and Sensing

Thursday AM, August 2, 2018

Room A10

Chaired by Lianlin Li, Motoyuki Sato, Leung Tsang

08:30 Analysis of Singular-point Generating Mechanisms Based on the Correlations among the Parameters in Coherency Matrix and Those in the Optimized Scattering-mechanism Vector in PolInSAR
Yuta Otsuka (*The University of Tokyo*); *Tomoharu Shimada* (*The University of Tokyo*); *Ryo Natsuaki* (*The University of Tokyo*); *Akira Hirose* (*The University of Tokyo*);

08:50 Invited Imaging Performance of Backward and Forward Bistatic SAR
Tingting Li (*Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences*); *Kun-Shan Chen* (*Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences*); *Ming Jin* (*Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences*);

09:10 Adaptive Subsurface Visualization System Using Phase Retrieval Method and Complex-valued Self-organizing Map
Soshi Shimomura (*The University of Tokyo*); *Akira Hirose* (*The University of Tokyo*);

09:30 Influence Analysis of Uneven Surface on Landmine Detection Using Holographic Radar
Tan Qin (*Tongji University*); *Luca Bossi* (*University of Florence*); *Alessandro Bartolini* (*University of Florence*); *Pierluigi Falorni* (*Universita di Firenze*); *Pietro Giannelli* (*University of Florence*); *Yonghui Zhao* (*Tongji University*); *Lorenzo Capineri* (*Universita di Firenze*);

09:50 A 3.5–8 GHz Analog Complex Cross-correlator for Interferometric Passive Millimeter-wave Security Imaging Systems
Chao Wang (*Beihang University*); *Xiuzhu Ye* (*Beihang University*); *Xi Chen* (*Beihang University*); *Xin Xin* (*Beihang University*); *Bingyuan Liang* (*Beihang University*); *Zhi-Ping Li* (*Beihang University*); *Anyong Hu* (*Beihang University*); *Jungang Miao* (*Beihang University*);

10:40 **Coffee Break**

Session 2A0
Poster Session 1

Thursday AM, August 2, 2018

8:30 AM - 11:30 AM

Room Foyer

1 Numerical Estimation Based on Ray Tracing for Automotive Radar Beam Through Curved Dielectric Slab
Seongjae Kim (*Gwangju Institute of Science and Technology*); *Kangwook Kim* (*Gwangju Institute of Science and Technology*);

2 Electric Field Strength in Layered Materials with Varied Parameters
Radim Kadlec (*Brno University of Technology*); *Tomas Kriz* (*Brno University of Technology*);

3 On the Evaluation of Sources in Highly Accurate Time Domain Simulations on the Basis of Faber Polynomials
Hendrik Kleene (*TU Dortmund University*); *Dirk Schulz* (*TU Dortmund University*);

4 Extra Large Electromagnetics Simulation with LRnLA Algorithms
V. D. Levchenko (*Keldysh Institute of Applied Mathematics RAS*); *Anastasia Y. Perepelkina* (*Keldysh Institute of Applied Mathematics RAS*); *A. V. Zakirov* (*Kintech Lab*); *Y. Zempo* (*Hosei University*);

5 Analysis of Uniform Heating of Food in Microwave Oven by Changing Location of Two Input Ports Supplied In-phase or Anti-phase Power Alternately
Ryota Shinozaki (*National Institute of Technology, Kisarazu College*); *Keisuke Ejiri* (*National Institute of Technology, Kisarazu College*); *Takanobu Ohno* (*Kisarazu National College of Technology*); *Kosei Tanii* (*National Institute of Technology, Kisarazu College*); *Masahiro Uehara* (*National Institute of Technology, Kisarazu College*);

6 Extension of the Parabolic Equation Method in the Time Domain
Mikhail Sergeyevich Mikhailov (*National Research University "Moscow Power Engineering Institute"*); *Aleksey Aleksandrovich Komarov* (*National Research University "Moscow Power Engineering Institute"*);

7 The Design and Optimization of Optical Structure by Using Genetic Algorithm
Bo Wang (*Fudan University*); *Wenzhe Liu* (*Fudan University*); *Lei Shi* (*Fudan University*);

8 Method for High Sensitivity in Hall Plates
Jin-Sup Kim (*Korea Electronics Technology Institute*);

9 A Fast Algorithm for Electromagnetic Scattering from One-dimensional Dielectric Rough Surface
Jing-Jing Wang (*Anhui University*); *An-Qi Wang* (*Xidian University*); *Tiezhen Jiang* (*Anhui University*); *Zhi-Xiang Huang* (*Anhui University*);

10 SRCNN-based Enhanced Imaging for Low Frequency Radar
Yongpeng Dai (*National University of Defense Technology*); *Tian Jin* (*National University of Defense Technology*); *Yongping Song* (*National University of Defense Technology*); *Hao Du* (*National University of Defense Technology*); *Dizhi Zhao* (*National University of Defense Technology*);

11 An Improved Algorithm for Enhancing Fingerprint Image Quality
Lan Chen (*Shanghai Institute of Technology*); *Haiyang Yin* (*Shanghai Institute of Technology*); *Tao Wang* (*Shanghai Institute of Technology*); *He Xu* (*Tongji University*); *Mei Song Tong* (*Tongji University*);

12 A High-speed Data Acquisition and Preprocessing Method for Wirelessly Supervising Train Braking System
Guo Chun Wan (*Tongji University*); *Jian Zhou* (*Tongji University*); *Mei Song Tong* (*Tongji University*);

13 Propagation Dynamics of a Vector Beam with Radially-variant Polarization in a Strongly Nonlocal Nonlinear Medium
Xiaoyu Zhang (*Zhejiang Sci-Tech University*); *Caixia Liu* (*Zhejiang Sci-Tech University*); *Zhongxing Wang* (*Zhejiang Sci-Tech University*); *Huiwen Zhu* (*Zhejiang Sci-Tech University*); *Rui Pin Chen* (*Zhejiang Sci-Tech University*);

14 Characteristic Parameter Estimation of Chipless RFID Signals Based on USRP
Jia Xin Wan (*East China Normal University*); *Wen Jing Liu* (*Tongji University*); *Ling Yi Tang* (*Tongji University*); *Mei Song Tong* (*Tongji University*);

15 Electromagnetic Waves in Bi-isotropic Medium
Song-Tsuen Peng (*National Chiao Tung University*); *Heng-Tung Hsu* (*National Chiao Tung University*); *Ting-Jui Huang* (*National Chiao Tung University*); *Yi-Fan Tsao* (*National Chiao Tung University*); *Tso-Jung Chang* (*National Chiao Tung University*);

16 Giant Overreflection of Magnetohydrodynamic Waves in a Stratified Plasma with Inhomogeneous Shear Flows
Seulong Kim (*Ajou University*); *Kihong Kim* (*Ajou University*);

17 New Method for Rekindling the Nonlinear Solitary Waves in Maxwellian Dusty Plasmas in Spaces
Ganesh Chandra Das (*Panjabari Namghar Path*); *Ridip Sarma* (*University of Science and Technology*);

18 A Modified High Order FDTD (2, 4)-compatible Conformal Scheme for Electromagnetic Scattering of a Curved PEC Object
Pengcheng Ren (*East China Normal University*); *Lei Kuang* (*East China Normal University*); *Ruonan Chen* (*East China Normal University*); *Qing Huo Liu* (*Duke University*);

19 NDF and On-axis Resolution of an Axicon in Near Zone: Numerical Experiments
Maria Antonia Maisto (*Universita degli studi della Campania Luigi Vanvitelli*); *Raffaele Solimene* (*Universita degli studi della Campania Luigi Vanvitelli*); *Rocco Pierri* (*Universita degli studi della Campania Luigi Vanvitelli*);

20 On the Number of Independent Equations in Phase Retrieval Problem: Numerical Results in Circular Case
Maria Antonia Maisto (*Universita degli studi della Campania Luigi Vanvitelli*); *Raffaele Moretta* (*Università degli studi della Campania "Luigi Vanvitelli"*); *Raffaele Solimene* (*Universita degli studi della Campania Luigi Vanvitelli*); *Rocco Pierri* (*Universita degli studi della Campania Luigi Vanvitelli*);

21 Programmable Pulse Processor Using Cascaded Microrings on Silicon Photonic Circuits
Yuhe Zhao (*Huazhong University of Science and Technology*); *Jianji Dong* (*Huazhong University of Science and Technology*);

22 WT-based Data-length-variation Technique for Fast Heart Rate Detection
Rongjun Qian (*National University of Defense Technology*); *Tian Jin* (*National University of Defense Technology*); *Haoran Li* (*National University of Defense Technology*); *Yongpeng Dai* (*National University of Defense Technology*);

23 Transmission Line Analogy for Wave Propagation in Graphene-based Structures
Hirofumi Sanada (*Hokkaido University of Science*); *Hiroki Matsuzaki* (*Hokkaido University of Science*); *Naofumi Wada* (*Hokkaido University of Science*); *Megumi Takezawa* (*Hokkaido University of Science*);

24 Simulation of Laser Speckle from a Rough Object in Atmospheric Turbulence Based on Slip-step Method
Liguo Wang (*Xidian University*); *Ya Qing Li* (*Xidian University*); *Lei Gong* (*Xidian University*);

25 Emulating Tunneling with Elastic Vibrating Beams
F. Ramirez-Ramirez (*Universidad Autonoma Metropolitana-Azcapotzalco*); *Rafael A. Mendez-Sanchez* (*Universidad Nacional Autonoma de Mexico*); *G. Baez* (*Universidad Autonoma Metropolitana Azcapotzalco*); *A. Morales* (*Universidad Nacional Autonoma de Mexico*); *L. Gutierrez* (*Universidad Nacional Autonoma de Mexico*); *Jorge Flores* (*Universidad Nacional Autonoma de Mexico*);

26 Quantitative Evaluation of Car Body Effect for Car Mounted Antenna
Tetsuya Ogawa (*Tokyo University of Agriculture and Technology*); *Toru Uno* (*Tokyo University of Agriculture and Technology*); *Takuji Arima* (*Tokyo University of Agriculture and Technology*); *Yujiro Kushiyama* (*Tokyo University of Agriculture and Technology*); *Osamu Kagaya* (*Asahi Glass Co., Ltd*);

27 Three-dimensional Radiation of Coupled Smart Periodic Antennas Using Floquet Modal Analysis
Nader Benlatifa (*El Manar University*); *Bilel Hamdi* (*University of Tunis*); *Taoufik Aguili* (*University of Tunis El Manar (UTM)*);

28 Design of RFID Tag Antenna Based on the Cole-Cole Model of Human Abdomen
Yun Jing Zhang (*Tongji University*); *Dan Wang* (*Tongji University*); *Xiao Jia Huang* (*Tongji University*); *Mei Song Tong* (*Tongji University*);

29 A Space Scanning Reflective Array Antenna Realized by Plasma Metamaterial with the Phase Splicing Technique
Wenyu Li (*Nanjing University of Aeronautics and Astronautics*); *Hai Feng Zhang* (*Nanjing University of Aeronautics and Astronautics*); *Ting Liu* (*Nanjing University of Aeronautics and Astronautics*); *Yu Ma* (*Nanjing University of Posts and Telecommunications*);

30 Compact and Broadband 50-Ohms CPW-to-RWG Transition
Shih-Han Wang (*National Taiwan University of Science and Technology*); *Chun-Long Wang* (*National Taiwan University of Science and Technology*);

31 Characteristics of 340 GHz Slow Wave Structure for Staggered Double-vane Traveling Wave Tube
Yanbin He (*Beihang University*); *Cun-Jun Ruan* (*Beihang University*);

32 Design and Modeling of Tunable Band-stop Filter Using Evanescent Mode Resonators
Shang Yu Hung (*University of California*); *Yu Guo* (*Jiangnan University*);

33 An Example of Notch Filter Design Spec for the IM Noise Signal Cancellation in 800 MHz CDMA Frequency Band
Deock-Ho Ha (*Pukyong National University*); *Sung-Un Kim* (*Pukyong National University*); *Jee-Youl Ryu* (*Pukyong National University*); *Sung-Mook Kang* (*Pukyong National University*); *Yong-Jun Choi* (*Pukyong National University*); *Woo-Hyeon Ju* (*Pukyong National University*);

34 Design of In-building DAS System to Eliminate Shadow Areas
Ho-Jun Lee (*Korea Electronics Technology Institute*); *Ki-Hyeok Jeong* (*Korea Electronics Technology Institute*);

35 Chaos-secured Software-defined Visible Light Communications
Nguyen Tan Hung (*The University of Danang — University of Science and Technology*); *Nguyen Van Tho* (*Duy Tan University*); *Nguyen Quoc Hieu* (*The University of Danang — University of Science and Technology*); *Truong Cao Dung* (*Posts and Telecomunications Institute of Technology*); *Pham Tien Dat* (*National Institute of Information and Communications Technology*);

36 Modeling of SAR Intensity for Coastal Survey
Franck Garestier (*UMR 6143 CNRS M2C*); *Stephane Guillaso* (*GFZ*); *Thomas Chevalier* (*UMR 6143 CNRS M2C*); *Emilie Poullain* (*Areva*); *Laurent Froideval* (*UMR 6143 CNRS M2C*);

37 Using Polarimetry in D-INSAR for Ground Deformation Estimation over Permafrost Environment
Franck Garestier (*UMR 6143 CNRS M2C*); *Stephane Guillaso* (*GFZ*); *Elena Zakharova* (*Insitut of Water Problemes*); *Alexei Kouraev* (*UMR 5566 CNRS LEGOS*); *Roman Desyatkin* (*Melnikov Permafrost Institute, SB RAS*);

38 Propagation of Airy Beam with OAM in a Moderate-to-strong Maritime Environment
Yun Zhu (*Jiangnan University*); *Yixin Zhang* (*Jiangnan University*);

39 Influence of Tropospheric Ducts on Radio Propagation over Sea Surface
Mikhail Sergeyevich Mikhailov (*National Research University "Moscow Power Engineering Institute"*); *Valery A. Permyakov* (*Moscow Power Engineering Institute (Technical University)*); *M. V. Isakov* (*JSC SPP Salyut*);

40 Design and Development of a Magnetic Field Measuring System for High Field Applications
H. Dorantes (*Universidad Nacional Autonoma de Mexico*); *Fabian Vazquez* (*Universidad Nacional Autonoma de Mexico*); *S. E. Solis-Najera* (*Universidad Nacional Autonoma de Mexico*); *F. Moumtadi* (*Universidad Nacional Autonoma de Mexico*); *R. Martin* (*Universidad Nacional Autonoma de Mexico*);

41 Permafrost Taiga Analysis by Means of SAR Data Time Series
Stephane Guillaso (*GFZ*); *Franck Garestier* (*UMR 6143 CNRS M2C*);

42 Abnormal Propagation of Broadcast Wave and Atmospheric Duct
Ryoichi Higashi (*National Institute of Technology*); *Tetsuo Fukami* (*National Institute of Technology*);

43 Monitoring for Resonant Modes in Seismic Wave Spectra Threatening to Structures for Public and Citizens Activities
Shigehisa Nakamura (*Kyoto University*);

44 3D Electromagnetic Particle Simulations about the Low Frequency Component of Ben Observed by Geotail Spacecraft
Taketoshi Miyake (*Toyama Prefectural University*); *Masaki Okada* (*National Institute of Polar Research*); *Yoshiharu Omura* (*Research Institute for Sustainable Humanosphere*);

45 Mode Absorption Filters Based on Graphene-on-silicon Waveguides
Peng Xing (*Singapore University of Technology and Design*); *Kelvin J. A. Ooi* (*Singapore University of Technology and Design*); *Dawn T. H. Tan* (*Singapore University of Technology and Design*);

46 1T/2H MoS_2 Monolayer Analyzed by Hyperspectral Imaging
Yu-Ting Lee (*National Chung Cheng University*); *Zong-Bao Ye* (*National Chung Cheng University*); *Chie-Tong Kuo* (*National Sun Yat-Sen University*); *Ming-Yen Lu* (*National Tsing-Hua University*); *Chun-Ping Jen* (*National Chung Cheng University*); *Hsiang-Chen Wang* (*National Chung Cheng University*);

47 Optical Force for Particle Trapping in a Nanobeam Photonic Crystal Cavity
Lin Ren (*Aviation University of Air Force*); *Yunpeng Li* (*Aviation University of Air Force*); *Xin Li* (*Aviation University of Air Force*); *Ying Yu* (*Aviation University of Air Force*);

48 Quantum Cascade Laser-based Optical Monitoring of N_2O_5 in a Nocturnal Tropospheric Chemical Reaction Process
Hongming Yi (*Universite du Littoral Cote d'Opale*); *Tao Wu* (*Universite du Littoral Cote d'Opale*); *Amelie Lauraguais* (*Universite du Littoral Cote d'Opale*); *Vladimir Semenov* (*Moscow Institute of Physics and Technology*); *Cecile Coeur* (*Universite du Littoral Cote d'Opale*); *Andy Cassez* (*Universite du Littoral Cote d'Opale*); *Eric Fertein* (*University of the Littoral Opal Coast*); *Xiaoming Gao* (*Anhui Institute of Optics and Fine Mechanics, Chinese Academy of Sciences*); *Wei Dong Chen* (*Universite du Littoral Cote d'Opale*);

49 Structural and Optical Properties of GaN Micro-walls
Binbin Zhu (*Kuang-Chi Institute of Advanced Technology*); *Swee Tiam Tan* (*Nanyang Technological University*); *Shunpeng Lu* (*Nanyang Technological University*); *Yiping Zhang* (*Nanyang Technological University*); *Weigao Xu* (*Nanyang Technological University*); *Namig Hasanov* (*Nanyang Technological University*); *Qihua Xiong* (*Nanyang Technological University*); *Chunlin Ji* (*Kuang-Chi Institute of Advanced Technology*); *Hilmi Volkan Demir* (*Nanyang Technological University*);

50 Calculation of EMI Shielding Effectiveness of 2D MXenes Films
Zhenyu Li (*Soochow University*); *Xiaoxi Zhou* (*Soochow University*); *Weixin Lu* (*Soochow University*); *Bo Hou* (*Soochow University*);

51 Optical Binding on Self Organization of Gold Colloids
Jiunn-Woei Liaw (*Chang Gung University*); *Mao-Chang Huang* (*National Taiwan University*); *Cheng-Wei Huang* (*National Taiwan University*); *Mao-Kuen Kuo* (*National Taiwan University*);

52 All-dielectric Dual-band Reflective Polarization Conversion
Yong-Diao Wen (*Nanjing University of Aeronautics and Astronautics*); *Hai Feng Zhang* (*Nanjing University of Posts and Telecommunications*);

53 Waveform-selective Metasurfaces Responding to Low-power Signals
Mizuki Tanikawa (*Nagoya Institute of Technology*); *K. Asano* (*Nagoya Institute of Technology*); *D. Ushikoshi* (*Nagoya Institute of Technology*); *K. Sanji* (*SOKEN, INC.*); *M. Ikeda* (*SOKEN, INC.*); *Daisuke Anzai* (*Nagoya Institute of Technology*); *Hiroki Wakatsuchi* (*Nagoya Institute of Technology*);

54 The Leaky Property of Dyakonov Waves at an Interface between a Dielectric and a Metal-dielectric Multilayered Structure
Pi-Kuei Shih (*National Taiwan University*); *Hung-Chun Chang* (*National Taiwan University*);

55 Analysis of Interferogram Phase Noise by Bi-static Data Sets of TerraSAR-X
Takashi Nonaka (*Nihon University*); *Tomohito Asaka* (*Nihon University*); *Keishi Iwashita* (*Nihon University*);

56 Modified Helical Coils Structure for Uniform Magnetic Flux Density
Sang-Won Kim (*Electronics and Telecommunications Research Institute (ETRI)*); *Jung-Ick Moon* (*Electronics and Telecommunications Research Institute*); *Seong-Min Kim* (*Electronics and Telecommunications Research Institute*); *In-Kui Cho* (*Electronics and Telecommunications Research Institute*);

57 Analytical Study on Complex Relative Permittivity of High Loss Materials by TM_{020} Mode Cavity Resonator
Shuya Miyakoshi (*National Institute of Technology, Kisarazu College*); *Naoki Keicho* (*National Institute of Technology, Kisarazu College*); *Takanobu Ohno* (*Kisarazu National College of Technology*); *Kosei Tanii* (*National Institute of Technology, Kisarazu College*); *Masahiro Uehara* (*National Institute of Technology, Kisarazu College*);

58 Analytical Study on Selective Heating of Food in Microwave Oven by Using Diplexer
Yukiya Sagawa (*National Institute of Technology, Kisarazu College*); *Keisuke Ejiri* (*National Institute of Technology, Kisarazu College*); *Takanobu Ohno* (*Kisarazu National College of Technology*); *Kosei Tanii* (*National Institute of Technology, Kisarazu College*); *Masahiro Uehara* (*National Institute of Technology, Kisarazu College*);

59 Analytical Study on Extracting Complex Permittivity Using Rectangular Cavity Resonator with Four Ports
Naoki Keicho (*National Institute of Technology, Kisarazu College*); *Shuya Miyakoshi* (*National Institute of Technology, Kisarazu College*); *Takanobu Ohno* (*Kisarazu National College of Technology*); *Kosei Tanii* (*National Institute of Technology, Kisarazu College*); *Masahiro Uehara* (*National Institute of Technology, Kisarazu College*);

60 A Study of Microstrip Dual-band Bandpass Filter Using Open-ring Resonators
Yutaro Ikeda (*National Institute of Technology, Kisarazu College*); *Kosei Tanii* (*National Institute of Technology, Kisarazu College*); *Takanobu Ohno* (*Kisarazu National College of Technology*); *Masahiro Uehara* (*National Institute of Technology, Kisarazu College*);

61 A Study of Compact Bandpass Filter Composed of a Spiral Coupled Line
Tomoya Suzuki (*National Institute of Technology, Kisarazu College*); *Kosei Tanii* (*National Institute of Technology, Kisarazu College*); *Takanobu Ohno* (*Kisarazu National College of Technology*); *Masahiro Uehara* (*National Institute of Technology, Kisarazu College*);

62 Design of Mixed C- and F-shaped Monopole Antenna for Multi-band Systems Application
Cheng-Hsing Hsu (*National United University*); *Shang-Hung Tsai* (*National United University*); *Ja-Hao Chen* (*Feng-Chia University*); *Cheng-Chi Yu* (*Feng-Chia University*); *Ching-Fang Tseng* (*National United University*);

63 A Low-profile Antenna Design for LTE/WWAN Smartphone Application
Cheng-Chi Yu (*Feng-Chia University*); *Chien-Yu Huang* (*Feng-Chia University*); *Jiin-Hwa Yang* (*Feng-Chia University*); *Cheng-Hsing Hsu* (*National United University*); *Ja-Hao Chen* (*Feng-Chia University*);

64 Extremely Compact High Gain 2.4 GHz Antenna with Folded Finger Meander Line Structure
Ja-Hao Chen (*Feng-Chia University*); *Yu-Ju Lin* (*Tunghai University*); *Cheng-Chi Yu* (*Feng-Chia University*); *He-Jin Lin* (*Feng Chia University*); *Cheng-Hsing Hsu* (*National United University*); *Ching-Fang Tseng* (*National United University*);

Session 2P1
Innovative Microwave Remote Sensing

Thursday PM, August 2, 2018

Room T1

Organized by Josaphat Tetuko Sri Sumantyo, Ming Yam Chua

Chaired by Josaphat Tetuko Sri Sumantyo, Ming Yam Chua

13:00 Multiband Circularly Polarized Synthetic Aperture Radar (CP-SAR) Onboard Microsatellite Constellation
Josaphat Tetuko Sri Sumantyo (*Chiba University*); *Nobuyoshi Imura* (*Chiba University*); *Katia Nagamine Urata* (*Chiba University*); *Robertus Heru Triharjanto* (*Indonesian National Institute of Aeronautics and Space*); *Steven Gao* (*University of Kent*);

13:20 Comparison Design of X-band Microstrip Antenna for SAR Application
Farohaji Kurniawan (*Chiba University*); *Josaphat Tetuko Sri Sumantyo* (*Chiba University*); *Peberlin Parulian Sitompul* (*Chiba University*); *Gunawan Setyo Prabowo* (*National Institute of Aeronautics and Space*); *Agus Aribowo* (*National Institute of Aeronautics and Space*); *Atik Bintoro* (*National Institute of Aeronautics and Space*);

13:40 Gain Enhancement of C Band Linearly-polarized Microstrip Antenna with Square Parasitic Patch for Airborne LP-SAR Sensor
Cahya Edi Santosa (*Chiba University*); *Josaphat Tetuko Sri Sumantyo* (*Chiba University*);

14:00 Dual-band Circularly-polarized Microstrip Antenna for Nano Satellite
Peberlin Parulian Sitompul (*Chiba University*); *Josaphat Tetuko Sri Sumantyo* (*Chiba University*); *Farohaji Kurniawan* (*Chiba University*); *Cahya Edi Santosa* (*Chiba University*); *Timbul Manik* (*National Institute of Aeronautics and Space*); *Asif Awaludin* (*Chiba University*); *Ming Yam Chua* (*Multimedia University*);

14:20 3D Printed Wideband Circularly Polarized Pyramidal Horn Antenna
Agus Hendra Wahyudi (*Chiba University*); *Josaphat Tetuko Sri Sumantyo* (*Chiba University*); *Ari Sugeng Budiyanta* (*National Institute of Aeronautics and Space-LAPAN*); *Achmad Munir* (*Institut Teknologi Bandung*);

14:40 Unidirectional Radiation and Gain Enhancement of Circularly Polarized Printed Slot Antenna by Several Shapes of Reflector
Asif Awaludin (*Chiba University*); *Cahya Edi Santosa* (*Chiba University*); *Josaphat Tetuko Sri Sumantyo* (*Chiba University*);

15:00 An 8-channels FPGA-based Reconfigurable Chirp Generator for Multi-band Full Polarimetric Airborne/Spaceborne CP-SAR
Ming Yam Chua (*Multimedia University*); *Josaphat Tetuko Sri Sumantyo* (*Chiba University*); *Ya Qi Ji* (*Chiba University*);

15:20 An PC-based Airborne SAR Baseband System
Ming Yam Chua (*Multimedia University*); *Josaphat Tetuko Sri Sumantyo* (*Chiba University*); *Cahya Edi Santosa* (*Chiba University*); *Good Fried Panggabean* (*Chiba University*); *Ya Qi Ji* (*Chiba University*); *Sitompul Peberlin Parulian* (*Chiba University*); *Mohammad Nasucha* (*Chiba University*);

15:40 **Coffee Break**

16:00 Verification of Airborne CP-SAR Calibration Method Using Cylinder Corner Reflector
Tomoro Watanabe (*Chiba University*); *Josaphat Tetuko Sri Sumantyo* (*Chiba University*); *Ming Yam Chua* (*Multimedia University*); *Cahya Edi Santosa* (*Chiba University*); *Good Fried Panggabean* (*Chiba University*);

16:20 Numerical Solution for Received Power Estimation in a Wave Propagation — A Case of Ground Based C-band SAR Test
Mohammad Nasucha (*Chiba University*); *Josaphat Tetuko Sri Sumantyo* (*Chiba University*); *Ming Yam Chua* (*Multimedia University*); *Cahya Edi Santosa* (*Chiba University*); *Yuta Izumi* (*Tohoku University*); *Pakhrur Razi* (*Chiba University*);

16:40 Indoor Experiment of SAR Interferometry with 79 GHz MIMO Sensor
Man Chung Chim (*Purdue University*); *Josaphat Tetuko Sri Sumantyo* (*Chiba University*); *Daniele Perissin* (*Purdue University*);

17:00 Single Post-event PolSAR Data Based Earthquake/Tsunami Damage Information Extraction in Urban Areas
Ya Qi Ji (*Chiba University*); *Josaphat Tetuko Sri Sumantyo* (*Chiba University*); *Ming Yam Chua* (*Multimedia University*); *Mirza Muhammad Waqar* (*Institute of Space Technology*);

17:20 Interferometry Synthetic Aperture Radar (InSAR) Application for Flood Area Detection Observed by Sentinel 1A
Pakhrur Razi (*Chiba University*); *Josaphat Tetuko Sri Sumantyo* (*Chiba University*); *Fajar Febriany* (*Universitas Negeri Padang*); *Mohammad Nasucha* (*Chiba University*); *Jamrud Aminuddin* (*Chiba University*);

17:40 Multi-temporal Land Deformation Monitoring in V Shape Area Using Quasi-Persistent Scatterer (Q-PS) Interferometry Technique
Pakhrur Razi (*Chiba University*); *Josaphat Tetuko Sri Sumantyo* (*Chiba University*); *Daniele Perissin* (*Purdue University*); *Fajar Febriany* (*Universitas Negeri Padang*); *Yuta Izumi* (*Chiba University*);

18:00 Detection of Dry-flammable Peatland Area by Using Backscattering Coefficient Information of ALOS-2 Data L-band Frequency
Joko Widodo (*Chiba University*); *Yuta Izumi* (*Chiba University*); *Ayaka Takahashi* (*Chiba University*); *Husnul Kausarian* (*Universitas Islam Riau*); *Hiroaki Kuze* (*Chiba University*); *Josaphat Tetuko Sri Sumantyo* (*Chiba University*);

Session 2P2
Light Scattering and Radiative Transfer: Basic Research and Applications 1

Thursday PM, August 2, 2018
Room T2
Organized by Ping Yang, Michael I. Mishchenko
Chaired by Lei Bi, Bingqi Yi

13:00 Invited Far-IR Remote Sensing of Our Planet: Challenges and Opportunities
Xianglei Huang (*The University of Michigan*);

13:20 Invited Radiative Transfer Model for Hyperspectral Remote Sensing
Xu Liu (*NASA Langley Research Center*);

13:40 Shapes and Light Scattering Properties of Snow Particles Estimated from X-ray Micro-CT Imagery and Geometrical Optics Method Calculations
Hiroshi Ishimoto (*Meteorological Research Institute*); *Tomonori Tanikawa* (*Meteorological Research Institute*); *Satoru Adachi* (*National Research Institute for Earth Science and Disaster Prevention*); *Kazuhiko Masuda* (*Meteorological Research Institute*);

14:00 Examining the Contrast in the Ice Cloud Fractions between Eastern and Western Eurasia in Winter with CALIPSO Data
Kazuaki Kawamoto (*Nagasaki University*); *Akira Yamauchi* (*Nagasaki University*);

14:20 Measurements of Cloud Radiative Forcing and Its Connection to Climate Sensitivity
Andrew E. Dessler (*Texas A&M University*);

14:40 Sensitivities of GCM Simulations to Ice Cloud Optical Property Parameterizations
Bingqi Yi (*Sun Yat-sen University*);

15:00 Investigation of Ice Cloud Properties from Himawari-8 Satellite Measurements
Husi Letu (*Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences (CAS)*); *Hiroshi Ishimoto* (*Meteorological Research Institute*); *Takashi M. Nagao* (*Earth Observation Research Center (EORC)*); *Takashi Y. Nakajima* (*Tokai University*); *Jerome Riedi* (*Universite de Lille 1*);

15:20 A Fast Vector Radiative Transfer Model for Atmospheric Remote Sensing
Jiachen Ding (*Texas A&M University*); *Ping Yang* (*Texas A&M University*); *Michael D. King* (*University of Colorado*);

15:40 **Coffee Break**

16:00 Solution of Polarized Radiative Transfer in Gradient Index Media Using Spectral Element Method
Junmin Zhao (*Harbin Institute of Technology*); *J. Y. Tan* (*Harbin Institute of Technology*); *Linhua Liu* (*Harbin Institute of Technology*);

16:20 Light Scattering by Small Atmospheric Ice Crystals: Impacts of Orientation, Shape, and Size on In-situ Aircraft Measurements
Junshik Um (*Pusan National University*); *Greg M. McFarquhar* (*University of Oklahoma*);

16:40 Scattering Property Database of Oriented Hexagonal Plates and Its Application to Lidar Measurements
Masanori Saito (*Texas A&M University*); *Ping Yang* (*Texas A&M University*); *Bingqiang Sun* (*Texas A&M University*);

17:00 Backscattering Peak of Large Single Particle: Phenomenon and Theory
Chen Zhou (*Nanjing University*);

17:20 Derivation and Analysis of the Volume Integral Equation Formulation of Electromagnetic Scattering
Maxim A. Yurkin (*Institute of Chemical Kinetics and Combustion*); *Michael I. Mishchenko* (*NASA Goddard Institute for Space Studies*);

17:40 Use of Simplified Models to Simulate the Optical Properties of Atmospheric Dust Aerosols: A New Perspective
Lei Bi (*Zhejiang University*); *Wushao Lin* (*Zhejiang University*); *Xiaoyu Zhang* (*Zhejiang University*);

18:00 Application of Himawari-8 AHI Imagery to High-temporal Aerosol Optical Depth Retrieval
Tang-Huang Lin (*National Central University*); *Yuan-Hsiang Chang* (*National Central University*); *Gin-Rong Liu* (*National Central University*);

18:20 Kerker Effects and Beyond
Jeng Yi Lee (*National Taitung University*); *Andrey E. Miroshnichenko* (*Australian National University*); *Ray-Kuang Lee* (*National Tsing-Hua University*);

Session 2P3a
FocusSession.SC1&SC2: Multiscale and Multiphysics Computation and Applications 2

Thursday PM, August 2, 2018

Room T3

Organized by Qing Huo Liu

Chaired by Qing Huo Liu, Mei Song Tong

13:20 Invited Modeling Photonic Crystal Slab Devices by Multi-resolution Unit Cell Boundary Operators
Ya Yan Lu (*City University of Hong Kong*);

13:40 Invited Multiscale Computation with the Discontinuous Galerkin Time Domain Method and Geometrical Optics
Sawyer D. Campbell (*The Pennsylvania State University*); *Huaguang Bao* (*The Pennsylvania State University*); *Jogender Nagar* (*The Pennsylvania State University*); *Pingjuan L. Werner* (*The Pennsylvania State University*); *Douglas H. Werner* (*The Pennsylvania State University*);

14:00 Invited An Upscaled DGTD Method for Time-domain Electromagnetics
Alexis Gobe (*Cote d'Azur University*); *Stephane Lanteri* (*Cote d'Azur University, Inria, CNRS, LJAD*); *Claire Scheid* (*Cote d'Azur University, LJAD, CNRS, Inria*); *Frederic Valentin* (*National Laboratory for Scientific Computing*);

14:20 Invited Numerical Analysis of Electromagnetic Wave-matter Interaction
Shinichiro Ohnuki (*Nihon University*); *Ryohei Uemura* (*Nihon University*); *Ryota Oida* (*Nihon University*); *Kazuyuki Tanaka* (*Nihon University*);

14:40 Keynote Green's Functions in Waveguides and Periodic Structures
Leung Tsang (*University of Michigan*); *Shurun Tan* (*University of Michigan*); *Tien-Hao Liao* (*California Institute of Technology*); *Kung-Hau Ding* (*Air Force Research Laboratory, Wright-Patterson AFB*);

15:10 More-refined Typhoon Geometry Center Derived from a High Temporal-spatial Resolution Geostationary Satellite Imaging System
Fenglin Sun (*National Satellite Meteorological Center, China Meteorological Administration (NSMC/CMA)*);

15:40 **Coffee Break**

Session 2P3b
SC1: Fast and Efficient Algorithms of CEM

Thursday PM, August 2, 2018

Room T3

Organized by Vladimir Okhmatovski, Weng Cho Chew

Chaired by Vladimir Okhmatovski, Weng Cho Chew

16:00 Parallel Brute-force Evaluation of Dipole Radiation Operators on GPUs
Alexander Paulus (*Technical University of Munich*); *Josef Knapp* (*Technical University of Munich*); *Thomas F. Eibert* (*Technical University of Munich*);

16:20 An Implementation of the Calderon Preconditioning for the EFIE without the Barycentric Elements
Kazuki Niino (*Kyoto University*); *N. Nishimura* (*Kyoto University*);

16:40 Double-layer Modeling to Overcome Internal Resonance Problem of MFIE
Sadri Guler (*Middle East Technical University*); *Hande Ibili* (*Middle East Technical University*); *Ozgur Ergul* (*Middle East Technical University*);

17:00 Accuracy Controlled $\mathcal{H}^2$-matrix-matrix Product in Linear Complexity
Miaomiao Ma (*Purdue University*); *Dan Jiao* (*Purdue University*);

17:20 $\mathcal{H}$-matrix Accelerated Method of Moments Solution of Surface-volume-surface EFIE for Scattering Problems on Composite Dielectric Objects
R. Gholami (*University of Manitoba*); *Z. Chen* (*University of Manitoba*); *Vladimir Okhmatovski* (*University of Manitoba*);

17:40 Time-frequnecy Analysis of Electromagnetic Wave Using a Pefectly Parallel Algorithm
Di Wu (*Nihon University*); *R. Ohnishi* (*Nihon University*); *Takashi Yamaguchi* (*Tokyo Metropolitan Industrial Technology Research Institute*); *Shinichiro Ohnuki* (*Nihon University*);

18:00 Efficent Algorithms for Parallelization of (Non)-oscillatory Pair potentials
Steve Hughey (*Michigan State University*); *H. M. Aktulga* (*Michigan State University*); *B. Shanker* (*Michigan State University*);

18:20 Efficient Integration Paths for Fast 2.5-D Scattering
Mert Hidayetoglu (*University of Illinois at Urbana-Champaign*); *Wen-Mei Hwu* (*University of Illinois at Urbana-Champaign*); *Weng Cho Chew* (*University of Illinois*);

Session 2P4
SC1&SC3: Design and Simulation of Electromagnetic and Optical Devices 2

Thursday PM, August 2, 2018

Room T4

Organized by Shinichiro Ohnuki, Jun Shibayama

Chaired by Shinichiro Ohnuki, Jun Shibayama

13:20 Digital Signal Processing in Nonlinear Photonic Crystal Waveguides Based on Bandgap Transmission
Tornike Onoprishvili (*Free University of Tbilisi*); *Vakhtang Jandieri* (*University of Duisburg-Essen*); *Ramaz Khomeriki* (*Tbilisi State University*); *Daniel Erni* (*University of Duisburg-Essen, Campus Duisburg*);

13:40 Study of Three-layer Gratings at First Order Bragg Condition
Nai-Hsiang Sun (*I-Shou University*); *Ya-Zhou Li* (*I-Shou University*); *Sheng-Hua Jin* (*I-Shou University*); *Yi-Ming Wang* (*I-Shou University*); *Jung-Sheng Chiang* (*I-Shou University*);

14:00 Modeling of Carrier Transport of Host-guest System in Organic Light-emitting Diodes by 2D Random Model
Jun-Yu Huang (*National Taiwan University*); *Jiun-Haw Lee* (*National Taiwan University*); *Yuh-Renn Wu* (*National Taiwan University*);

14:20 Study on Polarization Converter Based on Double-hole Unit Photonic Crystal Fiber
Zejun Zhang (*Kanagawa University*); *Yasuhide Tsuji* (*Muroran Institute of Technology*); *Masashi Eguchi* (*Chitose Institute of Science and Technology*); *Chun-Ping Chen* (*Kanagawa University*);

14:40 Analytical and Numerical Investigation of Silicon Photonic 2D Grating Couplers with a Waveguide-to-Grating Shear Angle
Galina Georgieva (*Technische Universität Berlin*); *Klaus Petermann* (*Technische Universität Berlin*);

15:00 Design Optimization of Nonlinear Optical Waveguide Devices Considering Output Signal Phase
K. Mori (*Muroran Institute of Technology*); *Yasuhide Tsuji* (*Muroran Institute of Technology*);

15:40 **Coffee Break**

16:00 Analysis of a Periodic Array Consisting of InSb-coated Cylinders in the THz Region
Jun Shibayama (*Hosei University*); *Sumire Takahashi* (*Hosei University*); *Junji Yamauchi* (*Hosei University*); *H. Nakano* (*Hosei University*);

16:20 Dispersion Relationship of Four-section Gratings
Nai-Hsiang Sun (*I-Shou University*); *Sheng-Hua Jin* (*I-Shou University*); *Ya-Zhou Li* (*I-Shou University*); *Shi-Yao Chen* (*I-Shou University*); *Hai-Yan Zhang* (*Huaiyin Institute of Technology*); *Jung-Sheng Chiang* (*I-Shou University*);

16:40 Experimental and Numerical Study of Electromagnetic Parameters of V-band Planar Meander Slow-wave Structure
Andrei Victorovich Starodubov (*Saratov State University*); *Alexey Alexandrovich Serdobintsev* (*Saratov State University*); *Anton Mikhailovich Pavlov* (*Saratov State University*); *Victor Vladimirovich Galushka* (*Saratov State University*); *Peter Vladimirovich Ryabukho* (*Saratov State University*); *Andrei Georgievich Rozhnev* (*Saratov State University*); *Roman Antonovich Torgashov* (*V. A. Kotel'nikov Institute of Radio Engineering and Electronics RAS*); *Gennadiy Vasilievich Torgashov* (*V. A. Kotel'nikov Institute of Radio Engineering and Electronics RAS*); *Nikita Mikhailovich Ryskin* (*V. A. Kotel'nikov Institute of Radio Engineering and Electronics RAS*);

17:00 Fast Simulations of Beam Propagations via Adaptive Eikonal Splitting
Qin Sheng (*Baylor University*); *H. Sun* (*University of Macau*);

Session 2P5a
SC4: Leading Design Techniques for Wideband, Miniaturized, and Circularly Polarized Antennas

Thursday PM, August 2, 2018

Room T5

Organized by Takeshi Fukusako

Chaired by Takeshi Fukusako

13:00 Experimental Study on Performance Improvement of a DBM Integrated Circularly Polarized Microstrip Antenna Using Stacked Structure
Eisuke Nishiyama (*Saga University*); *T. Ino* (*Saga University*); *I. Toyoda* (*Saga University*);

13:20 Miniaturization of Folded Bow-tie Antenna
Jun Abiru (*National Defense Academy*); *Naobumi Michishita* (*National Defense Academy of Japan*); *Hisashi Morishita* (*National Defense Academy*); *Kenji Kawabata* (*Fujitsu Limited*); *Yasuhiro Murakami* (*Fujitsu Limited*);

13:40 Optimum Design to Achieve Small Arbitrarily Configured Wire Antenna Array Using GA for EV Model Running by WPT
Tamami Maruyama (*National Institute of Technology*); *S. Ishisa* (*National Institute of Technology*); *K. Kawamori* (*National Institute of Technology*); *K. Ozeki* (*National Institute of Technology*); *T. Ohsawa* (*National Institute of Technology*);

14:00 Circularly-polarized Small Microstrip Antenna for ISM Band
Takafumi Fujimoto (*Nagasaki University*); *Ryo Yamaguchi* (*Nagasaki University*); *Yoichi Ishizuka* (*Nagasaki University*); *Tomoyuki Fujishima* (*Nagasaki University*); *Satoshi Sugimoto* (*Nagasaki University*);

14:20 Design and Measured Performance of a Varactor-loaded Frequency-tunable Dual-band Ring Microstrip Antenna with Reduced Bias Circuits
Toru Ikeda (*Saitama University*); *Sakuyoshi Saito* (*Saitama University*); *Yuichi Kimura* (*Saitama University*);

14:40 A Wide-band Microstrip Array Antenna Fed by a Metamaterial Power-splitter
Changhyeong Lee (*Incheon National University*); *Heejun Park* (*Incheon National University*); *Gwang-Gyoon Namgung* (*Incheon National University*); *Sungtek Kahng* (*University of Incheon*);

15:00 Overview on Metasurface Based Wideband Circularly Polarized Antennas
Takeshi Fukusako (*Kumamoto University*);

15:20 A Low Profile Integrated DSRC/GPS Antenna System for V2X Applications
Ling Huang (*Nanyang Technological University*); *Yi-Long Lu* (*Nanyang Technological University*);

15:40 **Coffee Break**

Session 2P5b
SC1: Recent Progress in Antenna Analysis and Design

Thursday PM, August 2, 2018

Room T5

Organized by Keisuke Fujita

Chaired by Keisuke Fujita

16:00 Invited Dual-band Antenna Configuration Comprising Two Unsymmetrical Rectangular Loops with Gaps for GNSS Applications
Makoto Sumi (*NTT DOCOMO, INC.*); *Jun-Ichi Takada* (*Tokyo Institute of Technology*);

16:20 A Millimeter-wave Aperture Coupled High-gain Antenna Array
Shailendra Kaushal (*Fujikura Ltd.*); *Ryuta Yamamoto* (*Fujikura Ltd.*); *Kiyoshi Kobayashi* (*Fujikura Ltd.*); *Ning Guan* (*Fujikura Ltd.*);

16:40 Small Four-branch Diversity Antenna with Two-element Array (Invited)
Kengo Nishimoto (*Mitsubishi Electric Corporation*); *Y. Nishioka* (*Mitsubishi Electric Corporation*); *Naofumi Yoneda* (*Mitsubishi Electric Corporation*);

17:00 High-order Spherical Modes Analysis for Small Spherical Helix Antennas
Keisuke Fujita (*National Institute of Technology, Yuge College*);

Session 2P5c
SC4: Evaluation Techniques of Substrate Materials for MM-wave Planar Antennas

Thursday PM, August 2, 2018

Room T5

Organized by Yoshinori Kogami

Chaired by Yoshinori Kogami

17:20 A Millimetre Wave Embroidary Beam Forming Antenna Array for UWB Applications
Daggupati Anil Kumar (*Indian Institute of Technology*); *Mohammed Zafar Ali Khan* (*Indian Institute of Technology*);

17:40 Millimeter Wave Complex Permittivity Measurements for the Flexible Dielectric Substrates Used with the Printed Electronics Technology
Yoshinori Kogami (*Utsunomiya University*); *Takashi Shimizu* (*Utsunomiya University*); *Yu Mogami* (*Utsunomiya University*);

18:00 Evaluation of the Relative Permittivity of Dielectric Sheet Materials in Millimeter Wave Region Using Te_{111} Mode Cylindrical Cavity Resonator
Yoshinori Kogami (*Utsunomiya University*); *Takashi Shimizu* (*Utsunomiya University*);

18:20 Complex Permittivity Evaluation for Uniaxial Anisotropic Dielectric Materials in Millimeter Wave Region Using the Whispering Gallery Mode Dielectric Disk Resonator
Kota Tsunoda (*Utsunomiya University*); *Kentaro Takano* (*Utsunomiya University*); *Takashi Shimizu* (*Utsunomiya University*); *Yoshinori Kogami* (*Utsunomiya University*);

Session 2P6
Biomedical Imaging and Sensing Involving both Light and Ultrasound 2

Thursday PM, August 2, 2018

Room T6

Organized by Xueding Wang, Chulhong Kim

Chaired by Chulhong Kim, Sung-Liang Chen

13:20 Photoacoustic Microscopy to Improve Spatial Resolution and Imaging Contrast Near Optical Diffusion Limit (Invited)
Yoshihisa Yamaoka (*Saga University*);

13:40 Ultrafast MIP Viewer with Unique Image Processing Designed for Photoacoustic Tomography (Invited)
Hiroyuki Sekiguchi (*Kyoto University*); *Kaori Togashi* (*Kyoto University*);

14:00 Three-dimensional Tumor Imaging In Vivo Using Multispectral Optoacoustic Mesoscopy (Invited)
Jiao Li (*Tianjin University*); *Shaoze Song* (*Tianjin University*); *Lu Tong* (*Tianjin University*); *Feng Gao* (*Tianjin University*); *Vasilis Ntziachristos* (*Technische Universitat Munchen*);

14:20 High Frame Rate Photoacoustic Imaging of Micro Vessel (Invited)
Yoshifumi Saijo (*Tohoku University*); *Kodai Ishikawa* (*Tohoku University*); *Ryo Shintate* (*Tohoku University*); *Ryo Nagaoka* (*University of Toyama*);

14:40 High-resolution Photoacoustic Microscopy of Single Cells and Single Vessels (Invited)
Chao Tian (*University of Science and Technology of China*); *Wei Qian* (*IMRA America, Inc.*); *Xueding Wang* (*University of Michigan*); *Yannis M. Paulus* (*University of Michigan*);

15:00 Photoacoustic Sensing and Mapping of Neuroelectrical Activity (Invited)
Parag V. Chitnis (*George Mason University*);

15:20 Label-free Counting of Circulating Cells by *in vivo* Photoacoustic Flow Cytometry (Invited)
Quanyu Zhou (*Shanghai Jiao Tong University*); *Xunbin Wei* (*Shanghai Jiao Tong University*);

15:40 **Coffee Break**

16:00 Three-dimensional Modelling of Photon Transportation Aided by Ultrasound for Quantitative Clinical Photoacoustic Breast Cancer Studies
Tao Han (*Peking University*); *Meng Yang* (*Peking Union Medical College Hospital, Chinese Academy of Medical Sciences & Peking Union Medical College*); *Fang Yang* (*Shenzhen Mindray Bio-Medical Electronics Co., Ltd.*); *Lingyi Zhao* (*Peking University*); *Yuxin Jiang* (*Peking Union Medical College Hospital, Chinese Academy of Medical Sciences & Peking Union Medical College*); *Changhui Li* (*Peking University*);

16:20 Invited Photoacoustic/Ultrasound Dual Imaging of Human Superficial Lesions: An Initial Clinical Study
Meng Yang (*Peking Union Medical College Hospital, Chinese Academy of Medical Sciences & Peking Union Medical College*); *Yuxin Jiang* (*Peking Union Medical College Hospital, Chinese Academy of Medical Sciences & Peking Union Medical College*); *Lingyi Zhao* (*Peking University*); *Changhui Li* (*Peking University*); *Fang Yang* (*Shenzhen Mindray Bio-Medical Electronics Co., Ltd.*); *Na Su* (*Peking Union Medical College Hospital, Chinese Academy of Medical Sciences & Peking Union Medical College*); *Ming Wang* (*Peking Union Medical College Hospital, Chinese Academy of Medical Sciences & Peking Union Medical College*); *Hewen Tang* (*Peking Union Medical College Hospital, Chinese Academy of Medical Sciences & Peking Union Medical College*); *Chengyang Zhao* (*Peking Union Medical College Hospital, Chinese Academy of Medical Sciences & Peking Union Medical College*);

16:40 Invited Biomedical Applications for Photoacoustic Microscopy and Endoscopy
Zhongjiang Chen (*South China Normal University*); *Haigang Ma* (*South China Normal University*); *Kedi Xiong* (*South China Normal University*); *Yujiao Shi* (*South China Normal University*); *Sihua Yang* (*South China Normal University*);

17:00 Invited Photoacoustic Spectral Characteristics and Its Application in Tissue Characterization and Noncontact Elasticity Evaluation
Chao Tao (*Nanjing University*); *Xiao-Jun Liu* (*Nanjing University*); *Xueding Wang* (*University of Michigan*);

17:20 Invited Photoacoustic Imaging Guided Photothermal Therapy Based on the Combination of Silicon Coated Gold Nanoparticles and Stem Cells
Yingna Chen (*Tongji University*); *Chang Xu* (*Tongji University School of Medicine*); *Xueding Wang* (*University of Michigan*); *Yu Cheng* (*Tongji University School of Medicine*); *Qian Cheng* (*Tongji University*);

17:40 Invited Imaging of Ultrafast Biological Dynamics with Volumetric Multi-spectral Optoacoustic Tomography
X. Luis Dean-Ben (*Technical University of Munich and Helmhotz Center Munich*); *Daniel Razansky* (*Technical University of Munich and Helmholtz Center Munich*);

Session 2P7a
SC1: Recent Approaches to Periodic Structures 3

Thursday PM, August 2, 2018

Room T7

Organized by Koki Watanabe, Gerard Granet

Chaired by Koki Watanabe, Gerard Granet

13:20 Exceptional Points on a Periodic Dielectric Slab
Amgad Abdrabou (*City University of Hong Kong*); *Ya Yan Lu* (*City University of Hong Kong*);

13:40 Shadow Theory of Diffraction by a Periodic Rough Surface: Image Integral Equation
Junichi Nakayama (*Kyoto Institute of Technology*); *Yasuhiko Tamura* (*Kyoto Institute of Technology*);

14:00 Method of Image Green's Function for Periodic Rough Dielectric Surfaces
Yasuhiko Tamura (*Kyoto Institute of Technology*);

14:20 Analyzing Honeycomb Photonic Crystal Waveguides by Dirichlet-to-Neumann Maps
Zhen Hu (*Hohai University*);

14:40 A New Boundary Integral Equation Method for Wave Scattering in Layered Media with Periodic Interface
Wangtao Lu (*Zhejiang University*); *Guanghui Hu* (*Beijing Computational Science Research Center*); *Ya Yan Lu* (*City University of Hong Kong*);

15:00 Inverse Scattering Algorithm for Reconstruction of the Defect Profile in Infinite Periodic Surface Relief Structure
Jun-ichiro Sugisaka (*Kitami Institute of Technology*); *Takashi Yasui* (*Kitami Institute of Technology*); *Koichi Hirayama* (*Kitami Institute of Technology*);

15:40 **Coffee Break**

Session 2P7b
SC1: Wave Scattering from Random Surfaces and Periodic Structures

Thursday PM, August 2, 2018

Room T7

Organized by Junichi Nakayama, Akira Komiyama

Chaired by Junichi Nakayama, Akira Komiyama

16:00 Fields in One-dimensional Random Media: Degeneracy Problem
Junichi Nakayama (*Kyoto Institute of Technology*);

16:20 Incoherent Scattering of a TE Plane Wave from a Slab with a Two-dimensional Random Fluctuation
Yasuhiko Tamura (*Kyoto Institute of Technology*);

16:40 Scattering of Light from a Surface of Frozen Salmon Fillets — Influence of Ice Crystal Size on the Surface Color
Kazuhiro Hattori (*Kyoto Institute of Technology*); *Yasuhiko Tamura* (*Kyoto Institute of Technology*);

17:00 Shadow Theory of Diffraction by a Periodic Rough Surface: Decomposition Formulas
Junichi Nakayama (*Kyoto Institute of Technology*); *Yasuhiko Tamura* (*Kyoto Institute of Technology*);

17:20 Properties of the Scattering Factors for a Periodic Rough Interface
Yasuhiko Tamura (*Kyoto Institute of Technology*); *Junichi Nakayama* (*Kyoto Institute of Technology*);

17:40 Accuracy Evaluation on Numerical Analysis of Scattering Fields by Dielectric Gratings in Terms of Reciprocity Theorem
Hideaki Wakabayashi (*Okayama Prefectural University*); *M. Asai* (*Kindai University*); *Jiro Yamakita* (*Okayama Prefectural University*);

18:00 Scattering of a Plane Wave from a Dielectric Grating with Finite Extent
Akira Komiyama (*Osaka Electro-Communication University*);

Session 2P8a
SC2: Homogenization and Effective Medium Theories for Artificial Materials

Thursday PM, August 2, 2018

Room T8

Organized by Ying Wu, Jun Mei

Chaired by Ying Wu, Jun Mei

13:20 Effective-medium Theory for Multilayer Metamaterials: Role of Near-field Corrections
Tong Liu (*Fudan University*); *Shaojie Ma* (*Fudann University*); *Shiyi Xiao* (*Shanghai University*); *Lei Zhou* (*Fudan University*);

13:40 Using Photonic Crystals to Realize Intriguing Effective Medium Properties
Yu Ting Yang (*Soochow University*); *Jie Luo* (*Soochow University*); *Zhi Hong Hang* (*Soochow University*);

14:00 Homogenization of Generalized Core-shell Ellipsoidal Scatterers
Ari Sihvola (*Aalto University*); *Dimitrios C. Tzarouchis* (*Aalto University*);

14:20 Effective Medium Theory for Gratings
Xiujuan Zhang (*King Abdullah University of Science and Technology*); *Ying Wu* (*King Abdullah University of Science and Technology (KAUST)*); *Ross C. McPhedran* (*University of Sydney*);

14:40 Elastic Metamaterial Plate with Configurable Effective Mass Density, Bending Stiffness, and Resonant Frequencies
Jinjie Shi (*Soochow University*); *Chenkai Liu* (*Soochow University*); *Yun Lai* (*Soochow University*);

15:00 Acoustic Metamaterials with Broadband and Wide-angle Impedance Matching
Chenkai Liu (*Soochow University*); *Jie Luo* (*Soochow University*); *Yun Lai* (*Soochow University*);

15:20 Realization of Three-dimensional Acoustic Double-zero-index Materials in Phononic Crystals with Dirac-like Conical Dispersion at the Brillouin Zone Center
Chang Qing Xu (*Soochow University*); *Yun Lai* (*Soochow University*); *Guancong Ma* (*Hong Kong Baptist University*); *Ying Wu* (*King Abdullah University of Science and Technology (KAUST)*);

15:40 **Coffee Break**

Session 2P8b
Metamaterials and Transformation Optics

Thursday PM, August 2, 2018

Room T8

Organized by Yu Luo, Hongsheng Chen

Chaired by Hongsheng Chen, Bin Zheng

16:00 Invited Controlling Surface Plasmons by Covariant Curved Spaces in One-dimensional Transformation Optical Nanostructures
Fan Zhong (*Nanjing University*); *Jensen Li* (*University of Birmingham*); *Hui Liu* (*Nanjing University*); *Shining Zhu* (*Nanjing University*);

16:20 Invited Reflection-type United Frequency-space-domain Digital Coding Metamaterial
Haotian Wu (*Southeast University*); *Tie Jun Cui* (*Southeast University*);

16:40 Invited Magnetic Illusion Device for Laplace Equation by Using Homogeneous and Anisotropic Magnetic Material
Yinrui Zhao (*Lanzhou University*); *Cui Lu* (*Lanzhou University*); *Zhong-Lei Mei* (*Lanzhou University*);

17:00 Invited Numerical Simulation of Reversed Cherenkov Radiation Using a Time-domain DG Method
Sidney Shields (*Pacific Union College*); *Jichun Li* (*University of Nevada, Las Vegas*);

17:20 Invited Enhancing Optical Nonlinearity Using Quantum Nonlocal Effect
Hu Hao (*Nanyang Technological University*); *Yu Luo* (*Nanyang Technological University*);

17:40 Invited Anamorphic Fractional Fourier Transform Lens Designed by Transformation Optics
Xiao-Bo Yang (*Beijing Institute of Technology*); *Jin Hu* (*Beijing Institute of Technology*);

Session 2P9a
FocusSession.SC3: Novel Photonic Materials for Advanced Applications 4

Thursday PM, August 2, 2018

Room A1

Organized by Iam-Choon Khoo

Chaired by Iam-Choon Khoo

13:00 Halide Perovskites Based Nanophotonics
Sergey Makarov (*ITMO University*);

13:20 Invited Output Power Enhancement in Photonic-based RF Generation by Optical Pulse Compression with Fiber
Takashi Yamaguchi (*Doshisha University*); *Hiroyuki Toda* (*Doshisha University*);

13:40 Invited Post Processing Based Silicon Photonic Devices Employing Photonic Molecules
Newton C. Frateschi (*Universidade Estadual de Campinas*);

14:00 Liquid Crystals for Photonic Integrated Circuit Applications
Joanna Ptasinski (*Space and Naval Warfare Systems Center Pacific*); *Iam-Choon Khoo* (*Pennsylvania State University*); *Yeshaiahu Shaya Fainman* (*University of California at San Diego*);

14:20 Invited Study of the Angular Momentum of Light from Plasmonic Crystals
Hock Chun Ong (*The Chinese University of Hong Kong*);

14:40 Keynote Nanophotonic Light Emitters
Yeshaiahu Shaya Fainman (*University of California at San Diego*);

15:10 Invited The Prospect of Low-loss Semiconductors Replacing Noble Metals for High Field Enhancement
Greg Sun (*University of Massachusetts Boston*); *W. Hsieh* (*University of Massachusetts Boston*); *Pin Chieh Wu* (*National Taiwan University*); *Din Ping Tsai* (*Academia Sinica*); *Jacob B. Khurgin* (*Johns Hopkins University*);

15:40 **Coffee Break**

Session 2P9b
SC3: Short Distance Communication for Next Generation Access Networks

Thursday PM, August 2, 2018

Room A1

Organized by Atsushi Kanno, Sevia Mahdaliza Idrus

Chaired by Atsushi Kanno, Sevia Mahdaliza Idrus

16:00 High-capacity Mobile Fronthaul Transmission Using IF-over-Fiber Technology for Next-generation C-RAN Architectures
Shota Ishimura (*KDDI Research, Inc.*); *Abdelmoula Bekkali* (*KDDI Research, Inc.*); *Kazuki Tanaka* (*KDDI Research, Inc.*); *Kosuke Nishimura* (*KDDI Research, Inc.*); *Masatoshi Suzuki* (*KDDI Research, Inc.*);

16:20 SI-POF-based Radio Relay System Based on IF over Fiber Technique
Atsushi Kanno (*National Institute of Information and Communications Technology*); *Naokatsu Yamamoto* (*National Institute of Information and Communications Technology*); *Tetsuya Kawanishi* (*National Institute of Information and Communications Technology*);

16:40 Energy Efficient Performance Evaluation of XG-PON for Sustainable Green Communication Infrastructure
Nor Affida M. Zin (*Universiti Teknologi Malaysia*); *Sevia Mahdaliza Idrus* (*Universiti Teknologi Malaysia*); *Nur Asfahani Ismail* (*Universiti Teknology Malaysia*); *Arnidza Ramli* (*Universiti Teknologi Malaysia*); *Rizwan Aslam Butt* (*Universiti Teknologi Malaysia*);

17:00 The Integration of Security Mitigation Techniques with Dynamic Bandwidth Allocation Algorithms in Long Reach Gigabit Passive Optical Networks
Fadila Mohd Atan (*Universiti Teknologi MARA*); *Nadiatulhuda Zulkifli* (*Universiti Teknologi Malaysia*); *Sevia Mahdaliza Idrus* (*Universiti Teknologi Malaysia*); *Azura Hamzah* (*Malaysia-Japan International Institute of Technology (MJIIT)*);

17:20 Lightwave Vector Signal by Direct Laser and Electroabsorption Modulation with Digital Pre-coding and Pre-compensation
Ukrit Mankong (*Chiang Mai University*); *Praimezt Mekbungwan* (*Chiang Mai University*); *Keizo Inagaki* (*National Institute of Information and Communications Technology*); *Tetsuya Kawanishi* (*National Institute of Information and Communications Technology*);

17:40 Determination of Critical Paths for Multipath Propagation in Broadband Powerline Communication Networks
Modisa Mosalaosi (*University of KwaZulu-Natal*); *Thomas Joachim Odhiambo Afullo* (*University of KwaZulu-Natal (UKZN)*);

18:00 Short Range Propagation Simulation of Modified Ground Microstrip Antenna Design for Near Field Communication Application at Frequency of 0.35 THz
Gradi Adriandi (*Universitas Indonesia*); *Catur Apriono* (*Universitas Indonesia*);

Session 2P10
FocusSession.SC3: Advanced Nano/Quantum Photonic Technologies 1

Thursday PM, August 2, 2018

Room A2

Organized by Jin Liu, Juntao Li

Chaired by Jin Liu, Juntao Li

13:20 Optical Nanoscopy: Truly Non-intrusive
Keynote
Jianying Zhou (*Sun Yat-sen University*); *Guorong Guan* (*Sun Yat-Sen University*); *Ken Yang* (*Sun Yat-sen University*); *Aiqing Zhang* (*Sun Yat-sen University*); *Xiaonan Li* (*Sun Yat-sen University*); *Haowen Liang* (*Sun Yat-sen University*); *Yikun Liu* (*Sun Yat-sen University*);

13:50 Photonic Glass out of Core-shell Particles for High
Invited Purity Structural Color
Alexander Yu. Petrov (*Hamburg University of Technology*); *Guoliang Shang* (*Hamburg University of Technology*); *Quynh Yen Nguyen* (*Hamburg University of Technology*); *Kaline Furlan* (*Hamburg University of Technology*); *Lukas Maiwald* (*Hamburg University of Technology*); *Hagen Renner* (*Hamburg University of Technology (TUHH)*); *Dirk Jalas* (*Hamburg University of Technology*); *Robert Zierold* (*Universitat Hamburg*); *Robert Blick* (*Universitat Hamburg*); *Maksym Dosta* (*Hamburg University of Technology*); *Stefan Heinrich* (*Hamburg University of Technology*); *Rolf Janssen* (*Hamburg University of Technology*); *Gerold A. Schneider* (*Hamburg University of Technology*); *Manfred Eich* (*Hamburg University of Technology*);

14:10 Functional Plasmonic Printing Technologies for Imag-
Invited ing Devices
Zhang-Kai Zhou (*Sun Yat-Sen University*);

14:30 Accessing the Near Field of Coupled Plasmonic
Invited Nanostructures from Multiple Domains
Quan Sun (*Hokkaido University*); *Kosei Ueno* (*Hokkaido University*); *Hiroaki Misawa* (*Hokkaido University*);

14:50 Photonic Applications of Epsilon near Zero Metama-
Invited terials
Xin Li (*University of St Andrews*); *Carlo Rizza* (*Consiglio Nazionale delle Ricerche, CNR-SPIN*); *Alessandro Ciattoni* (*Consiglio Nazionale delle Ricerche, CNR-SPIN*); *Daniele Faccio* (*Heriot-Watt University*); *Andrea Di Falco* (*University of St Andrews*);

15:10 High Numerical Aperture Crystalline Silicon Metal-
Invited enses and Applications at Visible Wavelengths
Haowen Liang (*Sun Yat-sen University*); *Qiaoling Lin* (*Sun Yat-sen University*); *Yin Wang* (*Sun Yat-sen University*); *Qian Sun* (*Sun Yat-sen University*); *Juntao Li* (*Sun Yat-sen University*);

15:40 **Coffee Break**

16:00 Generation of Structured Electron Beams
Invited
Yuanjie Yang (*University of Electronic Science and Technology of China*); *G. Thirunavukkarasu* (*University of York*); *Mohamed Babiker* (*University of York*); *J. Yuan* (*University of York*);

16:20 Fabrication and Reliable Characterization of High-
Invited performance Hyperbolic Metamaterials
Cheng Zhang (*National Institute of Standards and Technology*); *Henri J. Lezec* (*National Institute of Standards and Technology*); *Wenqi Zhu* (*National Institute of Standards and Technology*); *Amit K. Agrawal* (*National Institute of Standards and Technology*);

16:40 Ultrafast Light Field Manipulation Using Cholesteric
Invited Liquid Crystals
Yikun Liu (*Sun Yat-sen University*); *Haowen Liang* (*Sun Yat-sen University*); *Chun-Wei Chen* (*Pennsylvania State University*); *Jianying Zhou* (*Sun Yat-sen University*); *Tsung-Hsien Lin* (*National Sun Yat-Sen University*); *Iam-Choon Khoo* (*Pennsylvania State University*);

17:00 Optical Sharp Edge Diffraction and Its Applications
Invited
Shenhe Fu (*Jinan University*); *Yanwen Hu* (*Jinan University*); *Taotao Zhao* (*Jinan University*); *Zhenqiang Chen* (*Jinan University*);

17:20 Hybrid Silicon and Lithium Niobate Mach-Zehnder
Invited Modulators
Xinlun Cai (*Sun Yat-Sen University*);

17:40 Few-layer $MoTe_2$-on-silicon Laser at Near Infrared Wavelength
Hanlin Fang (*Sun Yat-Sen University*); *Jin Liu* (*Sun Yat-Sen University*); *Hongji Li* (*Sun Yat-Sen University*); *Juntao Li* (*Sun Yat-Sen University*); *Thomas F. Krauss* (*University of York*); *Yue Wang* (*University of York*);

18:00 Ultrafast Optical Pulse Shaping Using Dielectric
Invited Metasurfaces
Shawn Divitt (*National Institute of Standards and Technology*); *Wenqi Zhu* (*National Institute of Standards and Technology*); *Cheng Zhang* (*National Institute of Standards and Technology*); *Henri J. Lezec* (*National Institute of Standards and Technology*); *Amit K. Agrawal* (*National Institute of Standards and Technology*);

Session 2P11
MS-1: Mini-symposium on Microwave Photonics 2

Thursday PM, August 2, 2018

Room A3

Organized by Christina Lim, Jianji Dong

Chaired by Hwan Seok Chung, Thas Ampalavanapillai Nirmalathas

13:00 Integrated Microwave Photonics Chip Platform
Invited
Chris G. H. Roeloffzen (*LioniX International BV*); *Ilka Visscher* (*LioniX International BV*); *Caterina Taddei* (*LioniX International BV*); *Marcel Hoekman* (*LioniX BV*); *Ruud M. Oldenbeuving* (*SATRAX BV*); *Paulus W. L. Van Dijk* (*LioniX International BV*); *Roelof Bernardus Timens* (*LioniX International BV*); *Jorn P. Epping* (*LioniX International BV*); *Lennart Wevers* (*LioniX International BV*); *Robert Grootjans* (*LioniX International BV*); *Dimitri Geskus* (*LioniX International BV*); *Ronald Dekker* (*LioniX International BV*); *Rene G. Heideman* (*LioniX BV*);

13:20 Si Electronic-photonic Integrated Circuits for Real-
Invited ization of Single-chip Optical Single-sideband Modulators
Woo-Young Choi (*Yonsei University*); *Byung-Min Yu* (*Yonsei University*); *Jeong-Min Lee* (*Yonsei University*); *Christian Mai* (*IHP*); *Stefan Lischke* (*IHP*); *Lars Zimmermann* (*IHP*);

13:40 Integrated Optical Filters for Microwave Photonics
Invited Signal Processing
Xiaoke Yi (*University of Sydney*); *Shijie Song* (*University of Sydney*); *Suenxin Chew* (*University of Sydney*); *Linh Nguyen* (*University of Sydney*); *Robert A. Minasian* (*University of Sydney*);

14:00 Microwave Signal Processing Using a Ultra-high-Q
Invited Silicon Microresonator
Jianji Dong (*Huazhong University of Science and Technology*); *Feng Zhou* (*Huazhong University of Science and Technology*); *Xu Wang* (*Huazhong University of Science and Technology*); *Xinliang Zhang* (*Huazhong University of Science and Technology*);

14:20 Invited Photonic Microwave Signal Processing Using Integrated Ring Resonators
Linjie Zhou (*Shanghai Jiao Tong University*); *Liangjun Lu* (*Shanghai Jiao Tong University*); *Xinyi Wang* (*Shanghai Jiao Tong University*); *Qiankun Sun* (*Shanghai Jiao Tong University*); *Lin Shen* (*Shanghai Jiao Tong University*); *Jianping Chen* (*Shanghai Jiao Tong University*);

14:40 Invited Wireless Millimeter-wave to Lightwave Signal Converter Utilizing Antenna-integrated Electro-optic Modulators
Hiroshi Murata (*Osaka University*);

15:00 Microwave Photo Absorption Method Used for Investigating Minority Carrier Annihilation Behavior in Silicon Semiconductor
Toshiyuki Sameshima (*Tokyo University of Agriculture and Technology*); *Masahiko Hasumi* (*Tokyo University of Agriculture and Technology*); *Tomohisa Mizuno* (*Kanagawa University*);

15:20 Signal Spectral-interval Estimation in Fast Photonic Analog-to-digital Converters
Sergey M. Kontorov (*National Research Nuclear University MEPhI*); *Vladimir Alekseevich Cherepenin* (*Institute of Radio Engineering and Electronics, Russian Academy of Sciences*); *Victor V. Kulagin* (*Sternberg Astronomical Institute of Moscow State University*); *Denis A. Prokhorov* (*National Research Nuclear University MEPhI*); *Alexey N. Shulunov* (*Research Centre "Module"*); *Nikolay I. Kargin* (*National Research Nuclear University MEPhI*); *Victor V. Valuev* (*Kotel'nikov Institute of Radio-engineering and Electronics of RAS*);

15:40 **Coffee Break**

16:00 Invited Microwave Photonic Signal Processing Based on Integrated Microresonator Frequency Combs
Xiaoxiao Xue (*Tsinghua University*); *Xiaoping Zheng* (*Tsinghua University*); *Bingkun Zhou* (*Tsinghua University*);

16:20 Invited Microwave Photonic System with Bandwidth Scaling
Yitang Dai (*Beijing University of Posts and Telecommunications*); *Jilong Li* (*Beijing University of Posts and Telecommunications*); *Yan Zheng* (*Beijing University of Posts and Telecommunications*); *Feifei Yin* (*Beijing University of Posts and Telecommunications*); *Kun Xu* (*Beijing University of Posts and Telecommunications*);

16:40 Invited Compact 0.5–40 GHz RF Scanning Receiver Based on Photonics
F. Scotti (*CNIT — Photonics Networks and Technologies Laboratory*); *Antonella Bogoni* (*CNIT — Photonics Networks and Technologies Laboratory*); *P. Ghelfi* (*CNIT — Photonics Networks and Technologies Laboratory*);

17:00 Invited Ultra-high Resolution Real-time Radar Imaging Based on Microwave Photonics
Fangzheng Zhang (*Nanjing University of Aeronautics and Astronautics*); *Shilong Pan* (*Nanjing University of Aeronautics and Astronautics*);

17:20 Invited Hybrid Optoelectronic Loop Microwave Photonic Filters for Application in Optoelectronic Oscillators
G. Charalambous (*University of Cyprus*); *G. K. M. Hasanuzzaman* (*University of Cyprus*); *Stavros Iezekiel* (*University of Cyprus*);

17:40 Invited Photonic Microwave Signal Processing Using Semiconductor Lasers at Period-one Nonlinear Dynamics
Sheng-Kwang Hwang (*National Cheng Kung University*); *Yu-Han Hung* (*National Cheng Kung University*); *Kun-Lin Hsieh* (*National Cheng Kung University*);

18:00 Photonic Generation of Linearly Chirped Microwave Signals Using Period-one Dynamics of Semiconductor Lasers
Chin-Hao Tseng (*National Cheng Kung University*); *Yu-Han Hung* (*National Cheng Kung University*); *Sheng-Kwang Hwang* (*National Cheng Kung University*);

18:20 Output Power Enhancement in Photonic-based RF Generation by Optical Pulse Compression with a Dispersion Managed Fiber
Reinhard Karembera (*Doshisha University*); *Takashi Yamaguchi* (*Doshisha University*); *Hiroyuki Toda* (*Doshisha University*);

Session 2P12a
FocusSession.SC3: Advanced Optofluidics: Photonic Systems for Fluids and Life Science 2

Thursday PM, August 2, 2018

Room A4

Organized by Francesco Simoni, Luigino Criante

Chaired by Luigino Criante

13:00 Silicon Photonics Solutions for On-chip Optical Trapping and Manipulation
Invited
Christophe Pin (*Hokkaido University*); *Claude Renaut* (*Universite de Bourgogne-Franche Comte*); *Jean-Baptiste Jager* (*Universite Grenoble Alpes, CEA, INAC-PHELIQS-SINAPS*); *Manon Tardif* (*Universite Grenoble Alpes, CEA, INAC-PHELIQS-SINAPS*); *Emmanuel Picard* (*Universite Grenoble Alpes, CEA, INAC-PHELIQS-SINAPS*); *David Peyrade* (*Universite Grenoble Alpes, CNRS*); *Emmanuel Hadji* (*Universite Grenoble Alpes, CEA, INAC-PHELIQS-SINAPS*); *Frederique de Fornel* (*CNRS, Universite de Bourgogne-Franche Comte*); *Benoit Cluzel* (*Institut Carnot de Bourgogne (ICB — UMR CNRS 5209)*);

13:20 Raman Spectroscopy in Microfluidic Systems
Invited
Moritz Matthiae (*Technical University of Denmark*); *Xiaolong Zhu* (*Technical University of Denmark*); *Rodolphe Marie* (*Technical University of Denmark*); *Anders Kristensen* (*Technical University of Denmark*);

13:40 LSPR Dual Resonance Sensor for a Sensitive Detection of Bacteriophages
Invited
M. Rippa (*Institute of Applied Sciences and Intelligent Systems "E. Caianiello", CNR*); *R. Castagna* (*Institute of Applied Sciences and Intelligent Systems "E. Caianiello", CNR*); *J. Zyss* (*LPQM-Ecole Normale Superieurede Cachan*); *Lucia Petti* (*Institute of Applied Sciences and Intelligent Systems — ISASI, CNR*);

14:00 Microfiber-hollow Fiber-integrated Microfluidic Devices
Invited
Fei Xu (*Nanjing University*); *Xiao Peng Hu* (*Nanjing University*);

14:20 Micro-optics for Microfluidics in Biomedical Applications
Invited
Paddy French (*EI/EWI, TU Delft*);

Session 2P12b
Advanced Nanomaterials and Nanostructures for Optical-to-Electrical Energy Conversion

Thursday PM, August 2, 2018

Room A4

Organized by Long Wen, Shaolong Wu

Chaired by Long Wen, Shaolong Wu

14:40 Optical-to-electrical Energy Conversion Using Hot Carriers and Photon Recycling
Invited
Jeremy N. Munday (*University of Maryland*);

15:00 Applications of MoS_2 Multi-layer Nanoribbons on Intermediate Band Solar Cell
Invited
Shuo-Fan Chen (*National Taiwan University*); *Yuh-Renn Wu* (*National Taiwan University*);

15:20 Modulating Oxygen Vacancy in Sn-doped Hematite Film Grown on Silicon Microwires for Efficient Photoelectrochemical Water Oxidation
Invited
Zhongyuan Zhou (*Soochow University*); *Shaolong Wu* (*Soochow University*); *Linling Qin* (*Soochow University*); *Liang Li* (*Soochow University*); *Liujing Li* (*Soochow University*); *Xiaofeng Li* (*Soochow University*);

15:40 **Coffee Break**

16:00 A Facile Solution Procession Technique for Synthesis of Ternary Semiconductor Quantum Dots for Applications in Solar Cells
Invited
Ming-Way Lee (*National Chung Hsing University*);

16:20 High-Performance, Ultra-flexible and Transparent Metallic Mesh Electrodes for Solid-state Supercapacitors
Yanhua Liu (*Soochow University*);

16:40 Hot Electron Harvesting via Photoelectric Ejection and Photothermal Heat Relaxation
Invited
Long Wen (*Jinan University*); *Yifu Chen* (*Jinan University*); *Li Liang* (*Jinan University*); *Qin Chen* (*Jinan University*);

17:00 Bidirectional Absorbers in the Visible Regime Using Bio-inspired Moth-eye Nanostructures
Invited
Su Shen (*Soochow University*); *Yun Zhou* (*Soochow University*); *Yanhua Liu* (*Soochow University*); *Nan Liu* (*Soochow University*); *Shaolong Wu* (*Soochow University*);

17:20 High Performance Photodetector Based on 2D Materials and Ferroelectric Relaxor Polymer Hybrid System
Yan Chen (*Shanghai Institute of Technical Physics, Chinese Academy of Sciences*); *Jianlu Wang* (*Shanghai Institute of Technical Physics, Chinese Academy of Sciences*); *Junhao Chu* (*Shanghai Institute of Technical Physics, Chinese Academy of Sciences*);

17:40 High Sensitivity Refractive Index Sensor by Silicon-gold Core-shell Nanowire Array Based on Plasmonic Resonance and Schottky Junction
Linling Qin (*Soochow University*); *Cheng Zhang* (*Soochow University*); *Xiaofeng Li* (*Soochow University*);

Session 2P13
FocusSession.SC3.SC5: Advanced Optical Sensing and Imaging for Label-free Biodetection

Thursday PM, August 2, 2018

Room A5

Organized by Yihui Wu, Natan T. Shaked

Chaired by Yihui Wu, Natan T. Shaked

13:20 Rapid and Label-free Detection of Anthrax Spores Using Quantitative Phase Imaging and Deep Learning (Invited)
Yong Keun Park (*Korea Advanced Technology of Science and Technology (KAIST)*);

13:40 Label-free Quantitative Phase Signatures of Cancer Cells (Invited)
Natan T. Shaked (*Tel-Aviv University*);

14:00 Raman-activated Droplet Sorting (RADS) for Label-free High-throughput Screening of Single-cells (Invited)
Xixian Wang (*Qingdao Institute of Bioenergy and Bioprocess Technology, Chinese Academy of Sciences*); *Bo Ma* (*Qingdao Institute of Bioenergy and Bioprocess Technology, Chinese Academy of Sciences*);

14:20 In Situ Finger Prints of Photon Status Parameters in Limited Space Scattering for Biomacromolecule Imaging and Structural Characterization (Invited)
Xuefeng Liu (*Nanjing University of Science and Technology*);

14:40 Non-diffracting Beams for Imaging through Turbid Media (Invited)
Yael Roichman (*Tel Aviv University*); *Harel Nagar* (*Tel Aviv University*);

15:00 Simulating the Amplitude Pattern in Differential Phase Contrast Microscope by Numerical Simulation
Cheng-Wei Ho (*National Taiwan University*); *Snow H. Tseng* (*National Taiwan University*);

15:15 Spectral Sensing with High Resolution and Signal-to-noise Ratio Based on Hadamard Transform
Mingbo Chi (*Changchun Institute of Optics, Fine Mechanics and Physics, Chinese Academy of Sciences*); *Xinxin Han* (*Changchun Institute of Optics, Fine Mechanics and Physics, Chinese Academy of Sciences*); *Yihui Wu* (*Changchun Institute of Optics, Fine Mechanics and Physics, Chinese Academy of Sciences*);

15:40 **Coffee Break**

16:00 Microfluidic Flow Cytometer with Spark-generated Microbubble Cell Sorter (Keynote)
Jingjing Zhao (*Tsinghua University*); *Zheng You* (*Tsinghua University*);

16:30 Plasmonic Nano-imaging of Intracellular Dynamics and Molecular Distribution in a Living Cell (Keynote)
Satoshi Kawata (*Osaka University*);

17:00 A Novel Optofluidic Lab-on-chip Device with Integrated Super-resolution Imaging System (Invited)
Bing Yan (*Bangor University*); *Liyang Yue* (*Bangor University*); *James Norman Monks* (*Bangor University*); *Owen Guy* (*Swansea University*); *Perumal Nithiarasu* (*Swansea Universit*); *Feng Jiang* (*Central South University of Forestry and Technology*); *Zengbo Wang* (*Bangor University*);

17:20 Realization of Hyperlens Imaging Platform for High-throughput Super-resolution Imaging
Dasol Lee (*Pohang University of Science and Technology (POSTECH)*); *Minkyung Kim* (*Pohang University of Science and Technology (POSTECH)*); *Sunae So* (*Pohang University of Science and Technology (POSTECH)*); *Jungho Mun* (*Pohang University of Science and Technology (POSTECH)*); *Taejun Lee* (*Pohang University of Science and Technology (POSTECH)*); *Junsuk Rho* (*Pohang University of Science and Technology (POSTECH)*);

17:40 Label-free Super Resolution Imaging with Or without Evanescent Waves (Invited)
Yihui Wu (*Changchun Institute of Optics, Fine Mechanics and Physics, Chinese Academy of Sciences*); *Wenchao Zhou* (*Changchun Institute of Optics, Fine Mechanics and Physics, Chinese Academy of Sciences*); *Huaming Xing* (*Changchun Institute of Optics, Fine Mechanics and Physics, Chinese Academy of Sciences*); *Yongbo Deng* (*Changchun Institute of Optics, Fine Mechanics and Physics, Chinese Academy of Sciences*); *Yongshun Liu* (*Changchun Institute of Optics, Fine Mechanics and Physics, Chinese Academy of Sciences*); *Zhou Song* (*Changchun Institute of Optics, Fine Mechanics and Physics, Chinese Academy of Sciences*);

18:00 Titanium Nitride Thin Film and Nanostructure for Label-free Surface Plasmon Resonance Biodetection
Guangyu Qiu (*City University of Hong Kong*); *Chen Xu* (*City University of Hong Kong*); *Siu Pang Ng* (*City University of Hong Kong*); *Chi Man Lawrence Wu* (*City University of Hong Kong*);

18:20 Biosensing Based on Fano Resonance in Whispering Gallery Mode Resonators
Yue Wang (*Changchun Institute of Optics, Fine Mechanics and Physics, Chinese Academy of Sciences*); *Hong-Chun Zhao* (*Changchun Institute of Optics, Fine Mechanics and Physics, Chinese Academy of Sciences*); *Yihui Wu* (*Changchun Institute of Optics, Fine Mechanics and Physics, Chinese Academy of Sciences*);

Session 2P14
FocusSession.SC2: Topology and PT Symmetry Based Optical Devices

Thursday PM, August 2, 2018

Room A6

Organized by Jian-Wen Dong, Renmin Ma

Chaired by Renmin Ma, Jian-Wen Dong

13:00 Keynote Spin Orbital Coupling of Light with 2D and 3D Metamaterials
Shuang Zhang (*University of Birmingham*);

13:30 Invited Topological Edge States in Non-Hermitian Honeycomb CROW Lattices
Ming-Hui Lu (*Nanjing University*); *Xueyi Zhu* (*Nanjing University*); *Samit Kumar Gupta* (*Nanjing University*); *Yan-Feng Chen* (*Nanjing University*);

13:50 Invited Generalization of Optical Theorem for Complex Vectorial Beams
Alexey V. Krasavin (*King's College London*); *Paulina Segovia* (*Pedro de Alba S/N Ciudad Universitaria*); *Rostislav Dubrovka* (*Queen Mary University of London*); *Nicolas Olivier* (*King's College London*); *Gregory A. Wurtz* (*King's College London*); *Pavel B. Ginzburg* (*ITMO University*); *Anatoly V. Zayats* (*King's College London*);

14:10 Invited Topologically Protected Condensates and Lasers
Henning Schomerus (*Lancaster University*);

14:30 Invited Quantum Spin Hall Effect Analog for Vortices in an Interacting Bosonic Quantum Fluid
Dmitry Solnyshkov (*Universite Clermont-Auvergne, CNRS*); *Olivier Bleu* (*Universite Clermont-Auvergne, CNRS*); *Guillaume Malpuech* (*Universite Clermont-Auvergne, CNRS*);

14:50 Invited High Order Topological Insulators Based on Acoustic Kagome Lattices
Haoran Xue (*Nanyang Technological University*); *Fei Gao* (*Nanyang Technological University*); *Baile Zhang* (*Nanyang Technological University*);

15:10 Invited Realization of Topologically Robust Transport and Photonic Routing in Silicon-on-insulator Valley Photonic Crystals
Xin-Tao He (*Sun Yat-Sen University*); *En-Tao Liang* (*Sun Yat-Sen University*); *Jia-Jun Yuan* (*Sun Yat-Sen University*); *Jian-Wen Dong* (*Sun Yat-Sen University*);

15:40 **Coffee Break**

16:00 Invited Manipulation of Chiral Edge States in Photonic Chern Insulators with Pseudospin
Zeguo Chen (*King Abdullah University of Science and Technology*); *Ying Wu* (*King Abdullah University of Science and Technology (KAUST)*); *Xiao Hu* (*National Institute for Materials Science*);

16:20 Invited Observation of Polarization Vortices in Momentum Space
Yiwen Zhang (*Fudan University*); *Ang Chen* (*Fudan University*); *Wenzhe Liu* (*Fudan University*); *Chia Wei Hsu* (*Yale University*); *Bo Wang* (*Fudan University*); *Fang Guan* (*Fudan University*); *Xiaohan Liu* (*Fudan University*); *Lei Shi* (*Fudan University*); *Ling Lu* (*Institute of Physics, Chinese Academy of Sciences*); *Jian Zi* (*Fudan University*);

16:40 Invited Silicon Nitride Waveguide Based Optical Vortex Emitter
Zengkai Shao (*Sun Yat-sen University*); *Jiangbo Zhu* (*University of Bristol*); *Yanfeng Zhang* (*Sun Yat-sen University*); *Yujie Chen* (*Sun Yat-sen University*); *Siyuan Yu* (*Sun Yat-sen University*);

17:00 Invited PT-symmetry and Radiative Surface Modes in Gyromagnetic/Gyroelectric Photonic Boundaries
Jin Wang (*Southeast University*); *Kai Fung Lee* (*The Hong Kong Polytechnic University*); *Kin Hung Fung* (*The Hong Kong Polytechnic University*);

17:20 Invited hiral-reversing Single Emitter Radiation by Eigenstates Phase Locking
Xing-Yuan Wang (*Peking University*); *Hua-Zhou Chen* (*Peking University*); *Suo Wang* (*Peking University*); *Li Ge* (*City University of New York*); *Shuang Zhang* (*University of Birmingham*); *Renmin Ma* (*Peking University*);

17:40 Conjectural PT Symmetry Breaking for Switchable Lasing Anti-lasing of a Two Dimensional Arrayed Nanoparticle System
James Norman Monks (*Bangor University*); *Bing Yan* (*Bangor University*); *Rakesh Dhama* (*Bangor University*); *Liyang Yue* (*Bangor University*); *Zengbo Wang* (*Bangor University*);

17:55 Tunable Coalescence of Exceptional Points in PT-symmetric Waveguides
Jin Wang (*Southeast University*); *Hui Yuan Dong* (*Nanjing University of Posts and Telecommunications*); *Qian Yi Shi* (*Southeast University*); *Zheng-Gao Dong* (*Southeast University*); *Kin Hung Fung* (*The Hong Kong Polytechnic University*);

18:10 Brewster-tilted Tamm Plasmon-polariton with Tunable Q Factor
Pavel Sergeevich Pankin (*Siberian Federal University*); *Jhen-Hong Yang* (*National Chiao-Tung Univesity*); *Bing-Ru Wu* (*National Chiao-Tung Univesity*); *Kuo-Ping Chen* (*National Chiao-Tung University*); *Stepan Yakovlevich Vetrov* (*Siberian Federal University*); *Ivan Vladimirovich Timofeev* (*Siberian Federal University*); *Almas Fattakhovich Sadreev* (*L. V. Kirensky Institute of Physics*);

18:25 Invited Active Plasmonic Parity-time Symmetric and Exceptional Point Structures
Choloong Hahn (*University of Ottawa*); *Youngsun Choi* (*Hanyang University*); *Jae Woong Yoon* (*Hanyang University*); *Seok Ho Song* (*Hanyang University*); *Pierre Berini* (*University of Ottawa*);

Session 2P15a
SC3: Photonic Microstructures/Nanostructures and Their Applications

Thursday PM, August 2, 2018

Room A7

Organized by Masayuki Fujita, Kengo Nozaki

Chaired by Masayuki Fujita, Kengo Nozaki

13:20 Invited Evolution of High-speed Plasmonic Modulators from SOI to (Almost) Any Substrate
Yuriy Fedoryshyn (*Institute of Electromagnetic Fields (IEF), ETH Zurich*); *W. Heni* (*Institute of Electromagnetic Fields (IEF), ETH Zurich*); *B. Baeuerle* (*Institute of Electromagnetic Fields (IEF), ETH Zurich*); *A. Josten* (*Institute of Electromagnetic Fields (IEF), ETH Zurich*); *C. Haffner* (*Institute of Electromagnetic Fields (IEF), ETH Zurich*); *C. Hoessbacher* (*Institute of Electromagnetic Fields (IEF), ETH Zurich*); *M. Ayata* (*Institute of Electromagnetic Fields (IEF), ETH Zurich*); *U. Koch* (*Institute of Electromagnetic Fields (IEF), ETH Zurich*); *Y. Salamin* (*Institute of Electromagnetic Fields (IEF), ETH Zurich*); *D. L. Elder* (*University of Washington*); *Larry R. Dalton* (*University of Washington*); *Juerg Leuthold* (*Institute of Electromagnetic Fields (IEF), ETH Zurich*);

13:40 Ultrahigh-$\boldsymbol{Q/V}$ H1 Slotted Photonic Crystal Nanocavity for Bio-sensing Application
Eiichi Kuramochi (*NTT Corporation*); *Haiqi Wen* (*NTT Corporation*); *Shota Kita* (*NTT Corporation*); *Akihiko Shinya* (*Nippon Telegraph & Telephone Corp*); *Masaya Notomi* (*NTT Corporation*);

14:00 Photolithographically Fabricated Silicon Photonic Crystal Nanocavity Photoreceiver with a Laterally Integrated ***pin*** Diode
Nurul Ashikin Binti Daud (*Keio University*); *Tomohiro Tetsumoto* (*Keio University*); *Takasumi Tanabe* (*Keio University*);

14:20 Invited InP-on-SOI Photonic Crystal-based Nano Optoelectronic Devices
D. Fitsios (*Universite Paris Saclay*); *D. Sanchez* (*Universite Paris Saclay*); *G. Crosnier* (*Universite Paris Saclay*); *F. Manegatti* (*Universite Paris Saclay*); *S. Bouchoule* (*Universite Paris Saclay*); *I. Sagnes* (*Universite Paris Saclay*); *R. Raj* (*Universite Paris Saclay*); *Fabrice Raineri* (*Universite Paris Saclay*);

14:40 Numerical Simulation of Highly Efficient Terahertz Wave Generation in a Low-group-velocity and Low-dispersion 2D GaAs Photonic Crystal Waveguide
Teruyuki Nakahama (*Wakayama University*); *Nobuhiko Ozaki* (*Wakayama University*); *Hisaya Oda* (*Chitose Institute of Science and Technology*); *Naoki Ikeda* (*National Institute for Materials Science*); *Yoshimasa Sugimoto* (*National Institute for Materials Science*);

15:00 Terahertz Luneburg Lens Antenna with Photonic Crystal Waveguide
Daniel Headland (*The University of Adelaide*); *Ryoumei Yamada* (*Osaka University*); *Withawat Withayachumnankul* (*The University of Adelaide*); *Masayuki Fujita* (*Osaka University*); *Tadao Nagatsuma* (*Osaka University*);

15:20 Invited Photonic Crystal Resonators for Terahertz Sensing Applications
Stephen M. Hanham (*University of Birmingham*); *Clare Watts* (*Imperial College London*); *Munir M. Ahmad* (*Imperial College London*); *William J. Otter* (*Imperial College London*); *Stepan Lucyszyn* (*Imperial College London*); *Norbert Klein* (*Imperial College London*);

15:40 **Coffee Break**

Session 2P15b
SC5: Visualization of Electromagnetic Fields and Waves

Thursday PM, August 2, 2018

Room A7

Organized by Satoshi Yagitani, Aya Ohmae

Chaired by Satoshi Yagitani

16:00 AC Magnetic Field Projection with Atomic Magnetometer
Shuji Taue (*Okayama University*); *Yoshitaka Toyota* (*Okayama University*);

16:20 A High Flexibility Near-field Electromagnetic Visibility System
Takeshi Ishida (*Noise Laboratory Co., Ltd.*);

16:40 Measurement of Two-dimensional Power and Phase Distributions of Radio Waves
Takuya Tsubota (*Kanazawa University*); *Naoki Tonooka* (*Kanazawa University*); *Hirohumi Segawa* (*Kanazawa University*); *Satoshi Yagitani* (*Kanazawa University*); *Tomohiko Imachi* (*Kanazawa University*); *Mitsunori Ozaki* (*Kanazawa University*);

17:00 In-situ Visualization System for Radio Waves Using a Head-mounted Display
Hirohumi Segawa (*Kanazawa University*); *Takuya Tsubota* (*Kanazawa University*); *Naoki Tonooka* (*Kanazawa University*); *Atsuya Sakano* (*Kanazawa University*); *Satoshi Yagitani* (*Kanazawa University*); *Mitsunori Ozaki* (*Kanazawa University*); *Tomohiko Imachi* (*Kanazawa University*);

17:20 Near-field Terahertz Imaging Using Bi_2FeCrO_6 (BFCO) Thin-film Sensor
Francois Blanchard (*École de Technologie Superieure (ÉTS)*); *Riad Nechache* (*École de Technologie Superieure (ÉTS)*); *Ryoichi Sakata* (*Kyoto University*); *Fatemeh Amirkhan* (*École de Technologie Superieure (ÉTS)*); *Kenji Takiguchi* (*Kyoto University*); *T. Arikawa* (*Kyoto University*); *Koichiro Tanaka* (*Kyoto University*);

17:40 Real-time 5G Radio Wave Visualizer
Tetsuro Imai (*NTT DOCOMO INC.*); *Minoru Inomata* (*NTT DOCOMO INC.*); *Yukihiko Okumura* (*NTT DOCOMO INC.*);

18:00 Radio Environment Visualization and Metamaterial-inspired Compact Antenna Systems
Yasuhiko Matsunaga (*NEC Corporation*); *Masaki Kitsunezuka* (*NEC Corporation*); *Kenta Tsukamoto* (*NEC Corporation*); *Kazuaki Kunihiro* (*NEC Corporation*); *Keishi Kosaka* (*NEC Corporation*); *Eiji Hankui* (*NEC Corporation*); *Hiroshi Toyao* (*NEC Corporation*);

Session 2P16
SC4: Recent Diagnostic and Therapeutic Applications of Microwaves

Thursday PM, August 2, 2018

Room A8

Organized by Lorenzo Crocco, Koichi Ito

Chaired by Lorenzo Crocco, Koichi Ito

13:20 Feasibility of Quantitative Mapping of Microscopic Cerebrospinal Fluid Motion Based on Q-space Imaging
Kenta Maruyama (*Tokai University*); *Takayoshi Kamata* (*Tokai University*); *Yu Hattori* (*Tokai University*); *Ayane Yoshida* (*Tokai University*); *Kaya Murakami* (*Tokai University*); *Mitsunori Matsumae* (*Tokai University School of Medicine*); *Hideki Atsumi* (*Tokai University School of Medicine*); *Kagayaki Kuroda* (*Tokai University*);

13:40 Two-channel Bioradar for Stress Monitoring
Lesya N. Anishchenko (*Bauman Moscow State Technical University*); *Vladimir V. Razevig* (*Bauman Moscow State Technical University*);

14:00 Performance Evaluations of Surgical Snare Using Microwave Energy
Masashi Sugiyama (*Chiba University*); *Kazuyuki Saito* (*Chiba University*);

14:20 Microwave Thermal Ablation near Metallic Bronchial Prostheses: Numerical Models and Experiments
Lorenzo Capineri (*Università di Firenze*); *Mattia Dimitri* (*Università di Firenze*); *Guido Biffi Gentili* (*Università degli Studi di Firenze*);

14:40 Monitoring Ablation Treatments via Microwave Tomography: Towards an Experimental Proof
Rosa Scapaticci (*Institute for Electromagnetic Sensing of the Environment*); *Marta Cavagnaro* (*Universita degli Studi di Roma "La Sapienza"*); *Vanni Lopresto* (*Research Center ENEA Casaccia*); *Rosanna Pinto* (*ENEA*); *Lorenzo Crocco* (*CNR — National Research Council of Italy*);

15:00 Towards Optimization of Open Ended Contact Probes for Breast Cancer Diagnosis
Tuba Yilmaz (*Istanbul Technical University*);

15:40 **Coffee Break**

16:00 A Novel Bending U-shaped Metal Strip Design on RF Tracking Tag with a High-level Isolation for Minimally Invasive Surgery Applications
Yuan-Chih Lin (*Metal Industries Research & Development Centre*); *N. J. An* (*Metal Industries Research & Development Centre*); *H. A. Tsai* (*Metal Industries Research & Development Centre*); *S. C. Chen* (*Metal Industries Research & Development Centre*);

16:20 Wireless ECG Patient Monitoring System Performance Aimed at Off-/On-body Communications
Basari (*Universitas Indonesia*); *M. Anugrah Agung* (*Universitas Indonesia*);

16:40 RF Electrical Detection and Characterization of Exosomes Released from Epstein-Barr Virus Infected and Uninfected Cells
Mahmoud Al Ahmad (*United Arab Emirates University*); *Waqar Ahmed* (*UAE University*); *Gulfaraz Khan* (*UAE University*);

Session 2P17
FocusSession.SC1: Kohei Hongo Memorial Session

Thursday PM, August 2, 2018

Room A9

Organized by Andrey V. Osipov, Kazuya Kobayashi

Chaired by Andrey V. Osipov, Kazuya Kobayashi

13:20 Diffraction Study with Prof. Kohei Hongo
Keynote
Hiroshi Shirai (*Chuo University*);

13:50 Late Professor Kohei Hongo and His Research Style
Keynote in Electromagnetic Community
Masahiro Hashimoto (*Osaka Electro-Communication University*);

14:20 Solving Electrically Large Electromagnetic Scattering
Keynote Problems by Hybridizing Numerical and Asymptotic Techniques
Raj Mittra (*University of Central Florida*); *Chao Li* (*University of Jinan*);

14:50 Mathematical Analysis of Electromagnetic Guided
Keynote Propagation and Scattering in Millimeter-wave and Optical Fields
Yasumitsu Miyazaki (*Aichi University of Technology*);

15:40 **Coffee Break**

16:00 Expression of the Electromagnetic Field near a Caus-
Invited tic
Akira Komiyama (*Osaka Electro-Communication University*);

16:20 Extreme Properties of Electromagnetic Scattering
Invited from Impedance-matched Bodies
Andrey V. Osipov (*Microwaves and Radar Institute, German Aerospace Center (DLR)*);

16:40 High-frequency Diffraction Theory with Professor
Invited Hongo as Memory
Hirokazu Kobayashi (*Osaka Institute of Technology*);

17:00 Diffraction by a Finite Parallel-plate Waveguide with
Invited Material Loading: A Review on the Wiener-Hopf Analysis
Kazuya Kobayashi (*Chuo University*);

17:20 Transmission Resonance Phenomena for a Narrow
Invited Rectangular Slot in Thick Conducting Screen
Kyoung-Je Park (*Kyungpook National University*); *Young-Ki Cho* (*Kyungpook National University*);

17:40 Diffraction by Multiple Rectangular Holes in a Thin
Invited Conducting Screen — Calculation of Double Infinite Integrals for the Bessel Functions
Hirohide Serizawa (*Numazu National College of Technology*); *Yukito Takahashi* (*National Institute of Technology, Numazu College*);

Session 2P18a
Biological Effects of EM Fields

Thursday PM, August 2, 2018

Room A10

Organized by Jan Vrba

Chaired by Jan Vrba

13:00 Selective Chemotherapy: Directing Chemotherapeutic Agents to Cancer Cells with Noninvasively Applied High Peak Power, Low Duty Cycle Radiofrequency or Microwave Pulsing
Fred Sterzer (*MMTC, Inc.*);

13:20 Research of Biological Effects of EM Field in Microwave Frequency Band
Jan Vrba (*Czech Technical University in Prague*); *Jan Vrba, Jr.* (*Czech Technical University in Prague*); *David Vrba* (*Czech Technical University in Prague*); *Ilja Merunka* (*Czech Technical University in Prague*); *Ondrej Fiser* (*Czech Technical University in Prague*);

13:40 A Co-design of Current Reuse RFPA and Compact Spiral Printed Antenna
Ayman M. Ismaiel (*Egypt-Japan University of Science and Technology*); *Abdelrhman Sabry* (*Egypt-Japan University of Science and Technology*); *Ahmed Allam* (*Egypt-Japan University of Science and Technology*); *Adel B. Abdel-Rahman* (*South Valley University*);

14:00 Microwave Radiation from Mobile Phone Base Transceiver Stations May Disrupt Rest-activity Rhythm and Sleep Quality in Humans: A Preliminary Study
Margaret Messiah Singh (*Pt. Ravishankar Shukla University*); *Priyanka Chandel* (*Pt. Ravishankar Shukla University*); *Arti Parganiha* (*Pt. Ravishankar Shukla University*); *Atanu Kumar Pati* (*Pt. Ravishankar Shukla University*);

14:20 Does Exposure to Radiation from Mobile Phone Towers Affect Sleep and Cognition in Humans? Results from a Pilot Field Study
Priyanka Chandel (*Pt. Ravishankar Shukla University*); *Margaret Messiah Singh* (*Pt. Ravishankar Shukla University*); *Arti Parganiha* (*Pt. Ravishankar Shukla University*); *Atanu Kumar Pati* (*Pt. Ravishankar Shukla University*);

14:40 The Value of Phase Angle in Electrical Impedance Tomography Breath Detection
Davood Khodadad (*Linnaeus University*); *Sven Nordebo* (*Linnaeus University*); *Nima Seifnaraghi* (*Middlesex University*); *Rebecca Yerworth* (*University College London*); *Andreas D. Waldmann* (*Swisstom AG*); *Beat Muller* (*Swisstom AG*); *Inez Frerichs* (*University Medical Centre Schleswig-Holstein*); *Anton van Kaam* (*Emma Children's Hospital, Academic Medical Center*); *Martijn Miedema* (*Emma Children's Hospital, Academic Medical Center*); *Richard Bayford* (*Middlesex University*);

15:00 Monopole Antenna Array with Individual Shields for Ultra High Field Magnetic Resonance Imaging
A. S. M. Zahid Kausar (*University of Queensland*); *David C. Reutens* (*University of Queensland*); *Ewald Weber* (*The University of Queensland*); *Viktor Vegh* (*University of Queensland*);

15:20 The Biological Effects of 2.45 GHz Microwaves on Bacterial and Yeast Cells
Evans Kwame Ahortor (*Cardiff University*); *Adrian Porch* (*Cardiff University*); *Leslie Baillie* (*Cardiff University*);

15:40 **Coffee Break**

Session 2P18b
FocusSession.SC2&SC3: Light Manipulation and Micro-/Nano-structured Optoelectronic Devices 1

Thursday PM, August 2, 2018

Room A10

Organized by Liu Yang, Yoichi Okuno

Chaired by Liu Yang, Yoichi Okuno

16:00 Invited Nonlinear Kerr-optics with Plasmonic Nanorod Metamaterials
Luke H. Nicholls (*King's College London*); *Andrers D. Neira* (*King's College London*); *Francisco J. Rodriguez Fortuno* (*King's College London*); *Mazhar E. Nasir* (*King's College London*); *Alexey V. Krasavin* (*King's College London*); *Gregory A. Wurtz* (*King's College London*); *Anatoly V. Zayats* (*King's College London*);

16:20 Invited Strong Coupling between Fabry-Pérot Nanocavity and Localized Surface Plasmon Resonance and Its Application for Water Splitting
Xu Shi (*Hokkaido University*); *Kosei Ueno* (*Hokkaido University*); *Tomoya Oshikiri* (*Hokkaido University*); *Quan Sun* (*Hokkaido University*); *Keiji Sasaki* (*Hokkaido University*); *Hiroaki Misawa* (*Hokkaido University*);

16:40 Invited Surface Modification and Structure Design of Perovskite Solar Cells
Dong Wei (*North China Electric Power University*); *Meicheng Li* (*North China Electric Power University*);

17:00 Invited Nanostructured Solar Energy Harvesting Devices: From Photovoltaics to Nanorectennas
Joao Cunha (*Ningbo Institute of Materials Technology and Engineering, Chinese Academy of Sciences*); *Remo Proietti Zaccaria* (*Istituto Italiano di Tecnologia*);

17:20 Invited Nanostructured Solar Selective Absorbers
Liu Yang (*Zhejiang University*); *Kequn Chi* (*Zhejiang University*); *Sailing He* (*Zhejiang University*);

17:40 Invited Optoelectronic Metasurfaces
Pierre Berini (*University of Ottawa*);

Session 2P0
Poster Session 2

Thursday PM, August 2, 2018
14:00 PM - 17:00 PM
Room Foyer

1 Force Analysis of Small-scale Unmanned Rotorcraft for Transmission Line Inspection
Zhe Yuan (*Huazhong University of Science and Technology*); *Qizheng Ye* (*Huazhong University of Science and Technology*); *Zhuang Liu* (*China Electric Power Research Institute*); *Guiwei Shao* (*China Electric Power Research Institute*);

2 Shuffled Structure for 4.225 GHz Antireflective Plates: A Proposal Proven by Numerical Simulation
Shin-Ku Lee (*National Cheng Kung University*); *Mingtsu Ho* (*Wu Feng University*);

3 Three-dimensional Electromagnetic Modeling Using Volume Integral Equation with Curved Hexahedron Basic Function
Jinghe Li (*Guilin University of Technology*); *Honghua Wang* (*Guilin University of Technology*); *Zhi Zhang* (*Guilin University of Technology*); *Yuzeng Lv* (*Guilin University of Technology*); *Yanli Ding* (*Guilin University of Technology*); *Minling Wang* (*Guilin University of Technology*);

4 Local and Macroscopic Applications of a Four-flux Monte Carlo Model
E. De la Hoz (*University of Cantabria*); *Rodrigo Alcaraz de la Osa* (*Universidad of Cantabria*); *Dolores Ortiz Marquez* (*University of Cantabria*); *Jose Maria Saiz Vega* (*Universidad de Cantabria*); *Fernando Moreno* (*University of Cantabria*); *Francisco Gonzalez* (*University of Cantabria*);

5 A Modified Method for Measuring the Faraday Rotation Angle
Wenli Yu (*Beihang University*); *Zhaolong Qiao* (*Beihang University*); *Xiuzhu Ye* (*Beihang University*); *Ming Bai* (*Beihang University*);

6 Data Augmentation Using Conditional GANs for Facial Emotion Recognition
Wei Yi (*Zhejiang University*); *Yaoran Sun* (*Zhejiang University*); *Sailing He* (*Zhejiang University*);

7 An Efficient Face Recognition Algorithm Based on Deep Learning for Unmanned Supermarket
Fozhi Zhou (*Tongji University*); *Guo Chun Wan* (*Tongji University*); *Yong Kang Kuang* (*Tongji University*); *Mei Song Tong* (*Tongji University*);

8 Efficient Data Record System for Radio Backend
Shaoguang Guo (*Shanghai Astronomical Observatory, Chinese Academy of Science*); *Zhijun Xu* (*Shanghai Astronomical Observatory, Chinese Academy of Science*);

9 Pre-processing VDIF Data in FPGA
Jiangying Gan (*Shanghai Astronomical Observatory, Chinese Academy of Science*); *Zhijun Xu* (*Shanghai Astronomical Observatory, Chinese Academy of Science*);

10 A Novel Extraction Method for Melodic Features from MIDI Files Based on Probabilistic Graphical Models
Lan Chen (*Shanghai Institute of Technology*); *Ying Jie Ma* (*Shanghai Institute of Technology*); *Jun Zhang* (*Shanghai Institute of Technology*); *Guo Chun Wan* (*Tongji University*); *Mei Song Tong* (*Tongji University*);

11 Model Calculations for Hardware Correlator at SHAO
Jiangying Gan (*Shanghai Astronomical Observatory, Chinese Academy of Science*); *Zhijun Xu* (*Shanghai Astronomical Observatory, Chinese Academy of Science*);

12 Behavior of Ferrite via Holes in Substrate Integrated Waveguide (SIW) Structure
Wissal Elahmar (*Ecole Nationale D'ingenieur De Tunis*); *Noemen Ammar* (*University of Tunis el Manar*); *Taoufik Aguili* (*University of Tunis El Manar (UTM)*);

13 Evolution of Azimuthally-variant Polarized Beams in a Strongly Nonlocally Nonlinear Medium
Caixia Liu (*Zhejiang Sci-Tech University*); *Xiaoyu Zhang* (*Zhejiang Sci-Tech University*); *Zhongxing Wang* (*Zhejiang Sci-Tech University*); *Huiwen Zhu* (*Zhejiang Sci-Tech University*); *Rui Pin Chen* (*Zhejiang Sci-Tech University*);

14 Discussion on Atmospheric Dielectric Barrier Discharge of Nitrogen
Zhuwen Zhou (*Key Laboratory of Photoelectron Materials Design and Simulation in Guizhou Province*); *Xinfeng Diao* (*Guizhou Education University*); *Gaofu Liu* (*Guizhou Education University*); *Zhou Lu* (*Guizhou Education University*);

15 Propagation and Collapse of a Vector Beam with Radially-variant States of Polarization in a Kerr Mediun
Zhongxing Wang (*Zhejiang Sci-Tech University*); *Xiaoyu Zhang* (*Zhejiang Sci-Tech University*); *Caixia Liu* (*Zhejiang Sci-Tech University*); *Huiwen Zhu* (*Zhejiang Sci-Tech University*); *Rui Pin Chen* (*Zhejiang Sci-Tech University*);

16 Analytical Study of Microstrip Bandpass Filter by Using Single- and Dual-mode Resonators
Yuta Ishikawa (*National Institute of Technology, Kisarazu College*); *Kosei Tanii* (*National Institute of Technology, Kisarazu College*); *Takanobu Ohno* (*Kisarazu National College of Technology*); *Masahiro Uehara* (*National Institute of Technology, Kisarazu College*);

17 Waveguide BPF Composed of Dielectric Frequency Selective Structure with High Suppression of Spurious Mode
Hardi Nusantara (*Institut Teknologi Bandung*); *Amanda Argadinata Ginting* (*Institut Teknologi Bandung*); *Mohammad Ridwan Effendi* (*Institut Teknologi Bandung*); *Achmad Munir* (*Institut Teknologi Bandung*);

18 Single-cut Near-field Far-field Transformation Employing Two-dimensional Plane-wave Expansion
Shuntaro Omi (*Tokyo University of Agriculture and Technology*); *Takuji Arima* (*Tokyo University of Agriculture and Technology*); *Toru Uno* (*Tokyo University of Agriculture and Technology*);

19 Highly Efficient Ultrathin Metalens for Microwave Regime
Yumna Siddique (*Information Technology University (ITU)*); *Muhammad Qasim Mehmood* (*Information Technology University (ITU)*); *Muhammad Mahmood Ali* (*Ghulam Ishaq Khan Institute of Engineering Sciences and Technology*); *Ahsan Sarwar Rana* (*Information Technology University (ITU)*); *Muhammad Zubair* (*Information Technology University of the Punjab*);

20 Design Optimization of RF-MEMS Based Multiband Reconfigurable Antenna Using Response Surface Methodology
Fatima Akhtar (*National University of Sciences and Technology (NUST)*); *Muhammad Mubasher Saleem* (*National University of Science and Technology (NUST)*); *Muhammad Zubair* (*Information Technology University (ITU)*); *Mashhood Ahmad* (*National University of Science and Technology (NUST)*);

21 Indoor Localization System Using Commensal Radar Principle
Santu Sardar (*Indian Institute of Technology Hyderabad*); *Ravi Sharan B A G* (*Indian Institute of Technology Hyderabad*); *Prabhat Kumar Rai* (*Indian Institute of Technology Hyderabad*); *Gautam Kumar* (*Indian Institute of Technology Hyderabad*); *Mohammed Zafar Ali Khan* (*Indian Institute of Technology*); *Amit Kumar Mishra* (*University of Cape Town*);

22 An Improved Successive-cancellation Decoding Algorithm for Polar Code Based on FPGA
Yi Chen (*Tongji University*); *Zi Wei Xia* (*Tongji University*); *Ling Yi Tang* (*Tongji University*); *Guo Chun Wan* (*Tongji University*); *Mei Song Tong* (*Tongji University*);

23 Study of NLMS Algorithm Used in the Cancellation of Navigation Interference in the $\boldsymbol{H_I}$ Observation
Zhan Wang (*National University of Defense Technology*); *Shuang-Xun Li* (*National University of Defense Technology*);

24 Improved Electromagnetic Compatibility Design for Printed Circuit Board of Automobile Atmosphere Lamp
Chen Chen Chen (*Tongji University*); *Zi Wei Xia* (*Tongji University*); *Guo Chun Wan* (*Tongji University*); *Mei Song Tong* (*Tongji University*);

25 Next Approach of HEMS WPT
Takashi Yoshikawa (*Kindai University Technical College*); *Yuuki Kamuro* (*Kindai University Technical College*);

26 3-Dimensional Trap Split in Nonlinear Optical Trapping of Gold Nanoparticles
Lu Huang (*Institute of Genetics and Developmental Biology, Chinese Academy of Sciences*); *Yunfeng Jin* (*South China Normal University*); *Hao Shi* (*Institute of Genetics and Developmental Biology, Chinese Academy of Sciences*); *Yaqiang Qin* (*Institute of Genetics and Developmental Biology, Chinese Academy of Sciences*); *Liantuan Xiao* (*Shanxi University*); *Yuqiang Jiang* (*Institute of Genetics and Developmental Biology, Chinese Academy of Sciences*);

27 Numerical Study of Hyperthermia Applicator System for Tumor Treatment in Head and Neck Region
Ondrej Fiser (*Czech Technical University in Prague*); *Ilja Merunka* (*Czech Technical University in Prague*); *Jan Vrba* (*Czech Technical University in Prague*);

28 An Interference EMG Model of Selected Water Samples
Pavel Fiala (*Brno University of Technology*); *K. Bartusek* (*Brno University of Technology*); *Tibor Bachorec* (*Brno University of Technology*); *Premysl Dohnal* (*Brno University of Technology*);

29 The Dispersion Properties of 3D Nonlinear Woodpile Plasma Photonic Crystals
Hai Feng Zhang (*Nanjing University of Aeronautics and Astronautics*); *Yong-Diao Wen* (*Nanjing University of Aeronautics and Astronautics*); *Ling-Ling Wang* (*Nanjing University of Aeronautics and Astronautics*);

30 Algorithms for Flying Object Detection
Jiri Janousek (*Brno University of Technology*); *Josef Novotny* (*Brno University of Technology*); *Petr Marcon* (*Brno University of Technology*); *Anna Siruckova* (*Saint Leo University*); *Radim Kadlec* (*Brno University of Technology*);

31 Formation of Ray Trajectories of HF Radiowaves in Midlatitude and Highlatitude Ionosphere during Halloween Storm 2003 According to Radiotomography Data
Elena S. Andreeva (*M. V. Lomonosov Moscow State University*); *I. A. Nesterov* (*M. V. Lomonosov Moscow State University*); *M. O. Nazarenko* (*M. V. Lomonosov Moscow State University*); *A. M. Padokhin* (*Lomonosov Moscow State University*); *Nikita Alekseyevich Tereshin* (*Lomonosov Moscow State University*); *M. A. Annenkov* (*M. V. Lomonosov Moscow State University*);

32 X_ CO2 Retrieval from OCO-2 Using the Yonsei Carbon Retrieval Algorithm
Jaemin Hong (*Yonsei University*); *Yeonjin Jung* (*Harvard-Smithsonian Center for Astrophysics*); *Woogyoung Kim* (*Goddard Space Flight Center, National Aeronautics and Space Administration*); *Jhoon Kim* (*Yonsei University*); *Harmut Boesch* (*University of Leicester*); *Tae-Young Goo* (*National Institute of Meteorological Sciences*);

33 Multiple-bounce Modeling of High-rise Buildings with Airborne Tomography Array
Ruichang Cheng (*Institute of Electronics, Chinese Academy of Science*); *Xingdong Liang* (*Institute of Electronics, Chinese Academy of Sciences*); *Fubo Zhang* (*Institute of Electronics, Chinese Academy of Sciences*); *Long-Yong Chen* (*Institute of Electronics, Chinese Academy of Sciences*);

34 Estimation of Spatial Structure of Sporadic E Layer Observed by Sounding Rocket with 2-dimensional FDTD Simulations
Taketoshi Miyake (*Toyama Prefectural University*); *Koshiro Minami* (*Toyama Prefectural University*); *Keigo Ishisaka* (*Toyama Prefectural University*);

35 Active and Passive Remote Sensing on Lightning and Precipitation Activities around Toyama Bay, Japan
Takeshi Morimoto (*Kindai University*); *Makoto Tojyo* (*Kindai University*); *Yoshitaka Nakamura* (*Kobe City College of Technology*); *Fumiya Beniya* (*University of Toyama*); *Hideo Sakai* (*University of Toyama*); *Masahito Shimizu* (*Chubu Electric Power Co., Inc.*); *Kodai Nagata* (*Chubu Electric Power Co., Inc.*);

36 The Study of Composite Scattering from the Target over a Randomly Rough Surface Using SAR/ISAR Imaging
Pengcheng Gao (*Shanghai Key Laboratory of Electromagnetic Environmental Effects for Aerospace Vehicle*); *Zichang Liang* (*Science and Technology on Electromagnetic Scattering Laboratory*); *Dandan Gu* (*Science and Technology on Electromagnetic Scattering Laboratory*); *Ming Feng* (*Science and Technology on Electromagnetic Scattering Laboratory*);

37 Scattering Characteristics of Vortex Electromagnetic Waves for a Wedge
Xiangxi Bu (*Institute of Electronics, Chinese Academy of Sciences*); *Xingdong Liang* (*Institute of Electronics, Chinese Academy of Sciences*); *Zhuo Zhang* (*Institute of Electronics, Chinese Academy of Sciences*); *Long-Yong Chen* (*Institute of Electronics, Chinese Academy of Sciences*); *Haibo Tang* (*Institute of Electronics, Chinese Academy of Sciences*); *Zheng Zeng* (*Institute of Electronics, Chinese Academy of Sciences*);

38 Scattering of Infrared Light by Charged Microparticles with Dynamic Properties Induced by Varying Electric Fields
Tatsuki Hangai (*The University of Shiga Prefecture*); *Manami Iga* (*The University of Shiga Prefecture*); *Shigeyuki Miyagi* (*The University of Shiga Prefecture*); *Osamu Sakai* (*The University of Shiga Prefecture*);

39 Application of the RK4IP Method for the Numerical Study of Noise-like Pulses in Supercontinuum Generation
Juan C. Hernandez-Garcia (*Universidad de Guanajuato*); *Julian M. Estudillo-Ayala* (*Universidad de Guanajuato*); *Olivier Pottiez* (*Centro de Investigaciones en Optica*); *Jesus P. Lauterio-Cruz* (*Universidad de Guanajuato*); *Jose D. Filoteo-Razo* (*Universidad de Guanajuato*); *Jose R. Martinez-Angulo* (*Universidad de Guanajuato*); *Carlos M. Carrillo-Delgado* (*Universidad de Guanajuato*); *Daniel Jaregui-Vazquez* (*Universidad de Guanajuato*); *Juan M. Sierra-Hernandez* (*Universidad de Guanajuato*); *Roberto Rojas-Laguna* (*University of Guanajuato*);

40 Numerical Analysis of Chaotic Dynamics Produced in a Photonic Crystal Fibers
Jose D. Filoteo-Razo (*Universidad de Guanajuato*); *Juan C. Hernandez-Garcia* (*Universidad de Guanajuato*); *Julian M. Estudillo-Ayala* (*Universidad de Guanajuato*); *Olivier Pottiez* (*Centro de Investigaciones en Optica*); *Jesus P. Lauterio-Cruz* (*Universidad de Guanajuato*); *Carlos M. Carrillo-Delgado* (*Universidad de Guanajuato*); *Jose R. Martinez-Angulo* (*Universidad de Guanajuato*); *Daniel Jaregui-Vazquez* (*Universidad de Guanajuato*); *Juan M. Sierra-Hernandez* (*Universidad de Guanajuato*); *Roberto Rojas-Laguna* (*University of Guanajuato*);

41 Precise Measurement of Complex Permittivity for High-k Dielectrcs and Liquids
Hsien-Wen Chao (*National Tsing Hua University*); *Yen-Ren Chen* (*National Tsing-Hua University*); *Tsun-Hun Chang* (*National Tsing Hua University*);

42 Ultra-broadband Metasurface Absorbers
Tomoyuki Nakasha (*Nagoya Institute of Technology*); *K. Asano* (*Nagoya Institute of Technology*); *D. Ushikoshi* (*Nagoya Institute of Technology*); *J. Long* (*University of California*); *D. F. Sievenpiper* (*University of California*); *Hiroki Wakatsuchi* (*Nagoya Institute of Technology*);

43 Analysis of High-speed Moving Metamaterials Using the Lorentz-FDTD Method
Yan Zhao (*Chulalongkorn University*); *S. Chaimool* (*Chulalongkorn University*);

44 Optical Bistability in Nonlocal Core-shell Structure
Yang Huang (*Jiangnan University*); *Wenping Fan* (*Jiangnan University*); *Lei Gao* (*Soochow University*);

45 A Novel Metamaterial Rasorber Based on Three-dimensional Structure
Ling-Ling Wang (*Nanjing University of Aeronautics and Astronautics*); *Hai Feng Zhang* (*Nanjing University of Posts and Telecommunications*); *Yong-Diao Wen* (*Nanjing University of Aeronautics and Astronautics*); *Wenyu Li* (*Nanjing University of Aeronautics and Astronautics*);

46 Surface Waves on Hyperbolic Metamaterials
Ruey-Lin Chern (*National Taiwan University*);

47 Application of Finite-difference Frequency-domain Method to Study Photonic Crystals and Metamaterial Composites
Takamichi Terao (*Gifu University*);

48 Design of Dual-band Waveform-selective Metasurfaces
Daisuke Nita (*Nagoya Institute of Technology*); *K. Asano* (*Nagoya Institute of Technology*); *D. Ushikoshi* (*Nagoya Institute of Technology*); *Hiroki Wakatsuchi* (*Nagoya Institute of Technology*);

49 Manipulation of Microwave Propagation in and around Cylindrical Plasma with Additional Anisotropic Layers
Yuki Kabe (*The University of Shiga Prefecture*); *Syuhei Yamaguchi* (*The University of Shiga Prefecture*); *Alexandre Bambina* (*The University of Shiga Prefecture*); *Akinori Iwai* (*Kyoto University*); *Shigeyuki Miyagi* (*The University of Shiga Prefecture*); *Osamu Sakai* (*The University of Shiga Prefecture*);

50 Classification and Properties of Modes in Bragg Fibers
Tongqing Liao (*Anhui University*); *Chuan-Feng Zhang* (*Anhui University*); *Tiezhen Jiang* (*Anhui University*); *Pei-Jun Cai* (*Jianghuai College of Anhui University*);

51 Ultrasensitive Detection of Gaseous Compounds Using Cavity Enhanced Laser Spectroscopy
Jacek Wojtas (*Military University of Technology*); *Zbigniew Bielecki* (*Military University of Technology*); *T. Stacewicz* (*Military University of Technology*); *J. Mikolajczyk* (*Military University of Technology*); *Beata Rutecka* (*Military University of Technology*); *Dariusz Szabra* (*Military University of Technology*); *Miroslaw Nowakowski* (*Military University of Technology*); *A. Prokopiuk* (*Military University of Technology*); *R. Medrzycki* (*Military University of Technology*);

52 Inverse Synthetic Aperture Ladar Imaging Algorithm for Space Maneuvering Target Using Synchrosqueezing Short-time Fourier Transform
Yakun Lv (*Space Engineering University*); *Yanhong Wu* (*Space Engineering University*); *Hongyan Wang* (*Space Engineering University*); *Lei Qiu* (*Space Engineering University*);

53 Radio-optical Wireless Communications
Janusz Mikolajczyk (*Military University of Technology*); *Dariusz Szabra* (*Military University of Technology*); *Zbigniew Bielecki* (*Military University of Technology*); *Jacek Wojtas* (*Military University of Technology*);

54 Analysis of Spectrum Properties of Integrated Optical Chips Applied on IFOG
Junjie Yao (*Zhejiang University*); *Ke Li* (*Zhejiang University*); *Bei Li* (*Zhejiang University*); *Chenge Wang* (*Zhejiang University*); *Kan Chen* (*Zhejiang University*); *Xuan She* (*Zhejiang University*);

55 A Flower Shaped ACS Fed Printed Antenna for Advanced Portable Systems
Praveen Vummadisetty Naidu (*JNT University Kakinada — Velagapudi Ramakrishna Siddhartha Engineering College*); *Arvind Kumar* (*Kautilya Institute of Technology and Engineering*); *M. Siva Charan* (*Velagapudi Ramakrishna Siddhartha Engineering College*); *Dinesh Sharma* (*Sri Vasavi Engineering College*); *Purnima Sharma* (*Sri Vasavi Engineering College*);

56 Semi Circular Printed Monopole Antenna with **ʊ** Shaped Slot for UWB Applications
Praveen Vummadisetty Naidu (*JNT University Kakinada — Velagapudi Ramakrishna Siddhartha Engineering College*); *Dinesh Sharma* (*Sri Vasavi Engineering College*); *Arvind Kumar* (*Kautilya Institute of Technology and Engineering*); *R. Rohini* (*V. R. S. E College (Autonomous)*); *Purnima Sharma* (*Sri Vasavi Engineering College*);

57 Design of 5 Way Wide Band Wilkinson Power Divider for 6 to 18 GHz Applications
Praveen Vummadisetty Naidu (*JNT University Kakinada — Velagapudi Ramakrishna Siddhartha Engineering College*); *M. Siva Charan* (*Velagapudi Ramakrishna Siddhartha Engineering College*); *Arvind Kumar* (*Kautilya Institute of Technology and Engineering*); *Dinesh Sharma* (*Sri Vasavi Engineering College*); *Purnima Sharma* (*Sri Vasavi Engineering College*); *Komanduri Sai Harish* (*Velagapudi Ramakrishna Siddhartha Engineering College*);

58 Magneto-optical Properties of a Magnetic Fluid in the THz Frequency Range
Denis Olegovich Zyatkov (*National Research Tomsk State University*); *Vladimir Borisovich Balashov* (*Research Institute of Semiconductor Devices*); *Alexey Vladimirovich Borisov* (*National Research Tomsk State University*); *Anastasia Knyazkova* (*National Research Tomsk State University*); *Viktor Nikolayevich Cherepanov* (*National Research Tomsk State University*); *Basil Yurchenko* (*Research Institute of Semiconductor Devices*);

59 Dual-gas Sensor Based on Frequency Division Multiplexing Technique of Quartz Tuning Fork
Hongpeng Wu (*Shanxi University*); *Lei Dong* (*Shanxi University*); *Shangzhi Li* (*Shanxi University*); *Ruyue Cui* (*Shanxi University*); *Frank K. Tittel* (*Rice University*);

60 The Research of Pre-processing VDIF Data in FPGA
Jiangying Gan (*Shanghai Astronomical Observatory, Chinese Academy of Science*); *Zhijun Xu* (*Shanghai Astronomical Observatory, Chinese Academy of Science*);

61 Enhanced In Vivo Photoacoustic Imaging for Glioma with Biocompatible Targeted Dye-protein Complex
Ronghe Chen (*Xiamen University*); *Wenjun Shan* (*Xiamen University*); *Lei Ren* (*Xiamen University*); *Liming Nie* (*Xiamen University*);

62 A Compact MIMO Antenna for UWB Applications
Abdullah Madni (*Information Technology University (ITU)*); *Muhammad Qasim Mehmood* (*Information Technology University (ITU)*); *Muhammad Zubair* (*Information Technology University (ITU)*); *Ahsan Sarwar Rana* (*Information Technology University (ITU)*); *Muhammad Rizwan Akram* (*Shanghai Jiao Tong University*);

Session 3A1
Advances in Quantitative Land Remote Sensing

Friday AM, August 3, 2018
Room T1
Organized by Shunlin Liang
Chaired by Shunlin Liang

08:30 Estimations of Land Surface Parameters from MODIS Optical-thermal Observations Based on Data Assimilation and Radiative Transfer Theory
Han Ma (*Beijing Normal University*); *Shunlin Liang* (*University of Maryland*);

08:50 A Case Study on Pixel-by-pixel Radiometric Normalization between Sentinel-2A and Landsat-8 OLI
Yuwen Xu (*Institute of Remote Sensing and Digital Earth, Chinese Academy of Science*); *Hao Zhang* (*Institute of Remote Sensing and Digital Earth, CAS*); *Zhengchao Chen* (*Institute of Remote Sensing and Digital Earth, CAS*); *Haitao Jing* (*Henan Polytechnic University*);

09:10 A Cloud Removal Methodology for MODIS 16-day and 8-day Products Using Time Series Interpolation
Nguyen Thanh Hoan (*Institute of Geography, Vietnam Academy of Science and Technology*); *Ryutaro Tateishi* (*Chiba University*);

09:50 Generating the Global Climate Data Records from Satellite Data
Shunlin Liang (*University of Maryland*); *Shihao Tang* (*National Satellite Meteorological Center, CMA*); *Jie Zhang* (*First Institute of Oceanography of State Oceanic Administration*); *Bing Xu* (*Tsinghua University*); *Jie Cheng* (*Beijing Normal University*); *Xiao Cheng* (*Beijing Normal University*); *Peng Gong* (*Tsinghua University*); *Kun Jia* (*Beijing Normal University*); *Bo Jiang* (*Beijing Normal University*); *Ainong Li* (*Institute of Mountain Hazards and Environment, Chinese Academy of Sciences*); *Suhong Liu* (*Beijing Normal University*); *Hong Qiu* (*National Satellite Meteorological Center, CMA*); *Zhiqiang Xiao* (*Beijing Normal University*); *Xianhong Xie* (*Beijing Normal University*); *Jun Yang* (*Tsinghua University*); *Jungang Yang* (*First Institute of Oceanography, SOA*); *Yunjun Yao* (*Beijing Normal University*); *Guirui Yu* (*Institute of Geographic Sciences and Natural Resources Research, Chinese Academy of Sciences*); *Xiaotong Zhang* (*Beijing Normal University*); *Xiang Zhao* (*Beijing Normal University*);

10:10 Estimating Global Land Surface Downward Shortwave Radiation Using Moderate Resolution Imaging Spectroradiometer (MODIS) Data
Xiaotong Zhang (*Beijing Normal University*); *Yu Wei* (*Beijing Normal University*); *Shunlin Liang* (*University of Maryland*);

10:40 **Coffee Break**

Session 3A2
FocusSession.SC5: Microwave Scattering Modelling and Remote Sensing Theory

Friday AM, August 3, 2018

Room T2

Organized by Hong Tat Ewe, Yang Du

Chaired by Yang Du

08:30 Bistatic Scattering Response in Delay-doppler Map of GNSS-R Returns from Ocean Surface
Yu Liu (*Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences*); *Kun-Shan Chen* (*Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences*); *Zhen Xu* (*Institute of Remote Sensing and Digital Earth, Chinese Academy of Science*); *Zhao-Liang Li* (*Institute of Agricultural Resources and Regional Planning, Chinese Academy of Agricultural Sciences*);

08:50 Polarized Scattering from an Anisotropically Rough Inhomogeneous Layered Media
Ying Yang (*Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences*); *Kun-Shan Chen* (*Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences*);

09:10 Practical Implementation of the E-pulse Technique on the Original Antiquates
Haythem Hussein Abdullah (*Electronics Research Institute (ERI)*); *Ahmed B. Musa* (*Electronics Research Institute (ERI)*); *Tamer Gaber Abulnaga* (*Electronics Research Institute*); *Hala A. Elsadek* (*Electronics Research Institute*);

09:30 Understanding the Correlation in Scattering Mechanisms between H-Alpha Decomposition and Theoretical Modelling
Luke Lee Chee Chien (*Universiti Tunku Abdul Rahman*); *Hong Tat Ewe* (*Universiti Tunku Abdul Rahman*); *Seow Hui Saw* (*Universiti Tunku Abdul Rahman*);

09:50 Theoretical Modelling Study on MVI Derivation in Multangular Observation Systems
Somayeh Talebi (*Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences*); *Jian-Cheng Shi* (*Institute of Remote Sensing Applications, Chinese Academy of Sciences*); *Tianjie Zhao* (*Jointly Sponsored by Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences*);

10:10 Physically Based Polarimetric Scattering from Vegetation Canopies
Yang Du (*Zhejiang University*); *Chao Yang* (*Zhejiang University*); *Qinhuo Liu* (*Institute of Remote Sensing Applications, Chinese Academy of Sciences*); *Zengyuan Li* (*Research Institute of Forest Resources Information Technique, Chinese Academy of Forestry*);

10:40 **Coffee Break**

Session 3A3
Advanced Mathematical and Computational Methods in Electromagnetic Theory and Their Applications 1

Friday AM, August 3, 2018

Room T3

Organized by Georgi Nikolov Georgiev, Mariana Nikolova Georgieva-Grosse

Chaired by Georgi Nikolov Georgiev

08:30 Orthogonal Phase Distortions in Apertures of Linear and Planar Phased Arrays with Different Amplitude Distributions
Vladlen I. Gusevsky (*National Research University*); *Olga N. Tsvetkova* (*NRU MPEI*);

08:50 An Integral Form of the Nonlinear Schrödinger Equation with Variable Coefficients
Erwin Suazo (*The University of Texas*); *Sergei K. Suslov* (*Arizona State University*);

09:10 Determination of Maximum Influence Zones in the Aperture Amplitude-phase Distribution on Radiation Pattern in the Far-field Radiation
Vladlen I. Gusevsky (*National Research University*); *Olga N. Tsvetkova* (*NRU MPEI*); *Alena V. Klementyeva* (*National Research University*);

09:30 Invited The Electromagnetic Resonant Vector and the Generalized Projection Operator
Juan Manuel Velazquez Arcos (*Universidad Autonoma Metropolitana*); *J. Granados-Samaniego* (*Universidad Autonoma Metropolitana*); *A. Cid-Reborido* (*Universidad Autonoma Metropolitana*); *C. A. Vargas* (*Universidad Autonoma Metropolitana*);

09:50 Invited Electromagnetic Fields Produced by Filamentary Sources for Stimulation of a Nerve Fiber
Vasiliy Alekseevich Es'kin (*University of Nizhny Novgorod*); *Alexander V. Kudrin* (*University of Nizhny Novgorod*); *A. A. Popova* (*University of Nizhny Novgorod*);

10:10 Invited Theorem for Existence and for the Number of Some Real Numbers
Mariana Nikolova Georgieva-Grosse (*Consulting and Researcher in Physics and Computer Sciences*); *Georgi Nikolov Georgiev* (*University of Veliko Tirnovo "St. St. Cyril and Methodius"*);

10:40 **Coffee Break**

Session 3A4
SC3: Modeling, Numerical Simulation and Theory in Optics and Photonics 1

Friday AM, August 3, 2018

Room T4

Organized by Yasuhide Tsuji, Jun Shibayama

Chaired by Yasuhide Tsuji, Jun Shibayama

08:30 Slowly Varying Envelope Approximation Based Finite Element Method for Efficient Topology Optimization of Optical Devices
T. Tanaka (*Muroran Institute of Technology*); *Yasuhide Tsuji* (*Muroran Institute of Technology*);

08:50 The Fast Quasiadiabatic Approach to Optical Waveguide Design
Hung-Ching Chung (*National Cheng Kung University*); *Zhong-Ying Li* (*National Cheng Kung University*); *Kun-Sheng Lee* (*National Cheng Kung University*); *Shuo-Yen Tseng* (*National Cheng Kung University*);

09:10 Longitudinal Temperature Distribution inside Active Optical Fiber in Lasing Condition
Nikita Voronkov (*Kotelnikov Institute of Radio Engineering and Electronics of RAS*); *Victor Sypin* (*Moscow Institute of Physics and Technology*); *Oleg A. Ryabushkin* (*State University*);

09:30 Metal Films with Subwavelength Holes: Optical Properties in the Scope of Nonlocal Charge Carrier Dynamics
Christin David (*Madrid Institute for Advanced Studies in Nanoscience (IMDEA Nanoscience)*); *J. Christensen* (*Universidad Carlos III de Madrid*); *N. A. Mortensen* (*University of Southern Denmark*);

09:50 Polarization Conversion Properties of a Metallic Waveplate
J. Yamauchi (*Hosei University*); *Shunsuke Yoshino* (*Hosei University*); *H. Baba* (*Hosei University*); *H. Nakano* (*Hosei University*);

10:10 Comparison of Various Linearly Polarized Mode Approximations of the Optical Fiber
Po-Jen Sung (*National Sun Yat-Sen University*); *Sin-Yuan Mu* (*National Sun Yat-Sen University*); *Hung-Wen Chang* (*National Sun Yat-Sen University*);

10:40 **Coffee Break**

Session 3A5
Resonators, Filters, Transmission Lines and Waveguide

Friday AM, August 3, 2018

Room T5

Chaired by Cun-Jun Ruan

08:30 Miniaturization of EBG Unit Cell to Suppress Noise Propagation by Dual Power Planes and Narrow Line
Yoshitaka Toyota (*Okayama University*); *Xingxiaoyu Lin* (*Okayama University*); *Kengo Iokibe* (*Okayama University*); *Toshiyuki Kaneko* (*Okayama University*);

08:50 Microwave Gas Sensor Using PSE-coated Interdigital Resonator on CPW Structure
Warunee Krudpun (*King Mongkut's University of Technology North Bangkok*); *Nattapong Duangrit* (*King Mongkut's University of Technology North Bangkok*); *Panida Lorwongtragool* (*Rajamangala University of Technology Suvarnabhumi*); *Somporn Seewattanapon* (*Rajamangala University of Technology Suvarnabhumi*); *Prayoot Akkaraekthalin* (*King Mongkut's University of Technology North Bangkok*);

09:10 An X-band Waveguide Jig for Pre-screening Testing of Fully-integrated Elementary Phased-array Transceiver Antenna-in-package
Li-Han Chang (*National Chiao-Tung University*); *Chien Cheng Wang* (*National Chiao Tung University*); *Yue Ming Wu* (*National Tsing Hua University*); *Ta-Shun Chu* (*Univ So Calif*); *Yu-Jiu Wang* (*National Chiao-Tung University*);

09:30 Fabrication and Analysis of Tantalum Pentoxide Optical Waveguide Resonator with High Thermal Stability
A. K. Chu (*National Sun Yat-sen University*); *Yu-Yan Lu* (*National Sun Yat-sen University*); *Yuan-Yao Lin* (*National Sun Yat-sen University*);

09:50 High $\boldsymbol{Q}$ Dual Band Super High Frequency Notch Filter Based on Complementary Metamaterial
Tanveer Ul Haq (*Beihang University*); *Cun-Jun Ruan* (*Beihang University*); *Ruochen Wang* (*Beihang University*); *Tianyi Wu* (*Beihang University*);

10:10 Design of Ku-band Circular Waveguide-to-coaxial Adapter
Kihoon Park (*Sogang University*); *Jinho Jeong* (*Sogang University*);

10:40 **Coffee Break**

Session 3A6
SC1: Analytical and Numerical Treatment in Electromagnetics and Its Application

Friday AM, August 3, 2018

Room T6

Organized by Akira Matsushima, Masahiko Nishimoto

Chaired by Akira Matsushima, Masahiko Nishimoto

08:30 Derivation and Simulation of Orbital Angular Momentum Transfer from Laser to X-Gamma Rays in Inverse Compton Scattering
Huan Wang (*Université Paris-Saclay*); *Aurelien Martens* (*Universite Paris-Sud*); *Loic Amoudry* (*Université Paris-Saclay*); *Kevin Cassou* (*Universite Paris-Sud*); *Kevin Dupraz* (*Universite Paris-Sud*); *Daniele Nutarelli* (*Universite Paris-Sud*); *Wenhui Huang* (*Tsinghua University*); *Chuanxiang Tang* (*Tsinghua University*); *Lixin Yan* (*Tsinghua University*); *Fabian Zomer* (*Universite Paris 11*);

08:50 Polarization Dependence of Electromagnetic Wave Scattering by a Conducting Cylinder Covered with Inhomogeneous Lossy Dielectric
Masahiko Nishimoto (*Kumamoto University*);

09:10 Fundamental Properties of Sharply Bends Constructed by Two-dimensional MDM Plasmonic Waveguide
Yoshihiro Naka (*Khushu University of Helth and Welfare*); *Masahiko Nishimoto* (*Kumamoto University*);

09:30 SSMR Preconditioned Linear Iterative Solvers for Electromagnetic Simulations
Norimasa Nakashima (*Fukuoka Institute of Technology*); *Seiji Fujino* (*Kyushu University*);

09:50 Validity of the Impedance Boundary Conditions in the Scattering and Absorption of Light by Two-dimensionally Corrugated Noble Metal Films
Akira Matsushima (*Kumamoto University*); *Yuki Sakuragi* (*Kumamoto University*);

10:40 **Coffee Break**

Session 3A7
SC2: Advances in Metasurfaces 2

Friday AM, August 3, 2018

Room T7

Organized by Shulin Sun, Qiong He

Chaired by Shulin Sun, Xiang Xiong

08:30 Invited Electromagnetic Impurity-immunity Based on Parity-time Symmetric Metasurfaces
Jie Luo (*Soochow University*); *Jensen Li* (*University of Brimingham*); *Yun Lai* (*Soochow University*);

08:50 Invited Selective Propagation and Polarized Light Excitation by Focused Electron Beam
Xiang Xiong (*Nanjing University*); *Y. H. Hu* (*Nanjing University*); *Z. H. Wang* (*Nanjing University*); *Mu Wang* (*Nanjing University*); *Ru-Wen Peng* (*Nanjing University*);

09:10 Optical Activity Enhancement of Free-standing Chiral Metasurface by a Transmitted Electron Beam Lithography
Invited
Bingrui Lu (*Fudan University*); *Zongyao Yang* (*Fudan University*); *Jianan Deng* (*Fudan University*); *Sichao Zhang* (*Fudan University*); *Yifang Chen* (*Fudan University*);

09:30 Inverse Method for Determining Novel Geometric Topology of Photonic Nanostructure
Invited
Yongbo Deng (*Changchun Institute of Optics, Fine Mechanics and Physics (CIOMP), Chinese Academy of Sciences*); *Y. Wu* (*Changchun Institute of Optics, Fine Mechanics and Physics (CIOMP), Chinese Academy of Sciences (CAS)*);

09:50 Bifunctional Gap-plasmon Metasurfaces for Visible Light
Invited
Fei Ding (*University of Southern Denmark*); *Rucha Deshpande* (*University of Southern Denmark*); *Sergey I. Bozhevolnyi* (*University of Southern Denmark*);

10:10 High-efficiency Generation of Bessel Beams with Transmissive Metasurfaces
Zhuo Wang (*Fudan University*); *Shaohua Dong* (*Fudan University*); *Weijie Luo* (*Fudann University*); *Min Jia* (*Fudan University*); *Zhongzhu Liang* (*Changchun*); *Qiong He* (*Fudan University*); *Shulin Sun* (*Fudan University*); *Lei Zhou* (*Fudan University*);

10:40 **Coffee Break**

Session 3A8
SC2: Theory and Applications of Anisotropic and Bianisotropic Metamaterials 2

Friday AM, August 3, 2018

Room T8

Organized by Liang Peng, Yuntian Chen

Chaired by Liang Peng, Yuntian Chen

08:30 Actively Tunable Directional Excitation of Highly Squeezed Polaritons in Graphene-*h*BN Heterostructures
Yuyu Jiang (*Zhejiang University*); *Xiao Lin* (*Nanyang Technological University*); *Tony Low* (*University of Minnesota*); *Baile Zhang* (*Nanyang Technological University*); *Hongsheng Chen* (*Zhejiang University*);

08:50 Loss-free Broadband Wave Manipulation and Metadevice Designs with Infinitely Anisotropic Metamaterials
Su Xu (*Jilin University*); *Jian-Bin Liu* (*Jilin University*); *Jia-Wei Li* (*Jilin University*); *Hong-Bo Sun* (*Jilin University*);

09:10 Spin-dependent Absorption and Wavefront Control in Chiral Metamirrors
Zuojia Wang (*Shandong University*); *Liqiao Jing* (*Zhejiang University*); *Hongsheng Chen* (*Zhejiang University*);

09:30 Generalized Coupled Mode Formalism in Reciprocal Waveguides with Gain/Loss, Anisotropy or Bianisotropy
Weijin Chen (*Huazhong University of Science and Technology*); *Zhongfei Xiong* (*Huazhong University of Science and Technology*); *Jing Xu* (*Huazhong University of Science and Technology*); *Yuntian Chen* (*Huazhong University of Science and Technology*);

09:50 Orbital Angular Momentum Generation Using a Bifunctional Pancharatnam-Berry Metasurface
Jin Yang (*Southeast University*); *Qiang Cheng* (*Southeast University*);

10:40 **Coffee Break**

Session 3A9
FocusSession.SC2: Advances in Nanolasers 1

Friday AM, August 3, 2018

Room A1

Organized by Renmin Ma, Qing Zhang

Chaired by Renmin Ma

08:30 Miniature Lasers: Spasers and Beyond
Keynote
Mikhail A. Noginov (*Norfolk State University*);

09:00 Surface-plasmon Enhanced ZnO WGM Lasing
Invited
Chunxiang Xu (*Southeast University*); *Qiuxiang Zhu* (*Southeast University*); *Feifei Qin* (*Southeast University*); *Yanjun Liu* (*Southeast University*); *Daotong You* (*Southeast University*); *Zengliang Shi* (*Southeast University*);

09:20 One-dimensional Surface Plasmon Polariton Nanolasers and Arrays
Invited
Tien-Chang Lu (*National Chiao Tung University*);

09:40 Strong Exciton-Photon Coupling in Perovskite Microcavities
Invited
Shuai Zhang (*National Center for Nanoscience and Technology*); *Wenna Du* (*National Center for Nanoscience and Technology*); *Yang Mi* (*National Center for Nanoscience and Technology*); *Xinfeng Liu* (*National Center for Nanoscience and Technology*);

10:00 Self-focused Plasmonic Lasing beyond the Anderson Localization Regime
Invited
Yu-Jung Lu (*National Tsing-Hua University*); *Chun-Yuan Wang* (*National Tsing-Hua University*); *Chih-Shan Tan* (*National Tsing-Hua University*); *Hung-Ying Chen* (*National Tsing-Hua University*); *Chang-Wei Cheng* (*National Tsing-Hua University*); *Lih-Juann Chen* (*National Tsing-Hua University*); *Shangjr Gwo* (*National Tsing-Hua University*);

10:20 Subwavelength Scale Low Loss Semiconductor Nanocavities near Metal
Invited
Ning Liu (*University of Limerick*); *Christophe Silien* (*University of Limerick*); *Greg Sun* (*University of Massachusetts Boston*); *Brian Corbett* (*Tyndall National Institute*);

10:40 **Coffee Break**

Session 3A10
FocusSession.SC3: Advanced Nano/Quantum Photonic Technologies 2

Friday AM, August 3, 2018

Room A2

Organized by Jin Liu, Juntao Li

Chaired by Jin Liu, Juntao Li

08:30 Non-classical Light Emission of Deterministically Fabricated Quantum Dot-Microlenses
Invited
A. Thoma (*Technische Universität Berlin*); *S. Fischbach* (*Technische Universität Berlin*); *P. Schnauber* (*Technische Universität Berlin*); *A. Kaganskiy* (*Technische Universität Berlin*); *M. Von Helversen* (*Technische Universität Berlin*); *M. Schmidt* (*Technische Universität Berlin*); *S. Burger* (*Zuse-Institut Berlin (ZIB)*); *F. Schmidt* (*Zuse-Institut Berlin (ZIB)*); *A. Strittmatter* (*Technische Universität Berlin*); *J. Beyer* (*Physikalisch Technische Bundesanstalt*); *S. Bounouar* (*Technische Universität Berlin*); *A. Carmele* (*Technische Universität Berlin*); *A. Knorr* (*Technische Universität Berlin*); *T. Heindel* (*Technische Universität Berlin*); *S. Rodt* (*Technische Universität Berlin*); *Stephan Reitzenstein* (*Technische Universitat Berlin*);

08:50 Recent Progress on Semiconductor Entangled Photon Sources
Invited
Fei Ding (*Leibniz University Hannover*);

09:10 Actively Spectral-multiplexed Heralded Single Photons Source
Invited
Qiang Zhou (*University of Electronic Science and Technology of China*); *M. G. Puigibert* (*University of Calgary*); *G. H. Aguilar* (*University of Calgary*); *M. D. Shaw* (*California Institute of Technology*); *V. Verma* (*National Institute of Standards and Technology*); *F. Marsili* (*California Institute of Technology*); *Sae Woo Nam* (*National Institute of Standards and Technology*); *D. Oblak* (*University of Calgary*); *Wolfgang Tittel* (*University of Calgary*);

09:30 Selective Far-field Addressing of Quantum Dots in a Plasmonic Nanocavity
Invited
Jianwei Tang (*Zhejiang University*); *Juan Xia* (*Zhejiang University*); *Maodong Fang* (*South China Normal University*); *Fanglin Bao* (*South China Normal University*); *Guanjun Cao* (*South China Normal University*); *Jian Qi Shen* (*Zhejiang University*); *Julian Evans* (*Zhejiang University*); *Sailing He* (*Zhejiang University*);

09:50 Single Quantum Dot Emitters with Plasmon-tailored Excitation Spectra: From Enhancement to Suppression
Juan Xia (*Zhejiang University*); *Guanjun Cao* (*South China Normal University*); *Jianwei Tang* (*Zhejiang University*);

10:10 Highly Brightness and Purity Single Photons Generated from Quantum Dot in Micropillar under Enhanced Up-conversion Excitation
Shunfa Liu (*Sun Yat-sen University*); *Rongling Su* (*Sun Yat-sen University*); *Yuming Wei* (*Sun Yat-sen University*); *Ying Yu* (*Sun Yat-sen University*); *Jin Liu* (*Sun Yat-Sen University*); *Xue-Hua Wang* (*Sun Yat-Sen University*); *Siyuan Yu* (*Sun Yat-sen University*);

10:40 **Coffee Break**

Session 3A11
New Advances in Light Scattering by Particles in the Micron and sub-Micron Regimes 1

Friday AM, August 3, 2018

Room A3

Organized by Jose Maria Saiz Vega, Matthew J. Berg

Chaired by Jose Maria Saiz Vega, Matthew J. Berg

08:30 The Quest of Directional Light Scattering
Invited
Braulio Garcia-Camara (*Carlos III University of Madrid*); *R. Vergaz* (*Carlos III University of Madrid*); *J. F. Algorri* (*Carlos III University of Madrid*); *E. López-Fraguas* (*Carlos III University of Madrid*); *M. H. Elshorbagy* (*Carlos III University of Madrid*); *A. Cuadrado* (*University Complutense of Madrid*); *J. M. Sanchez-Pena* (*Carlos III University of Madrid*);

08:50 Multi-functional Photonic crystals
Jingxia Wang (*Technical Institute of Physics and Chemistry, Chinese Academy of Sciences*);

09:10 Does Orbital Angular Momentum Have Effect on
Invited Laser's Scattering by Molecular Atmosphere?
Wenbo Sun (*Science Systems and Applications, Inc.*); *Yongxiang Hu* (*NASA Langely Research Center*); *Carl Weimer* (*Ball Aerospace and Technologies Corp*); *Weilin Hou* (*United States Naval Research Laboratory, Stennis Space Center*); *Tsengdar Lee* (*NASA Headquarters*); *Gorden Videen* (*Army Research Laboratory*); *Rosemary R. Baize* (*NASA Langely Research Center*);

09:30 Enhanced Thermal Emission by Spheres and
Invited Temperature-dependent Effects
Khac Long Nguyen (*Universite de Lyon, CNRS, INSA-Lyon, Universite Claude Bernard Lyon 1*); *Olivier Merchiers* (*Universite de Lyon, CNRS, INSA-Lyon, Universite Claude Bernard Lyon 1*); *Pierre-Olivier Chapuis* (*CNRS, National Institute of Applied Physics (INSA) Lyon*);

09:50 Modelling the Adherence of a Cell to a Flat Substrate
Invited through Polarimetric Methods Based on Mueller Matrix Formalism
A. Fernandez (*Universidad de Cantabria*); *Thomas Sang Hyuk Yoo* (*Université Paris-Saclay*); *J. L. Fernandez Luna* (*Unidad de Genética HUMV*); *F. Moreno* (*Universidad de Cantabria*); *Enric Garcia-Caurel* (*Université Paris-Saclay*); *Jose Maria Saiz Vega* (*Universidad de Cantabria*);

10:10 Application of High Performance Computing in the
Invited Light Scattering by Particles Larger than the Wavelength
Yevgen Grynko (*Paderborn University*); *Jens Forstner* (*Paderborn University*);

10:40 **Coffee Break**

Session 3A12
FocusSession.SC3: Photonic Nanostructures for Enhancing Light-matter Interaction 1

Friday AM, August 3, 2018

Room A4

Organized by Chia Chen Hsu

Chaired by Chia Chen Hsu, Hung-Chih Kan

08:30 Aluminum-based Nanostructures for Sensors with
Invited High Surface Sensitivity
Kuang-Li Lee (*Academia Sinica*); *Po Cheng Tsai* (*National Taiwan Ocean University*); *Meng-Lin You* (*Academia Sinica*); *Ming-Yang Pan* (*Academia Sinica*); *Pei-Kuen Wei* (*Academia Sinica*);

08:50 Large Enhancement of Effective Raman Susceptibil-
Invited ity of a Metasurface Made of Silicon Photonic Crystal Cavities
Qun Ren (*University College London*); *Jian Wei You* (*University College London*); *Nicolae-Coriolan Panoiu* (*University College London*);

09:10 Hybrid Dielectric Resonator + Nanoantenna Systems:
Keynote Principles, Detection Instruments, and Applications in Digital Resolution Biosensing
Jui-Nung Liu (*University of Illinois at Urbana-Champaign*); *Qinglan Huang* (*University of Illinois at Urbana-Champaign*); *Brian T. Cunningham* (*University of Illinois at Urbana-Champaign*);

09:40 Two Phase Detection Systems of Transmitted-type Guided-mode Resonance Sensors
Wen-Kai Kuo (*National Formosa University*); *Ning-Chi Huang* (*National Formosa University*); *Siang-He Syu* (*National Formosa University*);

09:45 Manipulation of the Optical Properites of SiO_2 opal with Metallatic Nanostructures and Dieletric Materials to Enhacce the Light Mater Interaction for Sensing Applications
Sheng-Hung Yang (*National Chun Chen University*); *Chen-Hung Chu* (*National Chun Chen University*); *Ti-Li Lin* (*National Chun Chen University*); *Hung-Chih Kan* (*National Chung Cheng University*);

10:00 Doping of Graphene for Optoelectronic Device Appli-
Invited cations
Suk-Ho Choi (*Kyung Hee University*);

10:40 **Coffee Break**

Session 3A13
Emerging Techniques for Optical Communication and Sensing 1

Friday AM, August 3, 2018

Room A5

Organized by Guo-Wei Lu, Zhenzhou Cheng

Chaired by Guo-Wei Lu, Tinghui Xiao

08:30 PPLN Based Frequency Mixer for Optical Signal Processing and Sensing Application
Invited
Masaki Asobe (*Tokai University*); *M. Katoh* (*Tokai University*); *S. Punhavan* (*Tokai University*); *K. Uchiyama* (*Tokai University*); *D. Ishikawa* (*Tokai University*);

08:50 Optical Angular Momentum Doubling of Optical Vortices in Telecommunication Bands
Invited
Junichi Hamazaki (*National Institute of Information and Communications Technology*); *Guo-Wei Lu* (*Tokai University*); *Keizo Inagaki* (*National Institute of Information and Communications Technology*); *Tadashi Kishimoto* (*National Institute of Information and Communications Technology*); *Yoh Ogawa* (*National Institute of Information and Communications Technology*); *Norihiko Sekine* (*National Institute of Information and Communications Technology*); *Akifumi Kasamatsu* (*National Institute of Information and Communications Technology*); *Naokatsu Yamamoto* (*National Institute of Information and Communications Technology*); *Shigeru Yamaguchi* (*Tokai University*); *Iwao Hosako* (*National Institute of Information and Communications Technology*);

09:10 Space and Time Division Packet Super-channel Switching System for Next Generation Data Center Networks
Invited
Jose Manuel Delgado Mendinueta (*National Institute of Information and Communications Technology (NICT)*); *Satoshi Shinada* (*National Institute of Information and Communications Technology (NICT)*); *Y. Hirota* (*National Institute of Information and Communications Technology (NICT)*); *R. S. Luis* (*National Institute of Information and Communications Technology (NICT)*); *H. Furukawa* (*National Institute of Information and Communications Technology (NICT)*); *Naoya Wada* (*National Institute of Information and Communications Technology (NICT)*);

09:30 Generation of Wide Frequency-spacing Optical Two-tone Signal Utilizing Polarization and Optical Phase Shift Induced by RF Phase
Invited
Akito Chiba (*Gunma University*); *Y. Akamatsu* (*Gunma University*); *Kazumasa Takada* (*Gunma University*);

09:50 Eavesdropping Detection Technique in Optical Communication Channels with Quantum Encryption
Vladimir Nikulin (*State University of New York at Binghamton*);

10:10 Polarimetric Imaging through Turbid Media
Invited
Haofeng Hu (*Tianjin University*); *Lin Zhao* (*Tianjin University*); *Xiaobo Li* (*Tianjin University*); *Tiegen Liu* (*Tianjin University*);

10:40 **Coffee Break**

Session 3A14
Advanced Photonic Technologies for Energy Harvesting 1

Friday AM, August 3, 2018

Room A6

Organized by Feng Yan, Gang Li

Chaired by Xu-Hui Zhu, Xuanhua Li

08:30 Two-dimensional Metal Chalcogenide Semiconductors: Design, Synthesis and Applications
Jun He (*National Center for Nanoscience and Technology*);

08:50 Enhanced Performance of Perovskite Solar Cells with Electron Transport Layer of SnO_2 Quantum Dots
Guojia Fang (*Wuhan University*); *Gang Li* (*Hong Kong Polytechnic University*);

09:10 High-performance Flexible Solar Cells: Device and Materials
Yaowen Li (*Soochow University*); *Yongfang Li* (*Soochow University*);

09:30 Interfacial Engineering for Efficient Perovskite Solar Cells
Xuanhua Li (*Northwestern Polytechnical University*); *Shuangjie Wang* (*Northwestern Polytechnical University*); *Tengteng Tong* (*Northwestern Polytechnical University*);

09:50 The Application of 2-D Materials in Organic or Hybrid Solar Cells
Feng Yan (*The Hong Kong Polytechnic University*);

10:40 **Coffee Break**

Session 3A15
Light Manipulation, Propagation and Application 1

Friday AM, August 3, 2018

Room A7

Organized by Yangjian Cai

Chaired by Yangjian Cai

08:30 Study on Mode Purity of Second-harmonic Waves from Twisted Nonlinear Photonic Crystals
Y. Chen (*Nanjing University*); *Y. D. Wu* (*Nanjing University*); *C. Lin* (*Nanjing University*); *Xiao Peng Hu* (*Nanjing University*); *Shi-Ning Zhu* (*Nanjing University*);

08:50 Optical Image Encryption and Authentication Based on Random Phase Encoding and Dielectric Metasurface
Chencheng Yao (*Zhejiang A&F University*); *Junlang Chen* (*Zhejiang A&F University*); *Yixiang Chen* (*Zhejiang University of Media and Communications*); *Xiaogang Wang* (*Zhejiang A&F University*);

09:10 Generation of a Large-scale Airy Beam at High Altitude by Adaptive Optics
Xiuxiang Chu (*Zhejiang Agriculture and Forestry University*); *Quan Sun* (*National University of Defence Technology*); *Jing Wang* (*Institute of Software, Chinese Academy of Sciences*); *Pin Lv* (*Institute of Software, Chinese Academy of Sciences*); *Xiaojun Xu* (*National University of DefenseTechnology (NUDT)*);

09:30 Self-reconstruction of Partially Coherent Beam
Yangjian Cai (*Soochow University*); *Xianlong Liu* (*Soochow University*);

09:50 Effect of the Correlation Function on the Focal Shift of a Partially Coherent Beam
Minghui Zhang (*Soochow University*); *Lin Liu* (*Soochow University*); *Yangjian Cai* (*Soochow University*);

10:10 Complex Degree of Coherence Measurement for Classical Statistical Fields
Xianlong Liu (*Soochow University*); *Fei Wang* (*Soochow University*); *Yangjian Cai* (*Soochow University*);

10:40 **Coffee Break**

Session 3A16
SC2: Optical Metamaterials for Environment and Energy Application 1

Friday AM, August 3, 2018

Room A8

Organized by Junichi Takahara, Kotaro Kajikawa

Chaired by Junichi Takahara, Kotaro Kajikawa

08:30 Invited Harvesting Sunlight with Titanium Nitride Nanostructures
Satoshi Ishii (*National Institute for Materials Science (NIMS)*); *Satish L. Shinde* (*National Institute for Materials Science (NIMS)*); *Ramu P. Sugavaneshwar* (*National Institute for Materials Science (NIMS)*); *Manpreet Kaur* (*Hokkaido University*); *Tadaaki Nagao* (*Hokkaido University*);

08:50 Invited Complex Evolutionary Photonic for Renewable Energy Harvesting with Zero-carbon Emission
Y. Tian (*Kaust University*); *M. Bonifazi* (*Kaust University*); *Andrea Fratalocchi* (*KAUST University*);

09:10 Invited Plasmonic Photo-thermoelectric Effect
Masaki Kondo (*Tokyo University of Agriculture and Technology (TUAT)*); *Wakana Kubo* (*Tokyo University of Agriculture and Technology (TUAT)*);

09:30 Invited Broadband Plasmonic Materials for Energy Applications
Venu Gopal Achanta (*Tata Institute of Fundamental Research*);

09:50 Invited Three-dimensional Metamaterial Structures for Mid-infrared Absorption Spectroscopy toward Gas Sensing
E. Shkondin (*Technical University of Denmark*); *T. Repan* (*Technical University of Denmark*); *L. Vertchenko* (*Technical University of Denmark*); *Andrei V. Lavrinenko* (*Technical University of Denmark*); *Osamu Takayama* (*Technical University of Denmark*);

10:10 Radiative Cooling Using Silica Particles
Kotaro Kajikawa (*Tokyo Institute of Technology*);

10:40 **Coffee Break**

Session 3A17
SC3: Quantum Information Processing and Devices 1

Friday AM, August 3, 2018

Room A9

Organized by Hai-Zhi Song, Qiang Zhou

Chaired by Wei Zhang, Yasutomo Ota

08:30 Chip-integrated Quantum-dot Single Photon Sources Fabricated by Transfer Printing (Invited)
Yasutomo Ota (*The University of Tokyo*); *Ryota Katsumi* (*The University of Tokyo*); *Alto Osada* (*The University of Tokyo*); *Masahiro Kakuda* (*The University of Tokyo*); *Satoshi Iwamoto* (*The University of Tokyo*); *Yasuhiko Arakawa* (*The University of Tokyo*);

08:50 Highly Brightness and Purity Single Photons Generated from Quantum Dot in a Micropillar (Invited)
Ying Yu (*Sun Yat-sen University*); *Shunfa Liu* (*Sun Yat-sen University*); *Rongling Su* (*Sun Yat-sen University*); *Jin Liu* (*Sun Yat-sen University*); *Siyuan Yu* (*Sun Yat-sen University*);

09:10 Realizing Photon Subtraction with Single-photon Frequency Upconversion System
Yu Chen (*East China Normal University*); *Xiuliang Chen* (*East China Normal University*); *Jianhui Ma* (*East China Normal University*); *Huiqin Hu* (*East China Normal University*); *Guangjian Xu* (*East China Normal University*); *Haifeng Pan* (*East China Normal University*); *E Wu* (*East China Normal University*);

09:30 Efficient Quantum Entanglement Distillation in Quantum-dot and Micro-resonator System (Invited)
Chuan Wang (*Beijing University of Posts and Telecommunications*); *T. J. Wang* (*Beijing University of Posts and Telecommunications*);

09:50 Building Blocks for Quantum Networks (Invited)
Daniel Oblak (*University of Calgary*);

10:10 Time-frequency Distributions of a Biphoton Wave Packet (Invited)
Ryosuke Shimizu (*University of Electro-Communications*);

10:40 **Coffee Break**

Session 3A18
Photonics, Nanophotonics and Quantum Electrodynamics

Friday AM, August 3, 2018

Room A10

Chaired by Dong-Wook Kim, Fangwei Ye

08:30 Hybrid Nanostructures of Metal/2D Materials for Plasmon-enhanced Applications
Xuanhua Li (*Northwestern Polytechnical University*); *Shaohui Guo* (*Northwestern Polytechnical University*); *Bingqing Wei* (*Northwestern Polytechnical University*);

08:50 Broadband Omnidirectional Absorption Enhancement of MoS_2 Monolayers on Sub-100 nm SiO_2/Si Wafers
Eunah Kim (*Ewha Womans University*); *Jin-Woo Cho* (*Kyung Hee University*); *Trang Thi Thu Nguyen* (*Ewha Womans University*); *Sun-Kyung Kim* (*Kyung Hee University*); *Seokhyun Yoon* (*Ewha Womans University*); *Dong-Wook Kim* (*Ewha Womans University*);

09:10 Filtering Multiple Colors from Submicron Pixels Using Resonant Scattering Reduction
June Sang Lee (*Ewha Womans University*); *Ji Yeon Park* (*Ewha Womans University*); *Yong Hwan Kim* (*KOS, Inc.*); *Seokwoo Jeon* (*KAIST*); *Dong Ha Kim* (*Ewha Womans University*); *Jerome Kartham Hyun* (*Ewha Womans University*);

09:30 Bloch Oscillations in Arrays of Helical Waveguides
Wei Feng Zhang (*Shanghai Jiao Tong University*); *Xiao Zhang* (*Shanghai Jiao Tong University*); *Yaroslav V. Kartashov* (*ICFO*); *Xianfeng Chen* (*Shanghai Jiao Tong University*); *Fangwei Ye* (*Shanghai Jiao Tong University*);

09:50 Cryptanalysis on an Optical Cryptosystem Based on Phase Truncated Fourier Transforms and a Random Amplitude Mask
Yi Xiong (*National University of Singapore*); *C. Quan* (*National University of Singapore*);

10:40 **Coffee Break**

Session 3A0
Poster Session 3

Friday AM, August 3, 2018

8:30 AM - 11:30 AM

Room Foyer

1 Electromagnetic Scattering from Strongly Inhomogeneous Semi-infinite Dielectric Media
Alexey A. Shcherbakov (*Moscow Institute of Physics and Technology*); *D. F. Baydin* (*Moscow Institute of Physics and Technology*);

2 Numerical Study of the Enhancement of Magneto-optic Kerr Effect Using Silica Thin Film
H. Mizuno (*Tokai University*); *Takehiro Tachizaki* (*Tokai University*);

3 A Numerical Analysis of an Inverse Periodic Resonant Structure at THz Frequencies
Tomas Kriz (*Brno University of Technology*); *Petr Drexler* (*Brno University of Technology*);

4 Hardware Correlator Development at SHAO
Zhijun Xu (*Shanghai Astronomical Observatory, Chinese Academy of Science*); *Jiangying Gan* (*Shanghai Astronomical Observatory, Chinese Academy of Science*); *Shaoguang Guo* (*Shanghai Astronomical Observatory, Chinese Academy of Science*); *Renjie Zhu* (*Shanghai Astronomical Observatory*);

5 A Method of Path Sharing for Multiple VDIF Data Streams Transmission
Renjie Zhu (*Shanghai Astronomical Observatory, Chinese Academy of Science*);

6 Research of the Chinese Array for Pulsars
Zhijun Xu (*Shanghai Astronomical Observatory, Chinese Academy of Science*);

7 A Design of the Reflective Array Antenna Based on Plasma Metematerial with the Dielectric Matching Layer Technique
Wenyu Li (*Nanjing University of Aeronautics and Astronautics*); *Hai Feng Zhang* (*Nanjing University of Aeronautics and Astronautics*); *Ting Liu* (*Nanjing University of Aeronautics and Astronautics*); *Yu Ma* (*Nanjing University of Posts and Telecommunications*);

8 LP-RLSA Antenna with Funnel Probe Adapter and Metallic Canceling Slats
Omid Beheshti Zavareh (*Shaheed Beheshti St.*); *Hanieh Arbab Soleimany* (*Shaheed Beheshti St.*);

9 Design of a Transceiver Antenna for Wideband Chipless RFID Tags
Yong Kang Kuang (*Tongji University*); *Guo Chun Wan* (*Tongji University*); *Mei Song Tong* (*Tongji University*);

10 Multi-beam Radiation from Two-dimensional Luneburg Lens Excited in PCB Substrate at Millimeter Wave Frequencies for 5G Applications
Hsi-Tseng Chou (*National Taiwan University*); *Zhi-Da Yan* (*National Taiwan University*);

11 A Numerical Study of Influence of a Matching Medium on Transmission Coefficients between Antennas Used in Microwave Imaging System
Jan Tesarik (*Czech Technical University in Prague*); *Ondrej Fiser* (*Czech Technical University in Prague*); *David Vrba* (*Czech Technical University in Prague*); *Jan Vrba, Jr.* (*Czech Technical University in Prague*);

12 Development of UWB Microwave Mammography with Multi-polarization
Kansei Terashima (*Kansai University*); *Soichiro Yamaguchi* (*Nihon University*); *Yoshio Nagayama* (*Nihon University*); *Tomoya Hanashima* (*Nihon University*); *Toshifumi Moriyama* (*Nagasaki University*); *Toshiyuki Tanaka* (*Nagasaki University*); *Hayato Tsuchiya* (*Nihon University*);

13 Change in Electroencephalogram Basic Rhythms in Healthy Humans Owing to Treatment with a High-voltage 50 Hz Electric Field: Possible Acute Effect on Arousal Level
Takaki Nedachi (*Hakuju Institute for Health Science*); *Toshikazu Shinba* (*Shizuoka Saiseikai General Hospital*); *Shinji Harakawa* (*Obihiro University of Agricultural and Veterinary Medicine*);

14 Analysis and Synthesis of Large Scale Conformal Antenna Based on Hybrid Layout
Bao Jun Niu (*Nanjing Research Institute of Electronic Technology*); *Dong Xia* (*Beihang University*); *Yun Xing* (*Beihang University*); *Xiuzhu Ye* (*Beihang University*); *Ming Bai* (*Beihang University*);

15 High Gain Microstrip Antenna Based on Zero-index Metamaterials
Yu Zhang (*Anhui University*); *Minquan Li* (*Anhui University*); *Xu Pan* (*Anhui University*); *Xiaopan Xia* (*Anhui University*); *Yanyang Liu* (*Anhui University*); *Yingbo Wu* (*Anhui University*);

16 Proximity Coupled Patch Array Antenna with Switchable Polarization for WLAN Application
Mohammad Ridwan Effendi (*Institut Teknologi Bandung*); *Sitia Lestari* (*Institut Teknologi Bandung*); *Farohaji Kurniawan* (*Chiba University*); *Achmad Munir* (*Institut Teknologi Bandung*);

17 Miniaturized Branch-line Coupler with Harmonic Suppression
Kana Tokugawa (*Sophia University*); *Shunya Kuwana* (*Sophia University*); *Hitoshi Hayashi* (*Sophia University*);

18 Thin EM Wave Absorber Metasurface Based on Artificial Magnetic Conductor
Ilham Fikry (*Telkom University*); *Levy Olivia Nur* (*Telkom University*); *Bambang Setia Nugroho* (*Universitas Indonesia*); *Achmad Munir* (*Institut Teknologi Bandung*);

19 On the Formation of Higher Harmonic Components in Power Spectrum of the Output Radiation of Microwave Generator with Turbulent Electron Beam
Andrei Victorovich Starodubov (*Saratov State University*); *Yurii Alexandrovich Kalinin* (*Saratov State University*);

20 Compact SIW Power Divider with CSRRs for WLAN Application
Eki Ahmad Zaki Hamidi (*UIN Sunan Gunung Djati Bandung*); *Ulfa Sri Utami* (*UIN Sunan Gunung Djati Bandung*); *Nanang Ismail* (*UIN Sunan Gunung Djati Bandung*); *Achmad Munir* (*Institut Teknologi Bandung*);

21 Design of GaAs pHEMT Negative Resistant Oscillator Using a Novel Parallel Coupled Dielectric Resonator
Seyi Stephen Olokede (*University of Johannesburg*); *Chuckwuemeka Joshua Okonkwo* (*National Open University of Nigeria*); *Syazana Basyirah Binti Mohammad Zaki* (*Kyushu Institute of Technology*); *Adeseko A. Ayeni* (*University of Ilorin*);

22 Dispersion Properties of Two-dimensional Fractal Superconductor Photonic Crystals with Thue-Morse Sequence
Hai Feng Zhang (*Nanjing University of Posts and Telecommunications*); *Hao Zhang* (*Nanjing University of Posts and Telecommunications*); *Wen-Yu Wang* (*Nanjing University of Posts and Telecommunications*); *Yong-Diao Wen* (*Nanjing University of Aeronautics and Astronautics*);

23 Pulsed Microwave Discharge in the Processes of Obtaining Semiconductor Polycrystalline Silicon for Solar Energy
Vladislav Igumnov (*National Research Tomsk Polytechnic University*); *Vladimir Karelin* (*National Research Tomsk Polytechnic University*); *Andrei Vladimirovich Mostovshchikov* (*National Research Tomsk Polytechnic University*); *Vasily Kozhevnikov* (*Institute of High Current Electronics*);

24 Analytic Calculation of Specific Polarizations that Not Generate Second Harmonic in Silicon Surface
Adalberto Alejo-Molina (*Instituto de Investigacion en Ciencias Basicas y Aplicadas (IICBA), UAEM*); *Carola Emminger* (*New Mexico State University*); *Kurt Hingerl* (*Johannes Kepler University*);

25 Research of Failure Models for a 700 V VDMOSFET
Xiaopei Chen (*Southwest Jiaotong University*); *Quanyuan Feng* (*Southwest Jiaotong University*); *Tao Jin* (*Xipu Campus of Southwest Jiaotong University*);

26 The Impaction of Epitaxy Growth Method on Performance of Low-voltage UMOS
Min Gong (*Southwest Jiaotong University*); *Quanyuan Feng* (*Southwest Jiaotong University*); *Tao Jin* (*Southwest Jiaotong University*);

27 Low-loss and Low-firable Dielectrics Using $CaNd_2(MoO_4)_4$ Ceramics for Microwave Applications
Jin-Yu Yang (*National Cheng Kung University (NCKU)*); *Meng-Hung Tsai* (*National Cheng Kung University (NCKU)*); *Cheng-Liang Huang* (*National Cheng Kung University (NCKU)*);

28 Optimization of Current Collector Design for ***Operando*** X-band-EPR Investigations of Lithium-Ion Batteries Using Numerical Simulations
Ivan Flammia (*Central Institute for Engineering, Electronics and Analytics — Electronic Systems (ZEA-2), Forschungszentrum Jülich GmbH*); *Achim Mester* (*Central Institute for Engineering, Electronics and Analytics — Electronic Systems (ZEA-2), Forschungszentrum Jülich GmbH*); *Arvid Niemöller* (*Institute of Energy and Climate Research — Fundamental Electrochemistry (IEK-9), Forschungszentrum Jülich GmbH*); *Josef Granwehr* (*Institute of Energy and Climate Research — Fundamental Electrochemistry (IEK-9), Forschungszentrum Jülich GmbH; RWTH Aachen University*); *Stefan Van Waasen* (*Central Institute for Engineering, Electronics and Analytics — Electronic Systems (ZEA-2), Forschungszentrum Jülich GmbH; University of Duisburg-Essen*);

29 Wideband Substrate-integrated-waveguide BPF Incorporated with Complimentary-split-ring-resonators
Nanang Ismail (*UIN Sunan Gunung Djati Bandung*); *Rusdi Affandi Siregar* (*UIN Sunan Gunung Djati Bandung*); *Hardi Nusantara* (*Institut Teknologi Bandung*); *Achmad Munir* (*Institut Teknologi Bandung*);

30 Microstrip Filtering Power Dividers with Novel Isolating Method for Good In-band Isolation Performance
Ting-Yi Huang (*Feng Chia University*); *Cheng-Hsien Wu* (*Feng Chia University*); *Chih-Heng Lin* (*Feng Chia University*);

31 Modified Transformation Optics Based FDTD for Local Mesh Refinement
Ruonan Chen (*East China Normal University*); *Lei Kuang* (*East China Normal University*); *Pengcheng Ren* (*East China Normal University*); *Qing Huo Liu* (*Duke University*);

32 Fractional Bessel Vortex Beam: From Theory to Experiment
Chengliang Zhao (*Soochow University*); *Yuanjie Yang* (*University of Electronic Science and Technology of China*); *Fei Wang* (*Soochow University*); *Yangjian Cai* (*Soochow University*);

33 The Laser Scattering and Statistical Characteristics of Haze Particles Which Have Rarefied Random Distribution
Ming-Jun Wang (*Xi'an University of technology*); *Ji-Hua Yu* (*Xi'an University of Technology*); *Xi-Zheng Ke* (*Xi'an University of Technology*); *Ting Wu* (*Xi'an University of Technology*);

34 Analysis of Electrostatic Discharge Immunity on the Fingerprint Recognition Module Used in Mobile Phone
Soon-Mi Hwang (*Korea Electronics Technology Institute (KETI)*); *Chul-Hee Kim* (*Korea Electronics Technology Institute (KETI)*); *Kwan-Hun Lee* (*Korea Electronics Technology Institute (KETI)*);

35 Reducing Reflection Noise of Signal Trace through Metal Planes with a Via Stub in a Thick Multilayered PCB Using High-impedance Arc Traces
Chun-Chieh Chuang (*Chung Yuan Christian University*); *Ming-Yuan Chuang* (*Chung Yuan Christian University*); *Mei-Yi Huang* (*Chung Yuan Christian University*); *Ming-Wei Chang* (*Chung Yuan Christian University*); *Chia-Hao Li* (*Chung Yuan Christian University*); *Yu-Hsiang Cheng* (*Chung Yuan Christian University*); *Kuang-Yi Wu* (*Chung Yuan Christian University*); *Jay Lin* (*Allied Circuit Co., Ltd. (ACCL)*); *Cloud Lai* (*Allied Circuit Co., Ltd. (ACCL)*); *Guang-Hwa Shiue* (*Chung Yuan Christian University*);

36 A $\mathbf{0.94 \sim 1.50}$ GHz Constant Absolute Bandwidth Tunable Bandpass Filter with Electric Coupling
Dengyao Tian (*Southwest Jiaotong University*); *Quanyuan Feng* (*Southwest Jiaotong University*); *Qianyin Xiang* (*Southwest Jiaotong University*);

37 Long-term Change in Rainfall Rate and Melting Layer Height in Indonesia
Marzuki (*Andalas University*); *Hiroyuki Hashiguchi* (*Kyoto University*); *Mutya Vonnisa* (*Andalas University*); *Harmadi* (*Andalas University*); *Muzirwan* (*National Institute of Aeronautics and Space*);

38 Object Reconstruction via Radar Detection behind Walls
Matthew Charnley (*Rutgers University*); *Aihua W. Wood* (*Air Force Institute of Technology*);

39 Efficient Control of Output Parameters of the Medium Power Gyrotrons
Alexander I. Tsvetkov (*Federal State Budgetary Scientific Institution "Federal Research Center The Institute of Applied Physics of the Russian Academy of Sciences"*); *Andrey P. Fokin* (*Federal State Budgetary Scientific Institution "Federal Research Center The Institute of Applied Physics of the Russian Academy of Sciences"*); *Anton S. Sedov* (*Federal State Budgetary Scientific Institution "Federal Research Center The Institute of Applied Physics of the Russian Academy of Sciences"*); *Mikhail Yu. Glyavin* (*Federal State Budgetary Scientific Institution "Federal Research Center The Institute of Applied Physics of the Russian Academy of Sciences"*); *Toshitaka Idehara* (*University of Fukui*); *Teruo Saito* (*University of Fukui (FIR FU)*); *R. M. Rozental* (*Institute of Applied Physics of the Russian Academy of Sciences (IAP RAS)*); *A. E. Fedotov* (*Institute of Applied Physics of the Russian Academy of Sciences (IAP RAS)*); *B. Z. Movshevitch* (*Institute of Applied Physics of the Russian Academy of Sciences (IAP RAS)*); *Gregory G. Denisov* (*Federal State Budgetary Scientific Institution "Federal Research Center The Institute of Applied Physics of the Russian Academy of Sciences"*);

40 Optical Broadband Angular Selectivity for Normal Incidence
Jian Chen (*Soochow University*); *Shanshan Li* (*Soochow University*); *Jie Luo* (*Soochow University*); *Weixin Lu* (*Soochow University*); *Bo Hou* (*Soochow University*); *Yun Lai* (*Soochow University*);

41 A Numerical Analysis of Capacitors for On-chip Energy Storage
Tomas Kriz (*Brno University of Technology*); *Dusan Nespor* (*Brno University of Technology*);

42 Feasibility Assessment of a Phoswich Detector for Simultaneous Measurement of a Mixture of Beta- and Gamma-emitters
Han Young Joo (*Dongguk University*); *Jae Wook Kim* (*Dongguk University*); *Joo-Hyun Moon* (*Dongguk University*);

43 Polarization Crosstalk Generated in a Bent Si-wire Waveguide with Sidewall Roughness
T. Aso (*Hosei University*); *Toshiki Tsuchiya* (*Hosei University*); *Yota Sasaki* (*Hosei University*); *Junji Yamauchi* (*Hosei University*); *H. Nakano* (*Hosei University*);

44 Ultraviolet to Near Infrared Photodetector and Gas Sensor Based on Oxide Semiconductors Film and Quantum Dots
Chiu-Hsien Wu (*National Chung Hsing University*); *Kuen-Lin Chen* (*National Chung Hsing University*); *Yu-Ling Li* (*National Chung Hsing University*); *Zu-Yin Deng* (*National Chung Hsing University*);

45 Electromagnetically Spinning Viscometer for Observing Dynamics of Langmuir Films
Maiko Hosoda (*Tokyo Denki University*); *Keiji Sakai* (*The University of Tokyo*);

46 Generation of Bipartite Squeezed Vacuum States
Chien-Ming Wu (*National Tsing Hua University*); *Hsun-Chung Wu* (*National Tsing Hua University*); *Ray-Kuang Lee* (*National Tsing-Hua University*);

47 Investigation of Kalman Filter-KF-Application on a Quasi-Newtonian — QN — Algorithm for Photovoltaic Maximum Power Point Detection — MPPT
J. L. de Carvalho (*University of Campinas*); *Luiz Carlos Kretly* (*University of Campinas*);

48 All-dielectric Active Metasurface Based on Liquid Crystals
Jose Francisco Algorri (*Carlos III University*); *Braulio Garcia-Camara* (*Carlos III University of Madrid*); *Dimitris Zografopoulos* (*Istituto per la Microelettronica e Microsistemi (CNR-IMM)*); *Virginia Urruchi* (*Carlos III University*); *Jose Manuel Sanchez-Pena* (*Carlos III University*); *Romeo Beccherelli* (*Istituto per la Microelettronica e Microsistemi (CNR-IMM)*);

49 Plasmonic Topological Insulators for Topological Nanophotonics
Wei Feng Zhang (*Shanghai Jiao Tong University*); *Xianfeng Chen* (*Shanghai Jiao Tong University*); *Fangwei Ye* (*Shanghai Jiao Tong University*);

50 Performances Enhancement of a-Si:H Thin Film Photovoltaic (PV) Cells by Incorporating Silver Nanoparticles (Ag NPs)
Pauline Sylvia Pokam Kuisseu (*CEMHTI-CNRS*); *Peiqing Yu* (*Université d'Orléans*); *Timothee Pingault* (*CEMHTI-CNRS*); *Jean Philippe Blondeau* (*University of Orleans*); *Esidor Ntsoenzok* (*CEMHTI-CNRS*); *Annie Beya* (*Université de Yaounde*); *Caroline Andreazza* (*ICMN-CNRS*); *Julien Roussel* (*Université dOrléans*); *Elyaakoubi Mustapha* (*SOLEMS*); *Jacques Meot* (*SOLEMS*); *Alexandre Jaffre* (*Centrale SUPELEC-CNRS*); *Christophe Longeaud* (*Centrale SUPELEC-CNRS*);

51 A Novel Honeycomb Plasma Metamaterial Absorber
Hao Zhang (*Nanjing University of Posts and Telecommunications*); *Hai Feng Zhang* (*Nanjing University of Posts and Telecommunications*); *Jing Yang* (*Nanjing University of Posts and Telecommunications*); *Jia-Xuan Liu* (*Nanjing University of Posts and Telecommunications*);

52 An Easy-to-Attach Modified SMA Connector
Hao Hui Chen (*National Kaohsiung First University of Science and Technology*); *Jin-Wei Song* (*National Kaohsiung First University of Science and Technology, First Campus*); *Jyun-Dian Tasi* (*National Kaohsiung First University of Science and Technology, First Campus*); *Yao-Wen Hsu* (*National Kaohsiung First University of Science and Technology, First Campus*);

53 A Ultra-wideband Monocone Antenna with Dielectric Loading
Ankang Liu (*Nanyang Technological University*); *Yi-Long Lu* (*Nanyang Technological University*);

54 Highly Tunable Band-stop Filter Based on Silicon on Insulator Split Micro-ring Resonators
Yaw-Dong Wu (*National Kaohsiung University of Applied Sciences*); *Yung-Ju Huang* (*National Kaohsiung University of Applied Sciences*); *Tien-Tsorng Shih* (*National Kaohsiung University of Applied Sciences*);

55 Efficient Surface-plasmon Controllers for Highly Integrated On-chip Plasmonic Circuits
Hong-Son Chu (*A*STAR Institute of High Performance Computing*); *Thanh Xuan Hoang* (*A*STAR Institute of High Performance Computing*); *Andreea Radulescu* (*National University of Singapore*); *Ksenia S. Makarenko* (*National University of Singapore*); *Thorin Jake Duffin* (*National University of Singapore*); *Christian A. Nijhuis* (*National University of Singapore*);

Session 3P1a
FocusSession.SC5: Microwave Remote Sensing of Ocean

Friday PM, August 3, 2018

Room T1

Organized by Xiaofeng Li, Simon H. Yueh

Chaired by Xiaofeng Li, Simon H. Yueh

13:20 Overview of Long-term Ocean Observations by the Advanced Microwave Scanning Radiometer (AMSR) Series
Naoto Ebuchi (*Hokkaido University*); *Misako Kachi* (*Japan Aerospace Exploration Agency*); *Takashi Maeda* (*Japan Aerospace Exploration Agency*); *Nodoka Ono* (*Japan Aerospace Exploration Agency*); *Marehito Kasahara* (*Japan Aerospace Exploration Agency*); *Taikan Oki* (*Japan Aerospace Exploration Agency*); *Haruhisa Shimoda* (*Tokai University*);

13:40 Assimilation of SAR-derived Sea Surface Winds into Typhoon Forecast Model
Xiao Feng Yang (*Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences*); *Yi Yu* (*National University of Defense Technology*); *Boheng Duan* (*National University of Defense Technology*); *Weimin Zhang* (*National University of Defense Technology*);

14:00 Tropical Cyclone Wind Direction Retrieval from C-band Dual-polarization Synthetic Aperture Radar
Shengren Fan (*Nanjing University of Information Science and Technology*); *Biao Zhang* (*Nanjing University of Information Science and Technology*); *Alexis Mouche* (*Laboratoire d'Oceanographie Physique Spatiale*);

14:20 Characterization of the Tropical Cyclones Wind Radii in the North Western Pacific Basin Using the ASCAT Winds Data Products
Seubson Soisuvarn (*King Mongkut's Institute of Technology Ladkrabang*); *Suntana Oudomying* (*King Mongkut's Institute of Technology Ladkrabang*);

14:40 SAR Observations and WRF Modeling of Marine Atmospheric Phenomena
Xiaofeng Li (*National Oceanic and Atmospheric Administration (NOAA)*); *W. Zheng* (*National Oceanic and Atmospheric Administration (NOAA)/National Centers for Environmental Prediction (NCEP)/Environmental Modeling Center (EMC)*); *D. Shen* (*Shanghai Ocean University*);

15:00 A C-band Geophysical Model Function for Determining Coastal Wind Speed Using Synthetic Aperture Radar
Yiru Lu (*Nanjing University of Information Science and Technology*); *Biao Zhang* (*Nanjing University of Information Science and Technology*); *William Perrie* (*Bedford Institute of Oceanography*); *Alexis Mouche* (*Laboratoire d'Oceanographie Physique Spatiale*); *Xiaofeng Li* (*GST at National Oceanic and Atmospheric Administration (NOAA)/NESDIS*); *He Wang* (*National Ocean Technology Center, State Oceanic Administration*);

15:20 Dependency of Backscattering Signal from Ocean Surface on Oceanwinds Measured By X-band Airborne SAR
Akitsugu Nadai (*National Institute of Information and Communications Technology (NICT)*); *Toshihiko Umehara* (*National Institute of Information and Communications Technology*); *Shoichiro Kojima* (*National Institute of Information and Communications Technology*); *Jyunpei Uemoto* (*National Institute of Information and Communications Technology (NICT)*); *Takeshi Matsuoka* (*National Institute of Information and Communications Technology (NICT)*); *Tatsuharu Kobayashi* (*National Institute of Information and Communications Technology*);

15:40 **Coffee Break**

16:00 Upper Ocean Response of Yongxing Island Area to Typhoon 'Kujira' in the South China Sea from Multiple-satellite and Fixed-point Observation
Jie Guo (*Yantai Institute of Coastal Zone Research, Chinese Academy of Sciences (CAS), Key Laboratory of Coastal Environmental Processes and Ecological Remediat*); *Tianlong Zhang* (*Yantai Institute of Coastal Zone Research, Chinese Academy of Sciences (CAS), Key Laboratory of Coastal Environmental Processes and Ecological Remediat*); *Biao Zhang* (*Nanjing University of Information Science and Technology*); *Yankai Mu* (*Yantai Institute of Coastal Zone Research, Chinese Academy of Sciences (CAS), Key Laboratory of Coastal Environmental Processes and Ecological Remediat*);

16:20 Ocean Applications for Wideband Ku-band Signals of Opportunity
Rashmi Shah (*California Institute of Technology*); *Zhijin Li* (*California Institute of Technology*); *Yuhe Tony Song* (*California Institute of Technology*); *James L. Garrison* (*Purdue University*); *Soon Chye Ho* (*Purdue University*);

16:40 Validating SMAP SSS with in Situ Data and Process Oriented Analysis
Wenqing Tang (*California Institute of Technology*); *Simon H. Yueh* (*California Institute of Technology*); *Alexander G. Fore* (*California Institute of Technology*); *Akiko Hayashi* (*California Institute of Technology*);

17:00 Accurate Surface Fields and Emissivities in Ocean Scattering and Emission Using Neighborhood Impedance Boundary Condition (NIBC) with Dense Grid in Surface Integral Equations
Yanlei Du (*Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences*); *Tai Qiao* (*University of Michigan*); *Leung Tsang* (*University of Michigan*); *Xiao Feng Yang* (*Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences*);

Session 3P1b
SC5: Inverse Scattering 1

Friday PM, August 3, 2018

Room T1

Organized by Motoyuki Sato, Toshifumi Moriyama

Chaired by Motoyuki Sato, Toshifumi Moriyama

17:20 Adaptive Array Radar Imaging of Moving Human Body for Measurement of Vital Signs
Takuya Sakamoto (*University of Hyogo*); *Kentaro Konishi* (*University of Hyogo*); *Masashi Muragaki* (*Kyoto University*); *Shigeaki Okumura* (*Kyoto University*); *Toru Sato* (*Kyoto University*);

17:40 Accuracy Enhanced Distorted Born Iterative Method with Envelope Based Boundary Extraction for Microwave Mammography
Shouhei Kidera (*The University of Electro-Communications*); *Kazuki Noritake* (*The University of Electro-Communications*);

18:00 Development of Microwave CT Mammography Device
Yoshio Nagayama (*Nihon University*); *Tomoya Hanashima* (*Nihon University*); *Tomohiko Asai* (*Nihon University*); *Soichiro Yamaguchi* (*Nihon University*); *Toshifumi Moriyama* (*Nagasaki University*); *Toshiyuki Tanaka* (*Nagasaki University*); *Hayato Tsuchiya* (*Nihon University*);

Session 3P2a
FocusSession.SC5: SAR Imaging and Applications

Friday PM, August 3, 2018

Room T2

Organized by Kun-Shan Chen, Toshifumi Moriyama

Chaired by Kun-Shan Chen, Toshifumi Moriyama

13:00 Invited Compound Scattering Matrix by Dipoles in the Range Direction
Yoshio Yamaguchi (*Niigata University*); *Yoshihiro Yamazaki* (*Niigata University*); *Hiroyoshi Yamada* (*Niigata University*);

13:20 An Experimental Assessment of Polarimetric L-band Backscattering Using GB-SAR Data
Sevket Demirci (*Mersin University*); *Betul Yilmaz* (*Mersin University*); *Serhat Gokkan* (*Mersin University*); *Hakan Isiker* (*Mersin University*); *Caner Ozdemir* (*Mersin University*);

13:40 RCS Characteristics Analysis of Trihedral Corner Reflector for Bistatic SAR Tandem Mode Radiometric Calibration
Qiaona Zheng (*Institute of Electronics, Chinese Academy of Sciences*); *Jun Hong* (*Institute of Electronics, Chinese Academy of Science*); *Yu Wang* (*Institute of Electronics, Chinese Academy of Sciences*);

14:00 Research on the Sparse Aperture Remote Imaging System Based on the Freeform
Quanying Wu (*Suzhou University of Science and Technology*); *Junliu Fan* (*Suzhou University of Science and Technology*); *Baohua Chen* (*Suzhou University of Science and Technology*);

14:20 Invited Airborne Single Pass X-band FMCW INSAR Instrument for the Accurate DEM Generation — Principle and Validation
Masanobu Shimada (*Tokyo Denki University*); *Akira Nohmi* (*Alouette Technology*); *Hitoshi Nohmi* (*Alouette Technology*); *Mayumi Noguchi* (*The Geospatial Information Authority of Japan*); *Sho Takahashi* (*The Geospatial Information Authority of Japan*);

14:40 Invited Integration of Heterogeneous InSAR Measurements for Mapping Complete and Accurate Three-dimensional Surface Displacements: A Case Study of 2016 Mw 7.8 Kaiköura Earthquake, New Zealand
Jun Hu (*Central South University*); *J. H. Liu* (*Central South University*); *Lixin Wu* (*Northeastern University*); *Zhi-Wei Li* (*Central South University*); *Q. Sun* (*Hunan Normal University*);

15:00 Near Real-time Image Focusing of Drone SAR Using Parallelized Back-projection Algorithm
Invited
Cheng-Yen Chiang (*Xuchang University*); *Chih-Yuan Chu* (*Xuchang University*); *Kun-Shan Chen* (*Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences*); *Chiung-Shen Ku* (*Institute of Remote Sensing and Digital Earth, CAS*); *Chia-Tang Chen* (*Xuchang University*);

15:20 Hinotori-C: A Full Polarimetric C Band Airborne Circularly Polarized Synthetic Aperture Radar for Disaster Monitoring
Josaphat Tetuko Sri Sumantyo (*Chiba University*); *Ming Yam Chua* (*Multimedia University*); *Cahya Edi Santosa* (*Chiba University*); *Good Fried Panggabean* (*Chiba University*); *Kengo Tsushima* (*Chiba University*); *Tomoro Watanabe* (*Chiba University*); *Karna Sasmita* (*Dislitbangau*); *Agus Mardiyanto* (*Dislitbangau*); *Franciscus Dwikoco Sri Sumantyo* (*Universitas Bhayangkara Jakarta Raya*); *Eko Tjipto Rahardjo* (*University of Indonesia*); *Gunawan Wibisono* (*University of Indonesia*); *Edi Supartono* (*Akademi Angkatan Udara*); *Steven Gao* (*University of Kent*); *Peberlin Parulian Sitompul* (*Chiba University*); *Mohammad Nasucha* (*Chiba University*); *Farohaji Kurniawan* (*Chiba University*); *Asif Awaludin* (*Chiba University*); *Babag Purbantoro* (*Chiba University*); *Ya Qi Ji* (*Chiba University*); *Nobuyoshi Imura* (*Chiba University*);

15:40 **Coffee Break**

16:00 An Autofocus Algorithm Based on Topography Searching for Airborne SAR
Yan-Lei Li (*Institute of Electronics, Chinese Academy of Sciences*); *Xingdong Liang* (*Institute of Electronics, Chinese Academy of Sciences*); *Ming Qiao* (*Institute of Electronics, Chinese Academy of Sciences*); *Long-Yong Chen* (*Institute of Electronics, Chinese Academy of Sciences*);

16:20 Effects of Lunar Revolution on Moon-based Synthetic Aperture Radar Imaging
Zhen Xu (*Institute of Remote Sensing and Digital Earth, Chinese Academy of Science*); *Kun-Shan Chen* (*Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences*);

Session 3P2b
Light Scattering and Radiative Transfer: Basic Research and Applications 2

Friday PM, August 3, 2018

Room T2

Organized by Ping Yang, Michael I. Mishchenko

Chaired by Lei Bi, Bingqi Yi

17:00 Formation of the Backscattering Halos in Media with Highly Elongated Phase Scattering Functions
Yaroslaw A. Ilyushin (*Moscow State University*);

17:20 Influences of Minor Structures on Optical Properties of BC Aggregates
Shiwen Teng (*Nanjing University of Information Science & Technology*); *Chao Liu* (*Nanjing University of Information Science & Technology*);

17:40 A New Approach to Efficiently Modeling the Extinction Efficiencies of Nonspherical Particles
Wushao Lin (*Zhejiang University*); *Lei Bi* (*Zhejiang University*);

18:00 Optical Properties and Radiative Forcing of Aged BC Due to Hygroscopic Growth
Chen Zeng (*Nanjing University of Information Science & Technology*); *Chao Liu* (*Nanjing University of Information Science and Technology*); *Jiangnan Li* (*University of Victoria*); *Bin Zhu* (*Nanjing University of Information Science and Technology*); *Yan Yin* (*Nanjing University of Information Science and Technology*);

18:20 Does Day/Night Band Radiative Transfer Simulation under Cloudy Conditions Vary with Period Changes in Lunar Spectral Irradiances?
Min Min (*National Satellite Meteorological Center, China Meteorological Administration (NSMC/CMA)*);

Session 3P3a
Advanced Mathematical and Computational Methods in Electromagnetic Theory and Their Applications 2

Friday PM, August 3, 2018

Room T3

Organized by Georgi Nikolov Georgiev, Mariana Nikolova Georgieva-Grosse

Chaired by Georgi Nikolov Georgiev

13:00 Current Distribution and Input Impedance of a Strip Antenna Located at a Plane Interface of an Isotropic Medium and a Gyrotropic Metamaterial
Invited
Anna S. Zaitseva (*University of Nizhny Novgorod*); *Alexander V. Kudrin* (*University of Nizhny Novgorod*); *Tatyana M. Zaboronkova* (*Technical University of Nizhny Novgorod*);

13:20 Theorem for the Identity of the $\boldsymbol{G_1(c,n)}$ and $\boldsymbol{L_1(c,n)}$ Numbers and Its Application to the Theory of Waveguides
Invited
Georgi Nikolov Georgiev (*University of Veliko Tirnovo "St. St. Cyril and Methodius"*); *Mariana Nikolova Georgieva-Grosse* (*Consulting and Researcher in Physics and Computer Sciences*);

13:40 Magnetic Levitation, Flux Pinning, and Analytical Models of Thermally Activated Flux Motion in High-$\mathbf{T_c}$ Superconductors and Its Applications in the Medical Field
Miryala Santosh (*University of Toronto*); *Masato Murakami* (*Shibaura Institute of Technology*);

14:00 Suppression of Distant Aperture Sidelobes in Linear and Planar Phased Arrays
Vladlen Ilych Gusevsky (*National Research University "Moscow Power Engineering Institute"*); *Olga Nikolaevna Tsvetkova* (*NRU MPEI*);

14:20 FDTD Analysis of Meta-surfaces Utilizing Surface Impedance Boundary Conditions
Takuji Arima (*Tokyo University of Agriculture and Technology*); *Toru Uno* (*Tokyo University of Agriculture and Technology*);

Session 3P3b
SC1: Advanced Numerical Techniques for Solving Electromagnetic Problems

Friday PM, August 3, 2018

Room T3

Organized by Mei Song Tong, Shinichiro Ohnuki

Chaired by Mei Song Tong, Shinichiro Ohnuki

14:40 An Efficient Numerical Method for Solving Multiscale Electromagnetic Scattering Problems
Yibei Hou (*Shanghai Jiao Tong University*); *Gaobiao Xiao* (*Shanghai Jiao Tong University*);

15:00 Mixed Discretization of CFIE in the Framework of MLFMA
Sadri Guler (*Middle East Technical University*); *Abdulkadir C. Yucel* (*Middle East Technical University*); *Hakan Bagci* (*King Abdullah University of Science and Technology (KAUST)*); *Ozgur Ergul* (*Middle East Technical University*);

15:20 New Fine Features Modelling Techniques in Large Scale Massively Parallel Program JEMS-FDTD
Xuesong Meng (*Institute of Applied Physics and Computational Mathematics*); *Xianfeng Bao* (*Institute of Applied Physics and Computational Mathematics*); *Haijing Zhou* (*Institute of Applied Physical and Computational Mathematics*);

15:40 **Coffee Break**

16:00 A Scattering Analysis Algorithm for Inhomogeneous Tensor Impedance Surfaces Using Fourier Transform Method
Bo O. Zhu (*Nanjing University*);

16:20 Performance Comparison between Different Schemes of the Frequency Dispersive FDTD under the GPU Implementation
Toshihito Onai (*Tokyo Metropolitan University*); *A. Kik* (*Tokyo Metropolitan University*); *Jerdvisanop Chakarothai* (*National Institute of Information and Communication Technology*); *Y. Suzuki* (*Tokyo Metropolitan University*); *Jun Shibayama* (*Hosei University*);

16:40 Accurate Solution of Volume-surface Integral Equations at Very Low Frequencies
Qing Xu (*Tongji University*); *Mei Song Tong* (*Tongji University*);

17:00 Surface-volume-surface EFIE in Electromagnetic Analysis for Signal Integrity, Remote Sensing, Bioelectromagnetics, and Power Systems
Vladimir Okhmatovski (*University of Manitoba*); *S. Zheng* (*University of Manitoba*); *R. Gholami* (*University of Manitoba*); *J. Mojolagbe* (*University of Manitoba*); *Z. Cheng* (*University of Manitoba*); *A. Aljammal* (*University of Manitoba*);

17:20 Electromagnetic Scattering of an Object Using a Modified High Order FDTD
Pengcheng Ren (*East China Normal University*); *Lei Kuang* (*East China Normal University*); *Ruonan Chen* (*East China Normal University*); *Qing Huo Liu* (*Duke University*);

17:40 Development of the Hybrid Simulation Method Combining the FDTD Method with the Finite Difference Beam Propagation Method for Millimeter-wave Analysis
Takehiro Iwata (*Tokyo Metropolitan University*); *A. Kik* (*Tokyo Metropolitan University*); *Jerdvisanop Chakarothai* (*National Institute of Information and Communication Technology*); *Y. Suzuki* (*Tokyo Metropolitan University*); *Jun Shibayama* (*Hosei University*);

18:00 Scattering of a Small Object Based on TO-FDTD
Ruonan Chen (*East China Normal University*); *Lei Kuang* (*East China Normal University*); *Pengcheng Ren* (*East China Normal University*); *Qing Huo Liu* (*Duke University*);

18:20 EM Analysis of Electromagnetic Devices Using Finite-difference Complex-frequency-domain Method
Di Wu (*Nihon University*); *Takashi Yamaguchi* (*Tokyo Metropolitan Industrial Technology Research Institute*); *Shinichiro Ohnuki* (*Nihon University*);

Session 3P4a
SC3: Modeling, Numerical Simulation and Theory in Optics and Photonics 2

Friday PM, August 3, 2018

Room T4

Organized by Yasuhide Tsuji, Jun Shibayama

Chaired by Yasuhide Tsuji, Jun Shibayama

13:00 Mode Field Evolution of a Single-mode Multi-core Fiber Based on the Coupled Mode Theory
Yi-Ling Li (*National Sun Yat-Sen University*); *Sin-Yuan Mu* (*National Sun Yat-Sen University*); *Hung-Wen Chang* (*National Sun Yat-Sen University*);

13:20 Design of Tapered Directional Coupler Type Polarization Splitter Using 3-D FE-BPM Based on Coordinate Transformation
Shingo Kawamura (*Muroran Institure of Technology*); *Yasuhide Tsuji* (*Muroran Institute of Technology*);

13:40 Analysis of Directivity for SOI Photodiode with Gold Line-and-space Grating
Hiroaki Satoh (*Shizuoka University*); *Hiroshi Inokawa* (*Shizuoka University*);

14:20 A Terahertz Polarization Splitter Using a Hybrid Plasmonic Waveguide with InSb
Jun Shibayama (*Hosei University*); *Arata Yamamoto* (*Hosei University*); *Junji Yamauchi* (*Hosei University*); *H. Nakano* (*Hosei University*);

14:40 Mode Conversion of Surface Plasmon Polaritons Using an Insulator-metal-insulator Waveguide with an Air Gap
Jun Shibayama (*Hosei University*); *Takahiro Suzuki* (*Hosei University*); *Junji Yamauchi* (*Hosei University*); *H. Nakano* (*Hosei University*);

15:00 A Simulation System to Hide Dynamic Objects Selectively at Visible Wavelengths
Qiluan Cheng (*Huazhong Agricultural University*); *Shu Zhang* (*Huazhong Agricultural University*); *Chizhu Ding* (*Huazhong Agricultural University*); *Zuojun Tan* (*Huazhong Agricultural University*); *Guo Ping Wang* (*Shenzhen University*);

15:20 Dispersion Characteristic of Elliptical Waveguide under New Boundary Condition
Shamini Pillay Narayanasamy Pillay (*Multimedia University*); *Deepak Kumar* (*Multimedia University*);

15:40 **Coffee Break**

Session 3P4b
SC1: Computational Techniques in Electromagnetics and Applications

Friday PM, August 3, 2018

Room T4

Organized by Yoichi Okuno, Tsuneki Yamasaki

Chaired by Yoichi Okuno, Tsuneki Yamasaki

16:00 Numerical Analysis of a Leapfrog ADI-FDTD Method for Metamaterial Maxwell's Equations
Meng Chen (*Xiangtan University*); *Yunqing Huang* (*Xiangtan University*); *Jichun Li* (*University of Nevada, Las Vegas*);

16:20 A Grating-based Plasmon Index Sensor: Possibility of Workspaces with Tractable Minimal TM Efficiencies
Xun Xu (*Kyushu Sangyo University*); *Miaoning Zheng* (*South China Normal University*); *Yoichi Okuno* (*South China Normal University*);

16:40 Analysis of Inter-Bundle Crosstalk in High Speed MIMO Signalling in Powerline Communication Channels
Modisa Mosalaosi (*University of KwaZulu-Natal*); *Thomas Joachim Odhiambo Afullo* (*University of KwaZulu-Natal (UKZN)*);

17:00 Numerical Analysis of Pulse Reflection Response from Conducting Strips in Dispersion Media with Air Layer
Ryosuke Ozaki (*Nihon University*); *Tsuneki Yamasaki* (*Nihon University*);

17:20 Scattering of Electromagnetic Wave by a Rectangular Cylinder Consist of Conducting Strips
Tsuneki Yamasaki (*Nihon University*); *Toshiki Shibayama* (*Nihon University*); *Ryousuke Ozaki* (*Nihon University*);

Session 3P5
SC4: Advanced Antenna and RF Circuits Design

Friday PM, August 3, 2018

Room T5

Organized by Malay Ranjan Tripathy, Yongchae Jeong

Chaired by Malay Ranjan Tripathy, Yongchae Jeong

13:00 Effect of Mutual Coupling within Elements of Array-units Beyond Full Wavelength Element Spacing for Linear Arrays
Jacob Adopley (*Ghana Technology University College*);

13:20 Design of a Size-reduced Microwave Amplifiers Using an Asymmetrical Spiral-DGS
Jongsik Lim (*Soonchunhyang University*); *Phanam Pech* (*Chonbuk National University*); *Heeyoun Choi* (*Chonbuk National University*); *Yongchae Jeong* (*Chonbuk National University*); *Sang-Min Han* (*Soonchunhyang University*); *Dal Ahn* (*Soonchunhyang University*);

13:40 $\lambda/2$ Stepped Impedance Resonator Parallel/Antiparallel Coupled-line Bandpass Filter with a Wide Stopband Characteristic
Phirun Kim (*Chonbuk National University*); *Phanam Pech* (*Chonbuk National University*); *Girdhari Chaudhary* (*Chonbuk National University*); *Jongsik Lim* (*Soonchunhyang University*); *Malay Ranjan Tripathy* (*Amity University Uttar Pradesh*); *Yongchae Jeong* (*Chonbuk National University*);

14:00 Flexible Printed Active Antenna for Digital Television Reception
Teerapong Pratumsiri (*Chulalongkorn University*); *Panuwat Janpugdee* (*Chulalongkorn University*);

14:20 Reliability Ranking of Nodes: A Case of Revolution
Priya Ranjan (*Amity University Uttar Pradesh*); *Harshit Pandey* (*Amity University Uttar Pradesh*); *Malay Ranjan Tripathy* (*Amity University Uttar Pradesh*); *Cher-Ming Tan* (*Chang Gung University*); *Saumay Pushp* (*KAIST*);

14:40 A Compact Slotted 4 Element Large Wideband MIMO Antenna for Wireless Application
Bishal Mishra (*Amity University Uttar Pradesh*); *Rehan Ahmed Siddiqui* (*Amity University Uttar Pradesh*); *Malay Ranjan Tripathy* (*Amity University Uttar Pradesh*); *Daniel Ronnow* (*University of Gavle*);

15:00 An X-band 16-element Switched-beam Antenna Array with Butler Matrix Network
Chao-Hsiung Chang (*National Taiwan University of Science and Technology*); *Jheng-Yuan Huang* (*National Taiwan University of Science and Technology*); *Chun-Hao Tseng* (*National Taiwan University of Science and Technology*);

15:20 Wideband Flat Group Delay Circuit for Self-interference Cancellation in Full Duplex
Girdhari Chaudhary (*Chonbuk National University*); *Qi Wang* (*Chonbuk National University*); *Malay Ranjan Tripathy* (*Amity University Uttar Pradesh*); *Yongchae Jeong* (*Chonbuk National University*);

15:40 **Coffee Break**

16:00 Slot-coupled Circularly Polarized SIW Antenna Array for 5G Apllication
Rehan Ahmed Siddiqui (*Amity University Uttar Pradesh*); *Bishal Mishra* (*Amity University Uttar Pradesh*); *Malay Ranjan Tripathy* (*Amity University Uttar Pradesh*); *M. S. Prasad* (*Amity University Uttar Pradesh*);

16:20 A Novel 1–6 GHz Chaotic Signal Oscillator for Broadband Communication Systems
Shanwen Hu (*Nanjing University of Posts and Telecommunications*); *Shu Yu* (*Nanjing University of Posts and Telecommunications*); *Yunqing Hu* (*Nanjing University of Posts and Telecommunications*); *Zixuan Wang* (*Nanjing University of Posts and Telecommunications*); *Bo Zhou* (*Nanjing University of Posts and Telecommunications*);

16:40 A Novel UWB Quadrifilar Plannar Spiral Antenna
Hesham M. Elkady (*Higher Institute of Engineering and Technology in New Damietta*); *Haythem Hussein Abdullah* (*Electronics Research Institute (ERI)*); *Saad M. Darwish* (*Alexandria University*);

17:00 Design of a Ring Oscillator with Temperature and Process Compensation Adopting a Novel Method
Jian-Chang Du (*Southeast University*); *Zhigong Wang* (*Southeast University*); *Xi Chen* (*Southeast University*); *Jian Xu* (*Southeast University*); *Bing-Bing Ma* (*Southeast University*);

17:20 Miniaturized Wilkinson Power Divider with DC Isolation
Sichen Xie (*Sophia University*); *Hitoshi Hayashi* (*Sophia University*);

17:40 A Wideband Circularly Polarized Dipole Antenna with Crossed Configuration
Min-Cheol Hong (*Hoseo University*); *Ju-Heun Lee* (*Hoseo University*); *Jeong-Taek Oh* (*Hoseo University*); *Sang-Min Han* (*Soonchunhyang University*); *Won-Sang Yoon* (*Hoseo University*);

18:00 T-shaped Slot Loaded Rectangular Patch Antenna with Enhanced Bandwidth Using Defected Ground Structure
Nagendra Prasad Yadav (*Nanjing University of Science and Technology*); *Malay Ranjan Tripathy* (*Amity University Uttar Pradesh*); *Yongchae Jeong* (*Chonbuk National University*);

18:20 Vertical Polarized 1-D Series-fed **1** × **2** Linear Array for X-band Synthetic Aperture Radar Applications
Venkata Kishore Kothapudi (*Koneru Lakshmaiah Education Foundation*); *Balveer Painam* (*Koneru lakshmaiah Education Foundation*); *Lakshman Pappula* (*KLEF*); *Vijay Kumar* (*Vellore Institute of Technology (VIT)*);

Session 3P6a
SC1: Radar Cross Section and Inverse Problems in Electromagnetics

Friday PM, August 3, 2018

Room T6

Organized by Yury Vladimirovich Yukhanov, Yury V. Shestopalov

Chaired by Yury Vladimirovich Yukhanov, Yury V. Shestopalov

13:00 Optimization Method in 2D DC Cloaking Problems
Gennady V. Alekseev (*Institute of Applied Mathematics FEB RAS*); *Dmitry A. Tereshko* (*Institute of Applied Mathematics FEB RAS*); *Elizaveta O. Paklina* (*Far Eastern Federal University*);

13:20 Broadband RCS Reduction Using Digital Impedance Metasurfaces with 2-bit Coding of Axes of Anisotropy and Eigen Reactances
Andrey I. Semenikhin (*Southern Federal University*); *Diana V. Semenikhina* (*Southern Federal University*); *Yury Vladimirovich Yukhanov* (*Southern Federal University*); *P. V. Blagovisnyy* (*Southern Federal University*);

13:40 Synthesis of a Two-focal Impedance Reflector of Arbitrary Shape
Yury Vladimirovich Yukhanov (*Southern Federal University*); *Tatyana Yurievna Privalova* (*Southern Federal University*); *Timur O. Amirokov* (*Southern Federal University*); *E. E. Privalov* (*Southern Federal University*);

14:00 Scattering Characteristics of the Van-Atta Waveguide Array on the Surface of a Cylinder
Yury Vladimirovich Yukhanov (*Southern Federal University*); *Tatyana Yurievna Privalova* (*Southern Federal University*); *Elena Vladimirovna Kryuk* (*Southern Federal University*); *Ilya Vladimirovich Merglodov* (*Southern Federal University*);

14:20 Numerical Analysis of Inverse Problems for Electric Field Measurements
Dmitry A. Tereshko (*Institute of Applied Mathematics FEB RAS*);

14:40 Theoretical and Numerical Analysis of the Magnetic Cloaking Problem
Yuliya E. Spivak (*Far Eastern Federal University*); *Aleksey V. Lobanov* (*Institute of Applied Mathematics FEB RAS*); *Dmitry A. Tereshko* (*Institute of Applied Mathematics FEB RAS*);

15:00 The Radiation Characteristics of the Four-element Vivaldi Antenna Arrays, Which Located on the Cylindrical Surface
A. V. Gevorkyan (*Southern Federal University*); *Yury Vladimirovich Yukhanov* (*Southern Federal University*); *Tatyana Yurievna Privalova* (*Southern Federal University*);

15:20 Radiation Characteristics of the Low Profile Dipole Antenna
A. V. Gevorkyan (*Southern Federal University*); *Tatyana Yurievna Privalova* (*Southern Federal University*); *Yury Vladimirovich Yukhanov* (*Southern Federal University*);

15:40 **Coffee Break**

16:00 Fusion of Three Different Feature Vectors-waveform Structure, EP-based CLEAN and Prony Method
Seung-Jae Lee (*Hannam University*); *In-Sik Choi* (*Hannam University*);

Session 3P6b
SC4: Terahertz Devices, Components, and Systems for Practical Applications

Friday PM, August 3, 2018

Room T6

Organized by Safumi Suzuki

Chaired by Safumi Suzuki, Koichi Maezawa

16:20 Mm-wave/THz Multi-Gigabit Wireless Links
Edward Wasige (*University of Glasgow*); *Abdullah Al-Khalidi* (*University of Glasgow*); *Jue Wang* (*University of Glasgow*);

16:40 Operating Mechanism and Voltage Swing Enhancement of the Hard-type Oscillators Based on Series-connected RTDs
Koichi Maezawa (*University of Toyama*); *Motoyuki Yoshida* (*University of Toyama*); *Masayuki Mori* (*University of Toyama*);

17:00 On the Sensitivity of Triple-barrier Resonant-tunneling (Sub-) mm-wave Detectors
K. Arzi (*University of Duisburg-Essen*); *S. Suzuki* (*Tokyo Institute of Technology*); *Andreas Rennings* (*University of Duisburg-Essen*); *Daniel Erni* (*University of Duisburg-Essen, Campus Duisburg*); *N. Weimann* (*University of Duisburg-Essen*); *M. Asada* (*Tokyo Institute of Technology*); *Werner Prost* (*University of Duisburg-Essen*);

17:20 Proposal of a Resonant-tunneling-diode Terahertz Oscillator Integrated with Rectangular Cavity Resonator for High Output Power
Safumi Suzuki (*Tokyo Institute of Technology*); *M. Asada* (*Tokyo Institute of Technology*); *Y. Aoyama* (*Tokyo Institute of Technology*);

17:40 Development of Terahertz Folded Waveguide Traveling Wave Amplifier
Wenxin Liu (*Institute of Electronics, Chinese Academy of Sciences*); *Chao Zhao* (*Institute of Electronics, Chinese Academy of Sciences*); *Xin Guo* (*Institute of Electronics, Chinese Academy of Sciences*); *Huaping Zhou* (*Affiliated Cancer Hospital & Institute of Guangzhou Medical University*);

18:00 Simulation and Analysis of Photoconductive Vacuum Diode Arrays in Terahertz Band
Jun Dai (*Beihang University*); *Cun-Jun Ruan* (*Beihang University*); *Xing-Yun Zhang* (*Beihang University*);

18:20 Design of Narrow Band Terahertz Waveguide Filters Including Power Handling Analysis
Ayesha Kosar Fahad (*Beihang University*); *Cun-Jun Ruan* (*Beihang University*); *Tanveer Ul Haq* (*Beihang University*); *Shahid Ullah* (*Beihang University*);

Session 3P7
Novel Materials, Designs and Applications for Absorption of Electromagnetic Wave

Friday PM, August 3, 2018

Room T7

Organized by Bo Hou, Fumiaki Miyamaru

Chaired by Bo Hou, Fumiaki Miyamaru

13:20 Invited Hybridization-induced Broadband Terahertz Graphene Meta-absorber
Nanli Mou (*Shanghai Institute of Optics and Fine Mechanics, Chinese Academy of Science*); *Hongxing Dong* (*Shanghai Institute of Optics and Fine Mechanics, Chinese Academy of Science*); *Shaohua Dong* (*Fudan University*); *Qiong He* (*Fudan University*); *Lei Zhou* (*Fudan University*); *Long Zhang* (*Fudan University*); *Shulin Sun* (*Fudan University*);

13:40 Invited Waveform-selective Absorbing Metasurfaces
Hiroki Wakatsuchi (*Nagoya Institute of Technology*); *D. F. Sievenpiper* (*University of California*);

14:00 Invited Metamaterial Absorbers: Broadband and Multifunctional Design
Wenjie Chen (*Zhejiang University*); *Wei Jiang* (*Zhejiang University*); *Shuomin Zhong* (*Zhejiang University*); *Yungui Ma* (*Zhejiang University*);

14:20 An Optically Transparent Broadband Resistive Frequency Selective Surface Absorber Utilizing Indium Tin Oxide (ITO) Film
Xianyou Xie (*Nanjing University*); *Ping Chen* (*Nanjing University*);

14:40 Invited Novel Electromagnetic Absorption Characteristics of Metallic Checkerboard-Like Metasurfaces
Yoshiro Urade (*Center for Emergent Matter Science, RIKEN*); *Yosuke Nakata* (*The University of Tokyo*); *Toshihiro Nakanishi* (*Kyoto University*); *Masao Kitano* (*Kyoto University*);

15:00 Invited Broadband Terahertz Wave Absorption in Self-complementary and Non-self-complementary Patterns
Keisuke Takano (*Shinshu University*); *Kenichiro Hanai* (*Osaka University*); *Masashi Yoshimura* (*Osaka University*); *Makoto Nakajima* (*Osaka University*); *Fumiaki Miyamaru* (*Shinshu University*);

15:20 Invited Changing Macromolecular Structure by THz Radiation
Hiromichi Hoshina (*Terahertz Sensing and Imaging Research Team, RIKEN*);

15:40 **Coffee Break**

16:00 Invited Narrowband Thermal Emitter by HfN-based Plasmonic Resonators
Junichi Takahara (*Osaka University*); *Hirofumi Toyoda* (*Osaka University*);

16:20 THz-induced Spallation in the Solids
Invited
Masaya Nagai (*Osaka University*); *Eiichi Matsubara* (*Osaka University*); *Masaaki Ashida* (*Osaka University*); *Masanori Fuyuki* (*Kio University*); *Keigo Kawase* (*Osaka University*); *Akinori Irizawa* (*Osaka University*); *Goro Isoyama* (*Osaka University*); *Jun Aoki* (*Osaka University*); *Michisato Toyoda* (*Osaka University*);

16:40 Photoinduced Charge Transfer Dynamics in Organic
Invited — MoS_2 Mixed-dimensional van der Waals Heterojunctions
Christopher E. Petoukhoff (*Okinawa Institute of Science and Technology*); *Sofiia Kosar* (*Okinawa Institute of Science and Technology*); *Manami Goto* (*Okinawa Institute of Science and Technology*); *Ibrahim Bozkurt* (*Rutgers University*); *Manish Chhowalla* (*Rutgers University*); *Keshav M. Dani* (*Okinawa Institute of Science and Technology Graduate University*);

17:00 Microwave Absorption by Logarithmic Spiral Meta-
Invited surface
Shubo Wang (*City University of Hong Kong*); *C. T. Chan* (*The Hong Kong University of Science and Technology*);

17:20 Activated Carbons Based on Natural Materials for Electromagnetic Wave Absorber
Yohandri Azwir (*Universitas Negeri Padang*); *Debi Rianto* (*Universitas Negeri Padang*); *Nova Satria* (*Universitas Negeri Padang*); *Zulpadrianto* (*Universitas Negeri Padang*); *Ananda Putra* (*Universitas Negeri Padang*); *Josaphat Tetuko Sri Sumantyo* (*Chiba University*);

17:40 Terahertz Spectroscopy of Lossy Photonic Crystals
Wenya Zhang (*Soochow University*); *Weixin Lu* (*Soochow University*); *Bo Hou* (*Soochow University*);

Session 3P8
SC2: Recent Advances of Metamaterials for Novel Electromagnetic and Photonic Devices

Friday PM, August 3, 2018

Room T8

Organized by Yungui Ma, Sailing He

Chaired by Yungui Ma, Sailing He

13:20 Exploring Novel Ways to Control Magnetic Fields
Invited with Negative Permeability
Rosa Mach-Batlle (*Universitat Autonoma de Barcelona*); *Sergi Laut* (*Universitat Autonoma de Barcelona*); *Nuria Del-Valle* (*Universitat Autonoma de Barcelona*); *Carles Navau* (*Universitat Autonoma de Barcelona*); *Alvaro Sanchez* (*Universitat Autonoma de Barcelona*);

13:40 Ultrafast Tunable Metamaterial-induced Trans-
Invited parency
Xiaoyong Hu (*Peking University*);

14:00 High-efficiency Optical Meta-coupler of Wire Waveg-
Invited uides for Different Angular Momentums
Yi Chao Xu (*Soochow University*); *Hongchen Chu* (*Soochow University*); *Yun Lai* (*Soochow University*);

14:20 Intuitive Model Based on Azimuthally Propagating
Invited Modes for the Nanoparticle Sensing with Whispering Gallery Microcavities
Haitao Liu (*Nankai University*); *Junda Zhu* (*Nankai University*); *Ying Zhong* (*Tianjin University*);

14:40 Compact Toroidal Localized Surface Plasmons
Invited
Pengfei Qin (*Zhejiang University*); *Yi Hao Yang* (*Zhejiang University*); *Bin Zheng* (*Zhejiang University*); *Er Ping Li* (*Zhejiang University — UIUC Institute*); *Hongsheng Chen* (*Zhejiang University*);

15:00 Definite Light Deflection by Cosmic Topological De-
Invited fects Mimicked by Rotational Metasurfaces
Chong Sheng (*Nanjing University*); *Hui Liu* (*Nanjing University*); *Ying Chen* (*Xiamen University*); *Zhiwei Yan* (*Nanjing University*); *Lin Xu* (*Xiamen University*); *Xiangyang Wang* (*Nanjing University*); *Qing Huo Liu* (*Duke University*); *Huanyang Chen* (*Xiamen University*); *Shining Zhu* (*Nanjing University*);

15:20 Unidirectional Propagation and the Optical Dirac
Invited Equation
Simon A. R. Horsley (*University of Exeter*);

15:40 **Coffee Break**

16:00 Effect of Anisotropic Metasurface Linings on Circular
Invited Waveguide
Zhangjie Luo (*Southest University*); *Changjiang Xue* (*Institute of Electronic Engineering, China Academy of Engineering Physics*); *Tie Jun Cui* (*Southeast University*);

16:20 Photonic Crystals of Spoof Surface Plasmons
Invited
Zhen Gao (*Nanyang Technological University*); *Baile Zhang* (*Nanyang Technological University*);

16:40 Influence of Excitation States on Optical Simulations in Waveguide Arrays
Invited
Tao Li (*Nanjing University*); *B. B. Xu* (*Nanjing University*); *Qingqing Cheng* (*University of Shanghai for Science and Technology*); *Shi-Ning Zhu* (*Nanjing University*);

17:00 Side Scattering Shadow and Energy Concentration Effects of Epsilon-near-zero Media
Invited
Jia Wen Song (*Soochow University*); *Jie Luo* (*Soochow University*); *Yun Lai* (*Soochow University*);

17:20 All-dielectric Anapolic Metasurface Based on Cubic Nanoparticles
Jose Francisco Algorri (*Carlos III University*); *Braulio Garcia-Camara* (*Carlos III University of Madrid*); *Dimitris Zografopoulos* (*Istituto per la Microelettronica e Microsistemi (CNR-IMM)*); *Ricardo Vergaz* (*Carlos III University*); *Jose Manuel Sanchez-Pena* (*Carlos III University*); *Romeo Beccherelli* (*Istituto per la Microelettronica e Microsistemi (CNR-IMM)*);

17:40 Response of Waveform-selective Metasurfaces to Wi-Fi Signals
Daiju Ushikoshi (*Nagoya Institute of Technology*); *K. Asano* (*Nagoya Institute of Technology*); *Mizuki Tanikawa* (*Nagoya Institute of Technology*); *K. Sanji* (*SOKEN, INC.*); *M. Ikeda* (*SOKEN, INC.*); *Daisuke Anzai* (*Nagoya Institute of Technology*); *Hiroki Wakatsuchi* (*Nagoya Institute of Technology*);

18:00 Application of Waveform-selective Metasurfaces to Electromagnetic Interference Issues
Kosei Asano (*Nagoya Institute of Technology*); *Hiroki Wakatsuchi* (*Nagoya Institute of Technology*);

Session 3P9
FocusSession.SC2: Advances in Nanolasers 2

Friday PM, August 3, 2018

Room A1

Organized by Renmin Ma, Qing Zhang

Chaired by Renmin Ma

13:00 Surface Plasmon Amplifiers and Lasers
Keynote
Pierre Berini (*University of Ottawa*);

13:30 Plasmonics: Friend or Foe for Laser Miniaturization?
Invited
Renmin Ma (*Peking University*);

13:50 Spatio-temporal Dynamics of Stopped-light Nanolasing
Invited
Ortwin Hess (*Imperial College London*);

14:10 Surface Plasmon Polariton Lasers and Electrically Pumped Fabry-Perot Resonators Based on Open Metallic Cavities
Invited
Henri J. Lezec (*National Institute of Standards and Technology*); *Wenqi Zhu* (*National Institute of Standards and Technology*); *Cheng Zhang* (*National Institute of Standards and Technology*); *Ting Xu* (*Nanjing University*); *Christian A. Nijhuis* (*National University of Singapore*); *Ksenia Makarenko* (*National University of Singapore*); *Thorin Jake Duffin* (*National University of Singapore*); *Andreea Vasile* (*National University of Singapore*); *Hong-Son Chu* (*A*STAR Institute of High Performance Computing*); *Thanh Xuan Hoang* (*A*STAR Institute of High Performance Computing*); *Dongyang Wan* (*National University of Singapore*); *Saurav Prakash* (*National University of Singapore*); *Cao Yu* (*National University of Singapore*); *Thirumalai Venkatesan* (*National University of Singapore*); *Amit K. Agrawal* (*National Institute of Standards and Technology*);

14:30 Performance Features of a Plasmon-assisted Solid-state Laser
Invited
D. Hernandez-Pinilla (*Universidad Autonoma de Madrid*); *P. Molina* (*Universidad Autonoma de Madrid*); *J. Cuerda* (*Universidad Autonoma de Madrid*); *M. O. Ramirez* (*Universidad Autonoma de Madrid*); *Luisa E. Bausa* (*Universidad Autonoma de Madrid*);

14:50 Challenges for Electrically Pumped Subwavelength Plasmon Mode Lasers
Invited
Martin T. Hill (*The University of Western Australia*);

15:10 Parity-time Symmetric Laser and Absorber
Invited
Zi Jing Wong (*Texas A&M University*);

15:30 Complex Cavity Photonic Crystal Surface Emitting Laser
Invited
Wanhua Zheng (*Institute of Semiconductors, CAS*); *Yufei Wang* (*Institute of Semiconductors, CAS*);

15:40 **Coffee Break**

Session 3P10
SC1: High-frequency Methods

Friday PM, August 3, 2018

Room A2

Organized by Keiji Goto, Ryoichi Sato

Chaired by Keiji Goto, Ryoichi Sato

13:20 Reflection and Transmission Features of Scattered Field from Multi-layered Window Glass in High Frequency Band
Ryoichi Sato (*Niigata University*); *Hiroshi Shirai* (*Chuo University*);

13:40 ***E***-polarized Diffraction by a Lossy Dielectric Wedge
Se-Yun Kim (*Korea Institute of Science and Technology*);

14:00 EM Transmission through an Aperture in a Thin Conducting Screen Separating Two Half Spaces of Different Properties
Hirohide Serizawa (*Numazu National College of Technology*);

14:20 Radio Propagation Estimation at ETC Gate Using Point Cloud Obtained from Mobile Mapping System
Takahiro Hashimoto (*Mitsubishi Electric Corp. Info. Tech. R&D Center*); *T. Nakanishi* (*Mitsubishi Electric Corp. Info. Tech. R&D Center*); *M. Takikawa* (*Mitsubishi Electric Corp. Info. Tech. R&D Center*); *N. Yoneda* (*Mitsubishi Electric Corp. Info. Tech. R&D Center*); *M. Miura* (*Mitsubishi Electric Corp. Info. Tech. R&D Center*); *Y. Tsuda* (*Mitsubishi Electric Corp. Kamakura Works*);

14:40 Study on the Microcellular Radio Wave Propagation at Universitas Indonesia Environment Utilizing Ray Tracing
Fariz Azhar Abdillah (*Universitas Indonesia*); *Eko Tjipto Rahardjo* (*University of Indonesia*);

15:00 Asymptotic Analysis for Transient Scattered Magnetic Field from a Coated Conducting Cylinder by Using Saddle Point Technique
Keiji Goto (*National Defense Academy*); *Toru Kawano* (*National Defense Academy*); *Hisaki Kitahara* (*National Defense Academy*); *Yuri Fukumura* (*National Defense Academy*); *Manami Inoue* (*National Defense Academy*);

15:40 **Coffee Break**

Session 3P11
New Advances in Light Scattering by Particles in the Micron and Sub-Micron Regimes 2

Friday PM, August 3, 2018

Room A3

Organized by Jose Maria Saiz Vega, Matthew J. Berg

Chaired by Jose Maria Saiz Vega, Matthew J. Berg

13:20 Invited Multiple Scattering in Discrete Random Media of Micron-scale Particle Using Incoherent Interactions
Karri Muinonen (*University of Helsinki*); *Johannes Markkanen* (*University of Helsinki*); *Timo Vaisanen* (*University of Helsinki*); *Antti Penttila* (*University of Helsinki*); *Gorden Videen* (*Army Research Laboratory*);

13:40 Invited Estimating Particle Non-sphericity from the Fourier Spectrum of Its Light-scattering Pattern
Andrey V. Romanov (*Voevodsky Institute of Chemical Kinetics and Combustion SB RAS*); *Valeri P. Maltsev* (*Novosibirsk State University*); *Maxim A. Yurkin* (*Voevodsky Institute of Chemical Kinetics and Combustion SB RAS*);

14:00 Invited Photopolarimetric Remote Sensing from Irregularly Shaped Particles
Gorden Videen (*Army Research Laboratory*); *Evgenij Zubko* (*Far Eastern Federal University*);

14:20 Invited Water Cloud Optical Properties Derived from Combined Active and Passive Remote Sensing
Yongxiang Hu (*NASA Langely Research Center*);

14:40 Invited Aerosol Particle Characterization with Digital Holography: Simultaneous Scattering and Image Measurements
Matthew J. Berg (*Kansas State University*); *Y. W. Heinson* (*Washington University in Saint Louis*); *O. Kemppinen* (*Kansas State University*); *Stephen Holler* (*Fordham University*);

15:40 **Coffee Break**

Session 3P12a
FocusSession.SC3: Photonic Nanostructures for Enhancing Light-matter Interaction 2

Friday PM, August 3, 2018

Room A4

Organized by Chia Chen Hsu

Chaired by Chia Chen Hsu, Keiji Sasaki

13:00 Invited Study of Ultrafast Dynamics and Nonlinear Optics in Metamaterial/Plasmonic Nanostructures
Kam Sing Wong (*Hong Kong University of Science and Technology*);

13:20 Invited Small Divergence Photonic Crystal Surface Emitting Lasers with ITO Top Cladding Layers
Shen-Che Huang (*National Chiao Tung University*); *Kuo-Bin Hong* (*National Chiao Tung University*); *Tien-Chang Lu* (*National Chiao Tung University*);

13:40 Enhancing Luminescence Efficiency of Transition Metal Dichalcogenide Monolayers
Invited
Jeongyong Kim (*Sungkyunkwan University*);

14:00 Narrow-linewidth Surface Mode on Polymer Structures for Strongly Enhanced Fluorescence
Invited
Xianyu Ao (*South China Normal University*);

14:20 Strong Upconversion Luminescence Enhancement of Nd^{3+}-doped Multilayered Nanoparticles in Aqueous Solution by Low Refractive Index Resonant Waveguide Grating
Invited
Duc Tu Vu (*National Chung Cheng University*); *I-Chang Tsa* (*National Chung Cheng University*); *Quoc Minh Le* (*Institute of Materials Science*); *Shiao-Wei Kuo* (*National Sun Yat Sen University*); *Lai-Kwan Chau* (*National Chung Cheng University*); *Chu-Chi Ting* (*National Chung Cheng University*); *Hung-Chih Kan* (*National Chung Cheng University*); *Chia Chen Hsu* (*National Chung Cheng University*);

14:40 Interactions of Plasmonic Nano-vortex Fields with Nanoparticles and Molecules
Invited
Keiji Sasaki (*Hokkaido University*);

15:00 Hybrid Nanostructures Assembled by Laser Trapping and Deposition of Nanoparticles in the Nano-gap of a Plasmonic Antenna
Christophe Pin (*Hokkaido University*); *Shutaro Ishida* (*Hokkaido University*); *Genta Takahashi* (*Hokkaido University*); *Kota Sudo* (*Hokkaido University*); *Tuyoshi Fukaminato* (*Kumamoto University*); *Keiji Sasaki* (*Hokkaido University*);

15:20 Interaction of Infrared Light to Bulk Propagating Waves in Hyperbolic Metamaterial Optical Waveguide
Invited
Junichi Takahara (*Osaka University*); *Mai Higuchi* (*Osaka University*); *Jun Sagara* (*Osaka University*);

15:40 **Coffee Break**

16:00 Curvature-induced Forces between Nano-corrugated Plasmonic Surfaces
Invited
Kun Ding (*The Hong Kong University of Science and Technology*); *Han Hu* (*National Chung Cheng University*); *Tsan-Chuen Leung* (*National Chung Cheng University*); *Che Ting Chan* (*The Hong Kong University of Science and Technology*);

16:20 Hot Carrier Extraction with Plasmonic Broadband Absorbers
Invited
Charlene Ng (*IPF*); *Ann Roberts* (*The University of Melbourne*); *Timothy J. Davis* (*The University of Melbourne*); *Daniel E. Gomez* (*RMIT University*);

16:40 Lasing Enhanced Surface Plasmon Resonance Sensing
Invited
Renmin Ma (*Peking University*);

Session 3P12b
Emerging Techniques for Optical Communication and Sensing 2

Friday PM, August 3, 2018

Room A4

Organized by Guo-Wei Lu, Zhenzhou Cheng

Chaired by Guo-Wei Lu, Tinghui Xiao

17:00 The Applications of Interferometric Fiber-optic Sensors in Oilfield
Invited
Fei Liu (*Peking University*); *Xiangge He* (*Peking University*); *Le Yu* (*Beijing Perception Technology Co. Ltd*); *Yong Pan* (*Petro China Xinjiang Oilfield Company*); *Bing Xie* (*Petro China Xinjiang Oilfield Company*); *Duo Yi* (*Peking University*); *Lijuan Gu* (*Peking University*); *Min Zhang* (*Peking University*);

17:20 Mid-infrared Germanium Photonic Integrated Platform
Tinghui Xiao (*The University of Tokyo*); *Ziqiang Zhao* (*The University of Tokyo*); *Wen Zhou* (*The Chinese University of Hong Kong*); *Mitsuru Takenaka* (*The University of Tokyo*); *Hon Ki Tsang* (*The Chinese University of Hong Kong*); *Zhenzhou Cheng* (*The University of Tokyo*); *Keisuke Goda* (*University of California*);

17:40 Recent Developments in Ghost Imaging
Invited
Piotr Ryczkowski (*Tampere University of Technology*); *Caroline Amiot* (*Tampere University of Technology*); *John M. Dudley* (*Universite de Franche-Comte*); *Ari T. Friberg* (*University of Eastern Finland*); *Goery Genty* (*Tampere University of Technology*);

Session 3P13
SC3: Optical Wireless Technologies for Mobile Communications and Internet of Things

Friday PM, August 3, 2018

Room A5

Organized by Pham Tien Dat, Hoa Le Minh

Chaired by Pham Tien Dat

13:20 Trend of High-speed Optical Wireless System
Invited
Mitsuji Matsumoto (*Waseda University*);

13:40 Image Sensor Communications for Automotive
Invited
Takaya Yamazato (*Nagoya University*);

14:00 Asynchronous Symbol Discrimination for Optical Camera Communication Using Smartphone with Rolling Shutter Camera
Invited
T. Naramoto (*Meijo University*); *K. Yamaguchi* (*Meijo University*); *T. Zinda* (*Meijo University*); *Wataru Chujo* (*Meijo University*);

14:20 Infrared Indoor Optical Wireless Communications with Silicon Photonics Integration
Invited
Ke Wang (*Royal Melbourne Institute of Technology (RMIT University)*); *Zeshi Yuan* (*Royal Melbourne Institute of Technology (RMIT University)*); *Tingting Song* (*The University of Melbourne*); *Yang Wang* (*The University of Melbourne*); *Shitao Gao* (*The University of Melbourne*); *Tian Liang* (*The University of Melbourne*); *Ampalavanapillai Nirmalathas* (*The University of Melbourne*); *Christina Lim* (*The University of Melbourne*); *Kamal E. Alameh* (*Edith Cowan University*); *Hong Tao Li* (*Nanjing University of Science and Technology*); *Efstratios Skafidas* (*The University of Melbourne*);

14:40 Optical Wireless Communication Back-haul Link in Dense Wireless Networks
Invited
Sepehr Daghbandan (*The University of Edinburgh*); *Wasiu O. Popoola* (*The University of Edinburgh*); *Harald Haas* (*The University of Edinburgh*);

15:00 Quantum Key Distribution over FSO: Current Development and Future Perspectives
Invited
Phuc V. Trinh (*National Institute of Information and Communication Technology*); *Anh T. Pham* (*The University of Aizu*); *Alberto Carrasco-Casado* (*National Institute of Information and Communication Technology*); *Morio Toyoshima* (*National Institute of Information and Communication Technology*);

15:20 Satellite Laser Communication Activities in NICT
Invited
Dimitar Radkov Kolev (*National Institute of Information and Communication Technology*); *Alberto Carrasco-Casado* (*National Institute of Information and Communication Technology*); *Hideki Takenaka* (*National Institute of Information and Communication Technology*); *Yasushi Munemasa* (*National Institute of Information and Communication Technology*); *Phuc V. Trinh* (*National Institute of Information and Communication Technology*); *Yoshihiko Saito* (*National Institute of Information and Communication Technology*); *Hiroo Kunimori* (*National Institute of Information and Communication Technology*); *Yoshisada Koyama* (*National Institute of Information and Communication Technology*); *Kenji Suzuki* (*National Institute of Information and Communication Technology*); *Toshihiro Kubooka* (*National Institute of Information and Communication Technology*); *Morio Toyoshima* (*National Institute of Information and Communication Technology*);

15:40 **Coffee Break**

16:00 Relay-assisted VLC Networks Using Code Division Multiple Access and Analog Network Coding
Ngoc T. Dang (*Posts and Telecommunications Institute of Technology*);

16:20 Filter Bank Multi-carrier and Non Orthogonal Multiple Access in MIMO OLED VLC System
Pham Quang Thai (*Ho Chi Minh City University of Technology*);

16:40 Design and Implementation of Communication System Based on CSK
Ziyan Jia (*Jiangsu University of Technology*); *Zhi Yang* (*Jiangsu University of Technology*); *Zhiwen Qian* (*Jiangsu University of Technology*); *Youlian Zhu* (*Jiangsu University of Technology*); *Yiqi Zhu* (*Jiangsu University of Technology*); *Zhengquan Li* (*Southeast University*); *Lianfeng Shen* (*Southeast University*);

17:00 Comparison of Indoor Positioning System Techniques Using Visible Light Communication
Ukrit Mankong (*Chiang Mai University*); *Sangdaun Potha* (*Chiang Mai University*); *Pornthep Srisang* (*Chiang Mai University*);

17:20 A Direct Pre-disortion Method Based on Gaussian LED Nonlinear Behavior Model for Visible Light Communication
Rongzhao Wu (*North China Electric Power University*); *Xin Chen* (*North China Electric Power University*); *Yarong Guo* (*North China Electric Power University*); *Jiang Liu* (*Waseda University*); *Peng Liu* (*North China Electric Power University*);

17:40 Design of a Rear-end Anti-collision System Based on Visible Light Communication
Ziyan Jia (*Jiangsu University of Technology*); *Dan Wei* (*Jiangsu University of Technology*); *Zhiwen Qian* (*Jiangsu University of Technology*); *Youlian Zhu* (*Jiangsu University of Technology*); *Yiqi Zhu* (*Jiangsu University of Technology*); *Yang Yu* (*Jiangsu University of Technology*); *Weige Tao* (*Jiangsu University of Technology*); *Lianfeng Shen* (*Southeast University*);

Session 3P14a
Advanced Photonic Technologies for Energy Harvesting 2

Friday PM, August 3, 2018

Room A6

Organized by Feng Yan, Gang Li

Chaired by Paddy Kwok Leung Chan, Annie Ng

13:00 Systematic Bandgap Engineering of Graphene Quantum Dots and Applications for Photocatalytic Water Splitting and CO_2 Reduction
Yibo Yan (*Nanyang Technological University*); *Jie Chen* (*Nanyang Technological University*); *Nan Li* (*Nanyang Technological University*); *Jingqi Tian* (*Nanyang Technological University*); *Kaixin Li* (*Nanyang Technological University*); *Jizhou Jiang* (*Nanyang Technological University*); *Jiyang Liu* (*Zhejiang Sci-Tech University*); *Qinghua Tian* (*Zhejiang Sci-Tech University*); *Peng Chen* (*Nanyang Technological University*);

13:20 Investigation of Growth Approaches for High Quality Organometallic Halide Perovskites Based Solar Cells
Annie Ng (*Nazarbayev University*); *Zhiwei Ren* (*The Hong Kong Polytechnic University*); *Gang Li* (*Hong Kong Polytechnic University*); *Charles Surya* (*Nazarbayev University*);

13:40 Solution-processed Large Area Organic Single Crystal
Paddy Kwok Leung Chan (*The University of Hong Kong*);

14:00 Incorporation of π-conjugated Organic Semiconductors in Hybrid Perovskite Solar Cells for Enhancing Device Stability and Efficiency
Gang Li (*Hong Kong Polytechnic University*); *Ping-Li Qin* (*Wuhan Institute of Technology*); *Guang Yang* (*Hong Kong Polytechnic University*);

14:20 Alternative Plasmonic Materials in Photovoltaics: Photocurrent Gain with Conductive Nitride Nanopillars
Christin David (*Madrid Institute for Advanced Studies in Nanoscience (IMDEA Nanoscience)*);

Session 3P14b
SC3: Sensing Technique Enabled by Convergence of Radio and Optical Technologies

Friday PM, August 3, 2018

Room A6

Organized by Tetsuya Kawanishi, Akihiko Hirata

Chaired by Akihiko Hirata, Atsushi Kanno

14:40 Demonstration of 95 GHz Single RAU Linear Cell Radar over Fiber and Radar Propagation Study in Malaysia
Sevia Mahdaliza Idrus (*Universiti Teknologi Malaysia*); *F. Iqbal* (*Universiti Teknologi Malaysia*); *Atsushi Kanno* (*National Institute of Information and Communications Technology*); *Key Akama* (*Waseda University*); *Tetsuya Kawanishi* (*National Institute of Information and Communications Technology*); *Nadiatulhuda Zulkifli* (*Universiti Teknologi Malaysia*); *Arnidza Ramli* (*Universiti Teknologi Malaysia*); *M. R. Salim* (*Universiti Teknologi Malaysia*); *Azura Hamzah* (*Malaysia-Japan International Institute of Technology (MJIIT)*); *Nor Hisham Haji Khamis* (*Universiti Teknologi Malaysia*); *W. Sawada* (*Hitachi Kokusai Electric Inc.*); *Nobuhiko Shibagaki* (*Hitachi Kokusai Electric Inc.*); *Kennich Kashima* (*Hitachi Kokusai Electric Inc.*); *N. S. M. I. Cheong* (*Malaysia Airport (Sepan) Sdn Bhd*); *A. W. M. Yusof* (*Malaysia Airport (Sepan) Sdn Bhd*);

15:00 Interference Induced by Reflection on Aircraft Surfaces in Linear Cell Radar Systems Consisting of Remote Antenna Units Connected through Optical Fibers
Tetsuya Kawanishi (*National Institute of Information and Communications Technology*); *Key Akama* (*Waseda University*); *Atsushi Kanno* (*National Institute of Information and Communications Technology*); *Naokatsu Yamamoto* (*National Institute of Information and Communications Technology*);

15:20 Mitigation Techniques of Power Fading for Millimeter-wave Signal Transmission in Radio Over Fiber (RoF) Link
Norliza Mohamed (*UTM Razak School of Engineering and Advanced Technology*); *Sevia Mahdaliza Idrus* (*Universiti Teknologi Malaysia*); *Azura Hamzah* (*Malaysia-Japan International Institute of Technology (MJIIT)*); *Suriani Mohd Sam* (*Universiti Teknologi Malaysia*);

15:40 **Coffee Break**

16:00 Link Budget Analysis for Dual Sideband Optical Carrier Suppression RoF System
Syamsuri Yaakob (*UPM*); *Sevia Mahdaliza Idrus* (*Universiti Teknologi Malaysia*); *Muhammad Zamzuri Abdul Kadir* (*International Islamic University Malaysia*); *Mohd. Shahril Salleh* (*Next Generation Access Network Lab*); *Romli Mohamad* (*Next Generation Access Network Lab*); *Mohd Rashidi Che Beson* (*Universiti Malaysia Perlis*); *Zuraidah Zan* (*Universiti Putra Malaysia (UPM)*); *Mohd Adzir Mahdi* (*Universiti Putra Malaysia (UPM)*);

16:20 Investigation on 20-bit Consecutive Codes in High Performance Optical Burst Mode Receiver Configuration
Azura Hamzah (*Malaysia-Japan International Institute of Technology (MJIIT)*); *Adibah Mazwar* (*Malaysia-Japan International Institute of Technology (MJIIT)*); *Sevia Mahdaliza Idrus* (*Universiti Teknologi Malaysia*); *Norliza Mohamed* (*UTM Razak School of Engineering and Advanced Technology*); *Nadiatulhuda Zulkifli* (*Universiti Teknologi Malaysia*);

16:40 Asynchronous Electric Field Vector Measurement Using EO Sensor in Millimeter Wave Band
J. Kamada (*Gifu University*); *H. Uchida* (*Arkray Inc.*); *M. Tojyo* (*Think-Lands Co., Ltd.*); *Y. Oikawa* (*Think-Lands Co., Ltd.*); *K. Miyaji* (*Think-Lands Co., Ltd.*); *Shintaro Hisatake* (*Gifu University*);

17:00 Performance Evaluation of Optical Electric-field Sensor for Field Uniformity Testing of Radiated Immunity Test Systems
Michitaka Ameya (*National Institute of Advanced Industrial Science and Technology*); *Satoru Kurokawa* (*National Institute of Advanced Industrial Science and Technology*);

17:20 Non-destructive Inspection of Concrete Cracks Covered with Waterproof Coating by Millimeter-wave Imaging
Akihiko Hirata (*Chiba Institute of Technology*);

17:40 Silicon Photonic Resonator for Label-free Bio-sensing and Bio-coating Techniques on Silicon
Suruk Udomsom (*Chiang Mai University*); *Ukrit Mankong* (*Chiang Mai University*); *Nipon Theera-Umpon* (*Chiang Mai University*); *Nattapol Ittipratheep* (*Chiang Mai University*); *Toshimasa Umezawa* (*National Institute of Information and Communications Technology*); *Atsushi Matsumoto* (*National Institute of Information and Communications Technology*); *Naokatsu Yamamoto* (*National Institute of Information and Communications Technology*);

Session 3P15a
Light Manipulation, Propagation and Application 2

Friday PM, August 3, 2018

Room A7

Organized by Yangjian Cai

Chaired by Yangjian Cai

13:00 Tight Focusing and Particle Trapping Properties of Radially Polarized Beam with Laguerre-Gaussian Correlation Function
Lina Guo (*Guangdong Polytechnic Normal University*); *Li Chen* (*Guangdong Polytechnic Normal University*); *Yongzhu Chen* (*Guangdong Polytechnic Normal University*); *Lin Liu* (*Soochow University*); *Yangjian Cai* (*Soochow University*);

13:20 Generating and Measuring of Orbital Angular Momentum of Vortex Beams
Yuanjie Yang (*University of Electronic Science and Technology of China*); *Qi Zhao* (*University of Electronic Science and Technology of China*); *Miao Dong* (*University of Electronic Science and Technology of China*);

13:40 Thermal Blooming Effect of Truncated High-power Laser Beams Propagating through the Atmosphere
Xiaoqing Li (*Sichuan Normal University*); *Xiaoling Ji* (*Sichuan Normal University*);

14:00 Efficient Tensor Approach for Simulating Paraxial Propagation of Arbitrary Partially Coherent Beams
Xiaofeng Peng (*Soochow University*); *Fei Wang* (*Soochow University*); *Yangjian Cai* (*Soochow University*);

14:20 Overcoming the Classic Rayleigh Limit by Engineering the Correlation Functions of Illumination Fields
Fei Wang (*Soochow University*); *Chunhao Liang* (*Soochow University*); *Xiaofeng Peng* (*Soochow University*); *Yangjian Cai* (*Soochow University*);

14:40 Trapping Particles Using Tightly Focused Radially Polarized Beam with Laguerre-Gaussian Correlation Function
Lina Guo (*Guangdong Polytechnic Normal University*); *Li Chen* (*Guangdong Polytechnic Normal University*); *Yongzhu Chen* (*Guangdong Polytechnic Normal University*); *Lin Liu* (*Soochow University*); *Yangjian Cai* (*Soochow University*);

Session 3P15b
FocusSession.SC2: Plasmonics and Photonic Nanostructure Surfaces for Manipulation of Light

Friday PM, August 3, 2018

Room A7

Organized by Rongjun Zhang, Junpeng Guo

Chaired by Junpeng Guo

15:00 Invited Frontier of Grating Couplers: Resonator Integration and Functionality
Shogo Ura (*Kyoto Institute of Technology*); *Kenji Kintaka* (*National Institute of Advanced Industrial Science and Technology*); *Junichi Inoue* (*Kyoto Institute of Technology*);

15:20 Invited Plasmo-thermomechanical Radiation Detector with Si_3N_4 Waveguide Optical Readout Circuit
Ozdal Boyraz (*University of California-Irvine*); *Qiancheng Zhao* (*University of California-Irvine*); *Mohammad Wahiduzzaman* (*University of California-Irvine*);

15:40 **Coffee Break**

16:00 Metasurface Spectroscopic Analyzers
Masanobu Iwanaga (*National Institute for Materials Science*);

16:20 Disordered Array of Plasmonic Metal Nanoparticles for Strong Light Upconversion
S. Joon Kwon (*Korea Institute of Science and Technology*);

16:40 Unidirectional Coupling of Surface Plasmonic Waves on Silver Surfaces with Asymmetric Nanogroove Fabricated with Glancing Angle Deposition Technique
Chong-Cin Hou (*National Chun Chen University*); *Ti-Li Lin* (*National Chun Chen University*); *Hung-Chih Kan* (*National Chung Cheng University*);

17:00 A Radiative Cooling Method with High Emissivity in Atmospheric Window Based on Periodically-structured UV-curing Adhesive
Meng-Yu Gao (*Fudan University*); *Xue-Fei Han* (*Donghua University*); *Yu-Xiang Zheng* (*Fudan University*); *Qing-Hong Zhang* (*Donghua University*); *Liao Yang* (*Fudan University*); *Shang-Dong Yang* (*Fudan University*); *Wenjie Zhou* (*Fudan University*); *Pian Liu* (*Fudan University*); *Rongjun Zhang* (*Fudan University*); *Songyou Wang* (*Fudan University*); *Liangyao Chen* (*Fudan University*);

17:20 Gap-plasmon Resonance Perfect Light Absorber
Wonkyu Kim (*University of Alabama in Huntsville*); *Hong Guo* (*University of Alabama in Huntsville*); *Joshua R. Hendrickson* (*Air Force Research Laboratory*); *Junpeng Guo* (*University of Alabama in Huntsville*);

17:40 Invited Study of the High Efficiency of Photon-to-heat Conversion in the Wavelength Region of 250–1200 nm Based on a Thermoelectric Bi_2Te_3 Film Structure
E. T. Hu (*Nanjing University of Posts and Telecommunications*); *X. X. Liu* (*Nanjing University of Posts and Telecommunications*); *J. J. Zheng* (*Nanjing University of Post and Telecommunications*); *K. H. Yu* (*Nanjing University of Posts and Telecommunications*); *W. Wei* (*Nanjing University of Post and Telecommunications*); *Y. Yao* (*Fudan University*); *K. Y. Zang* (*Fudan University*); *Y. X. Zheng* (*Fudan University*); *R. J. Zhang* (*Fudan University*); *S. Y. Wang* (*Fudan University*); *H. B. Zhao* (*Fudan University*); *Liangyao Chen* (*Fudan University*); *A. Q. Jiang* (*Waseda University*); *O. Yoshie* (*Waseda University*); *Y. P. Lee* (*Hanyang University*); *C. Z. Wang* (*Iowa State University*); *D. W. Lynch* (*Iowa State University*); *J. P. Guo* (*University of Alabama in Huntsville*);

Session 3P16a
SC2: Optical Metamaterials for Environment and Energy Application 2

Friday PM, August 3, 2018

Room A8

Organized by Junichi Takahara, Kotaro Kajikawa

Chaired by Junichi Takahara, Kotaro Kajikawa

13:00 Invited — Wavelength-selective Metasurface Absorber and Emitter for Energy Applications
Atsushi Sakurai (*Niigata University*);

13:20 Invited — Integrated Absorber/Emitter Based on Microcavity Resonance for Solar Thermophotovoltaic Power Generation
Kentaro Iwami (*Tokyo University of Agriculture and Technology*); *Nashun* (*Tokyo University of Agriculture and Technology*); *J. Obunai* (*Tokyo University of Agriculture and Technology*);

13:40 Invited — Solar Selective Absorbers Using Submicron Structures Formed by Spinodal Decomposition
Makoto Shimizu (*Université de Lyon, CNRS, INSA-Lyon, Universite Claude Bernard Lyon 1*); *Fumitada Iguchi* (*Tohoku University*); *Hiroo Yugami* (*Tohoku University*);

14:00 Invited — Three-octave-bandwidth Ultra-broadband Light Absorber Consisting of a Bumpy Metal-insulator-metal Structure
Takayuki Okamoto (*RIKEN Nanophotonics Laboratory*); *Kentaro Takatori* (*RIKEN*); *Koji Ishibashi* (*RIKEN*);

Session 3P16b
SC2: Recent Advances on Photonic Metamaterials and Plasmonic Structures

Friday PM, August 3, 2018

Room A8

Organized by Atsushi Sanada, Tetsuya Ueda

Chaired by Atsushi Sanada, Tetsuya Ueda

14:20 Interplay between Magnetism and Chirality in Photonic Metamaterials
Satoshi Tomita (*Nara Instituteof Science and Technology (NAIST)*);

14:40 A New Waveguide Technology with a Ridge and Surrounding Metal Rods of $\lambda/4$ in Height and Its Applications
Hideki Kirino (*WGR Co. Ltd.*);

15:00 Broadband Light Absorber of Gold-covered Cicada Wing Surface
Kotaro Kajikawa (*Tokyo Institute of Technology*);

15:20 Recent Advances on Time-domain Nite Element Methods for Simulation of Invisibility Cloaks
Yunqing Huang (*Xiangtan University*); *Jichun Li* (*University of Nevada, Las Vegas*);

15:40 **Coffee Break**

16:00 Negative Refraction Phenomena in Metal-dielectric Stacks and Fishnet Metamaterials
Michel Lequime (*Aix-Marseille Universite, CNRS*); *Claude Amra* (*Universite Paul Cezanne*);

16:20 Electromagnetically Induced Transparency Using Nonlinear Metamaterials for Storage of Electromagnetic Waves
Toshihiro Nakanishi (*Kyoto University*); *Masao Kitano* (*Kyoto University*);

16:40 Deeply Profiled Titanium Nitride Plasmonic Grating Structures for Refractive Index Sensing
E. Shkondin (*Technical University of Denmark*); *T. Repan* (*Technical University of Denmark*); *Andrei V. Lavrinenko* (*Technical University of Denmark*); *Osamu Takayama* (*Technical University of Denmark*);

17:00 Subwavelength Focusing by Evanescent Wave Generation with a Tri-layer Metasurface
Atsushi Sanada (*Yamaguchi University*); *K. Ishii* (*Osaka University*); *Y. Katou* (*Osaka University*);

Session 3P17
SC3: Quantum Information Processing and Devices 2

Friday PM, August 3, 2018

Room A9

Organized by Hai-Zhi Song, Qiang Zhou

Chaired by Tongcang Li, Daniel Oblak

13:00 Invited — Preservation of Entangled States in Quantum Optical Circuits Designed for Multi-access Quantum Communication Systems
Vladimir Nikulin (*State University of New York at Binghamton*); *Rushui Fang* (*State University of New York at Binghamton*);

13:20 Invited — Rigorous Characterization Method for Photon-number Statistics with Hanbury-Brown-Twiss Setup
Masato Koashi (*The University of Tokyo*);

13:40 Hybrid Quantum Systems with Quantum Dots and Microwave/Nano-electromechanical Resonators (Invited)
Guangwei Deng (*University of Electronic Science and Technology of China*);

14:00 Measurement-device-independent Quantum Secure Direct Communication
Penghao Niu (*Tsinghua University*); *Liuguo Yin* (*Tsinghua University*); *Gui Lu Long* (*Tsinghua University*);

14:20 High-order Sideband Transitions in an Ultrastrongly-coupled cQED System (Invited)
Tiefu Li (*Tsinghua University*);

14:40 Synchrotron X-ray Characterization of Mg Doped NiO Epitaxial Thin Films
Yanna Chen (*National Institute for Materials Science (NIMS)*); *Osami Sakata* (*National Institute for Materials Science (NIMS)*); *Ryosuke Yamauchi* (*Tokyo Institute of Technology*); *Anli Yang* (*National Institute for Materials Science (NIMS)*); *Loku Singgappulige Rosantha Kumara* (*National Institute for Materials Science (NIMS)*); *Chulho Song* (*National Institute for Materials Science (NIMS)*); *Munetaka Taguchi* (*Nara Institute of Science and Technology (NAIST)*); *Toshiaki Ina* (*Nara Institute of Science and Technology (NAIST)*); *Yoshio Katsuya* (*National Institute for Materials Science (NIMS)*); *Hiroshi Daimon* (*Nara Institute of Science and Technology (NAIST)*); *Akifumi Matsuda* (*Tokyo Institute of Technology*); *Mamoru Yoshimoto* (*Tokyo Institute of Technology*);

15:00 Optomechanically-induced Transparency and Entanglement Generation Enhanced by Dissipation (Invited)
Yong-Chun Liu (*Tsinghua University*);

15:20 Applications of Spontaneous Four Wave Mixing on Quantum Communications (Invited)
Wei Zhang (*Tsinghua University*);

15:40 **Coffee Break**

16:00 Spin Optomechanics and Quantum Computing with Closely-spaced Spins (Invited)
Tongcang Li (*Purdue University*);

16:20 Enhancing Quantum Control by Bootstrapping a Quantum Processor of 12 Qubits (Invited)
Dawei Lu (*Southern University of Science and Technology*); *Keren Li* (*Tsinghua University*); *Jun Li* (*University of Waterloo*); *Hemant Katiyar* (*University of Waterloo*); *Annie Jihyun Park* (*University of Waterloo*); *Guanru Feng* (*University of Waterloo*); *Tao Xin* (*University of Waterloo*); *Hang Li* (*University of Waterloo*); *Gui Lu Long* (*Tsinghua University*); *Aharon Brodutch* (*University of Waterloo*); *Jonathan Baugh* (*University of Waterloo*); *Bei Zeng* (*University of Guelph*); *Raymond Laflamme* (*University of Waterloo*);

16:40 A AlGaAs-on-insulator Platform for Integrated Quantum Photonic Circuits with Quantum Dots
Rongbin Su (*Sun Yat-sen University*); *Beimeng Yao* (*Sun Yat-sen University*); *Juntao Li* (*Sun Yat-Sen University*); *Jin Liu* (*Sun Yat-Sen University*); *Xue-Hua Wang* (*Sun Yat-Sen University*);

17:00 Probing Multipartite Entanglement Structure with Two Witnesses (Invited)
He Lu (*University of Science and Technology of China*);

17:20 The Simulation of Boson Sampling with Qubit Systems (Invited)
Xiaoqi Zhou (*University of Science and Technology of China*); *He Lu* (*University of Science and Technology of China*); *Xu-Fei Yin* (*University of Science and Technology of China*); *Luo-Kan Chen* (*University of Science and Technology of China*); *Yu-Ao Chen* (*University of Science and Technology of China*); *Jian-Wei Pan* (*University of Science and Technology of China*);

17:40 All-optical Quantum Signal Demultiplexer
Yin-Hai Li (*USTC*); *Wen-Tan Fang* (*University of Science and Technology of China*); *Zhi-Yuan Zhou* (*University of Science and Technology of China*); *Lixin Xu* (*University of Science and Technology of China*); *Guangcan Guo* (*University of Science and Technology of China*); *Baosen Shi* (*University of Science and Technology of China*);

18:00 Manipulating Optical Schrödinger Cat State with an Optical Parametric Amplifier (Invited)
Xiaolong Su (*Shanxi University*); *Meihong Wang* (*Shanxi University*); *Zhongzhong Qin* (*Shanxi University*); *Miao Zhang* (*Shanxi University*); *Li Zeng* (*Shanxi University*); *Changde Xie* (*Shanxi University*); *Kunchi Peng* (*Shanxi University*);

18:20 Silicon Isotope Engineering for Quantum Information Processing (Invited)
Satoru Miyamoto (*Keio University*); *Kohei M. Itoh* (*Keio University*);

Session 3P18
EMC Problems with Antennas & Wave Propagation

Friday PM, August 3, 2018

Room A10

Organized by Rafal Przesmycki

Chaired by Marek Bugaj, Marian Tadeusz Wnuk

13:00 The Method for Determining Distinctive Features PC Hardware Interfaces Based on the Way They Turn
Rafal Przesmycki (*Military University of Technology*); *Marian Tadeusz Wnuk* (*Military University of Technology*);

13:20 The Configuration of Laboratory Stands for Testing Compromising Emanations from It Equipment
Leszek Nowosielski (*Military University of Technology*); *Dariusz Laskowski* (*Military University of Technology*); *Michal Nowosielski* (*Medical University of Warsaw*);

13:40 The Measurement Method of Radiated Emission for Power Generators
Rafal Przesmycki (*Military University of Technology*);

14:00 Measuring the Frequency Band of Transmiter for VSAT Satellite Terminals
Marek Bugaj (*Military University of Technology*);

14:20 The Meausrement of Signal Level for VSAT Satellite Terminals
Rafal Przesmycki (*Military University of Technology*);

14:40 Veryfication of Multi-access Techniques for VSAT Satellite Terminals
Marek Bugaj (*Military University of Technology*);

15:00 Microstrip Antenna with Phase Scanning
Rafal Przesmycki (*Military University of Technology*); *Marian Tadeusz Wnuk* (*Military University of Technology*); *Marek Bugaj* (*Military University of Technology*);

15:20 Linear Antenna Array on Multilayer Dielectric Substrate
Marian Tadeusz Wnuk (*Military University of Technology*); *Marek Bugaj* (*Military University of Technology*); *Rafal Przesmycki* (*Military University of Technology*);

15:40 **Coffee Break**

16:00 Applications of IT Equipment Protective Solutions against Electromagnetic Compromising Emanations
Leszek Nowosielski (*Military University of Technology*); *Jaroslaw Michalak* (*Military University of Technology*); *Michal Nowosielski* (*Medical University of Warsaw*);

16:20 Analysis of Scenarios for It Equipment Location from the Point of View of Electromagnetic Security
Leszek Nowosielski (*Military University of Technology*); *Marian Tadeusz Wnuk* (*Military University of Technology*); *Joanna Kuzba* (*Military University of Technology*);

16:40 Analysis of Disturbance of the Propagation of Electromagnetic Wave at the Edge of Terrain Obstacle
Marian Tadeusz Wnuk (*Military University of Technology*);

17:00 Simulations of SAR Values for Selected Telecommunications Devices
Marek Bugaj (*Military University of Technology*); *Marian Tadeusz Wnuk* (*Military University of Technology*); *Lukasz Blaszkiewicz* (*Military University of Technology*);

17:20 Effect of Interference Source with Directional Antenna on Radio Link in Non-line-of-sight Conditions
Cezary Ziolkowski (*Military University of Technology*); *Jan M. Kelner* (*Military University of Technology*); *Leszek Nowosielski* (*Military University of Technology*);

17:40 Degradation of Radio Link Capacity with Directional Antennas
Jan M. Kelner (*Military University of Technology*); *Cezary Ziolkowski* (*Military University of Technology*); *Leszek Nowosielski* (*Military University of Technology*);

18:00 Direction of Arrival Error for Localization Procedure of Sources with Directional Antenna
Jan M. Kelner (*Military University of Technology*); *Cezary Ziolkowski* (*Military University of Technology*); *Leszek Nowosielski* (*Military University of Technology*);

Session 3P0
Poster Session 4

Friday PM, August 3, 2018

14:00 PM - 17:00 PM

Room Foyer

1 A Wide-band Dual Circular Polarization UHF RFID Reader Antenna Based on Miniaturized Branch Line Coupler
Xiuhui Yang (*Southwest Jiaotong University*); *Quanyuan Feng* (*Southwest Jiaotong University*); *Dengyao Tian* (*Southwest Jiaotong University*); *Zongliang Zheng* (*Southwest Jiaotong University*);

2 A Novel Chipless RFID Tag Based on Backscattering Principle
Guo Chun Wan (*Tongji University*); *Yong Kang Kuang* (*Tongji University*); *Qing Xu* (*Tongji University*); *Mei Song Tong* (*Tongji University*);

3 A Broadband Circularly Polarized Slot Antenna with Ferrite Substrate for CNSS Application
Zhuang Xiong (*Southwest Jiaotong University*); *Quanyuan Feng* (*Southwest Jiaotong University*); *Zongliang Zheng* (*Southwest Jiaotong University*); *Dengyao Tian* (*Southwest Jiaotong University*);

4 Haze Removal with Automatic Recovery of the Atmospheric Light
Ruxi Xiang (*Changzhou Institute of Technology*); *Xifang Zhu* (*Changzhou Institute of Technology*); *Dongdong Hou* (*Changzhou Institute of Technology*); *Feng Wu* (*Changzhou Institute of Technology*); *Chao Xiong* (*Changzhou Institute of Technology*); *Qingquan Xu* (*Changzhou Institute of Technology*);

5 Drainage of Remaining Heavy Oil Reservoir by Implementing Electromagnetic Microwave with Nano-ferro Fluid Injection
Erdila Indriani (*Oil and Gas Production Engineering, Energy & Mineral Polytechnic Akamigas*); *Rizky Martareza Noor* (*Oil and Gas Production Engineering, Energy & Mineral Polytechnic Akamigas*); *Sudjati Rachmat* (*Bandung Institute of Technology*); *Ahmad Munir* (*Bandung Institute of Technology*); *Purnomosidi* (*University of Aberdeen*);

6 The Development of VLBI Digital Backend in SHAO
Renjie Zhu (*Shanghai Astronomical Observatory, Chinese Academy of Science*); *Yajun Wu* (*Shanghai Astronomical Observatory, Chinese Academy of Science*); *Jiyun Li* (*Shanghai Astronomical Observatory, Chinese Academy of Science*); *Shaoguang Guo* (*Shanghai Astronomical Observatory, Chinese Academy of Science*); *Jiangying Gan* (*Shanghai Astronomical Observatory, Chinese Academy of Science*); *Zhijun Xu* (*Shanghai Astronomical Observatory, Chinese Academy of Science*);

7 Electromagnetic Design of a Magnetic Suspended Motor Considering Temperature Influence
Xiaojun Ren (*University of Science and Technology Beijing*); *Xu Liu* (*Beijing Sumavision Technology Limited Company*);

8 Permittivity Retrieve of Glucose Concentration in Mimicking Blood Solutions
Wei Lin (*University of Texas Rio Grande Valley*); *Yong Zhou* (*University of Texas Rio Grande Valley*);

9 Open-Ended Coaxial Line Probe for Local Exposure at 26.5 GHz
Yasutaka Murakami (*Tokyo University of Agriculture and Technology*); *Toru Uno* (*Tokyo University of Agriculture and Technology*); *Takuji Arima* (*Tokyo University of Agriculture and Technology*);

10 Treatment with High-voltage Alternating Electric Field Normalizes the Autonomic Dysfunction in Depression: A Pilot Study Using Heart-rate Variability Analysis
Toshikazu Shinba (*Shizuoka Saiseikai General Hospital*); *Takaki Nedachi* (*Hakuju Institute for Health Science*); *Shinji Harakawa* (*Obihiro University of Agricultural and Veterinary Medicine*);

11 Development of Antenna for Local Anterior Exposure of Small Animal in 26.5 GHz Band
Sousuke Higashibata (*Tokyo University of Agriculture and Technology*); *Toru Uno* (*Tokyo University of Agriculture and Technology*); *Takuji Arima* (*Tokyo University of Agriculture and Technology*); *Yasutaka Murakami* (*Tokyo University of Agriculture and Technology*);

12 Design of a Novel Compact LTE/WWAN Antenna for Mobile Phone Applications
Ming Yang (*Anhui University*); *Yufa Sun* (*Anhui University*); *Zuming Li* (*Anhui University*);

13 A New High Gain Antenna Based on MIM Composite Extraordinary Optical Transmission Structure
Xuhui Zhang (*Anhui University*); *Minquan Li* (*Anhui University*); *Xu Pan* (*Anhui University*);

14 A Compact Directional Antenna for ADS-B Operation
Wen-Chung Liu (*National Formosa University*); *Tzu-Yi Tang* (*National Formosa University*); *Wen-Chi Lu* (*National Formosa University*);

15 Compact Chipless RFID Tag Based on Fractal Antennas and Multiple Microstrip Open Stub Resonators
Marwa E. Mousa (*Higher Institute of Engineering and Technology in New Damietta*); *Haythem Hussein Abdullah* (*Electronics Research Institute (ERI)*); *M. El din Abo El-Soud* (*Mansoura University*);

16 Differentially Fed Ring-shaped Planar Printed Antenna with Higher Order Mode Suppression
Chairunnisa (*Institut Teknologi Bandung*); *Rheyuniarto Sahlendar Asthan* (*Institut Teknologi Bandung*); *Agus Hendra Wahyudi* (*Chiba University*); *Achmad Munir* (*Institut Teknologi Bandung*);

17 Improved Scalable Deembedding Methodology for SiGe HBT Characterization
Chie-In Lee (*National Sun Yat-Sen University*); *Wei-Cheng Lin* (*National Sun Yat-Sen University*); *Yan-Ting Lin* (*National Sun Yat-Sen University*);

18 G-band Diplexer Based on ***E***-plane Waveguide Structures
Xiong Chen (*University of Electronic Science and Technology of China*); *Jiang Hu* (*University of Electronic Science and Technology of China*); *Xiang Le* (*University of Electronic Science and Technology of China*);

19 Design of 6 MW Pulse Transformer for a 2.5 MW C-band Magnetron
Dong Hyeok Jeong (*Dongnam Institute of Radiological & Medical Sciences*); *Heuijin Lim* (*Dongnam Institute of Radiological & Medical Sciences*); *Kyoung Won Jang* (*Dongnam Institute of Radiological & Medical Sciences*); *Sang Jin Lee* (*Dongnam Institute of Radiological & Medical Sciences*); *Manwoo Lee* (*Dongnam Institute of Radiological & Medical Sciences*);

20 Designs of High Power Ratio Dividers Using Left-handed Transmission Line Transformers
Shi-Ang Xu (*National University of Kaohsiung*); *Pu-Hua Deng* (*National University of Kaohsiung*);

21 Investigation of U-shaped Base Element for Storage Resonator of a Compact Resonant Microwave Pulse Compression System
Segey Artemenko (*National Research Tomsk Polytechnic University*); *Vladimir Avgustinovich* (*National Research Tomsk Polytechnic University*); *Vladislav Igumnov* (*National Research Tomsk Polytechnic University*); *Andrei Vladimirovich Mostovshchikov* (*Tomsk Polytechnic University*);

22 A Novel Wideband Rectifier Design with Two-stage Matching Network for Ambient Wireless Energy Harvesting
Yingbo Wu (*Anhui University*); *Jun Wang* (*Beijing Electro-mechanical Engineering Institute*); *Yanyang Liu* (*Anhui University*); *Minquan Li* (*Anhui University*);

23 Comparative Analysis of Gyrotrons Driven by External Signals
Yi Sheng Yeh (*Southern Taiwan University of Science and Technology*); *C. L. Hung* (*National Penghu University of Science and Technology*); *Tsun-Hun Chang* (*National Tsing Hua University*); *C. Y. Zheng* (*Southern Taiwan University of Science and Technology*); *W. J. Kao* (*Southern Taiwan University of Science and Technology*); *P. Y. Chiang* (*Southern Taiwan University of Science and Technology*); *Y. C. Chen* (*Southern Taiwan University of Science and Technology*);

24 A 3rd-order Tunable Filter with Constant Bandwidth
Qianyin Xiang (*Southwest Jiaotong University*); *Quanyuan Feng* (*Southwest Jiaotong University*);

25 The Extraction of Digital Surface Model over Deciduous Forest by Chinese GF-3 C-band SAR
Haoyang Yu (*Beijing Normal University*); *Zhongjun Zhang* (*Beijing Normal University*); *Wenjian Ni* (*Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences*);

26 Effect of Relativistic Positron Beam as a Progenitor to Study the Nonlinear Behaviour of Fully Relativistic Electron-positron-ion Plasma
Ridip Sarma (*University of Science and Technology*); *Nirab. C. Adhikary* (*Institute of Advanced Study in Science and Technology*);

27 Design of Fingerprint Identification Module with Automatic Power Saving for Smart Lock Based on DSP
Guo Chun Wan (*Tongji University*); *He Xu* (*Tongji University*); *Tao Wang* (*Tongji University*); *Mei Song Tong* (*Tongji University*);

28 A Novel Intelligent Door-lock and Management System Based on STM32 Microcontroller
Guo Chun Wan (*Tongji University*); *Chao Wang* (*Tongji University*); *Jian Zhou* (*Tongji University*); *Mei Song Tong* (*Tongji University*);

29 Radio Science Experiment on the Mission Venera-D: A Concept of the RF Subsystem and Radio Occultation Measurements
A. Gavrik (*Kotel'nikov Institute of Radio Engineering and Electronics*); *S. Kolomiets* (*Kotel'nikov Institute of Radio Engineering and Electronics*); *Yu. Gavrik* (*Kotel'nikov Institute of Radio Engineering and Electronics*); *T. Kopnina* (*Kotel'nikov Institute of Radio Engineering and Electronics*); *L. Lukanina* (*Kotel'nikov Institute of Radio Engineering and Electronics*); *Yaroslaw A. Ilyushin* (*Moscow State University*);

30 Detection of Small and Large Hidden Metallic Objects via Passive Millimeter Wave Imaging System with an Auto-segmentation Routine
Hakan Isiker (*Mersin University*); *Sevket Demirci* (*Mersin University*); *Betul Yilmaz* (*Mersin University*); *Serhat Gokkan* (*Mersin University*); *Caner Ozdemir* (*Mersin University*);

31 An Analysis of Relationship between Urban Heat Island in the Tropics in Extremely Hot Days with Land Use Using Landsat 8 Image — A Case Study in Hanoi Vietnam
Nguyen Thanh Hoan (*Institute of Geography, Vietnam Academy of Science and Technology*); *Tran Duy Phien* (*Institute of Geography, Vietnam Academy of Science and Technology*); *Dao Dinh Cham* (*Institute of Geography, Vietnam Academy of Science and Technology*);

32 Automatic Sport Fields Detection from China GF-1 Satellite Image Data via Improved SSD Model
Zhengchao Chen (*Institute of Remote Sensing and Digital Earth, CAS*); *Kaixuan Lu* (*Institute of Remote Sensing and Digital Earth, CAS*); *Xuan Yang* (*Institute of Remote Sensing and Digital Earth, CAS*); *Baipeng Li* (*Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences*); *Jianwei Gao* (*Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences*); *Mufeng Yao* (*Institute of Remote Sensing and Digital Earth, CAS*);

33 Impact of Usage of Multiple-satellite Sensors on Accuracy of Sea Surface Wind Data
Ayumi Koizumi (*Tokai University*); *Masahisa Kubota* (*Tokai University*); *Kunio Kutsuwada* (*Tokai University*);

34 Double Weighted Fourier Transform (DWFT) in Statistical Problems
Sergei I. Knizhin (*Irkutsk State University*); *Mikhail V. Tinin* (*Irkutsk State University*);

35 Experiment and FDTD Simulation of Antenna for the Microwave CT
Tomoya Hanashima (*Nihon University*); *Yoshio Nagayama* (*Nihon University*); *Tomohiko Asai* (*Nihon University*); *Toshifumi Moriyama* (*Nagasaki University*); *Toshiyuki Tanaka* (*Nagasaki University*); *Soichiro Yamaguchi* (*Nihon University*); *Hayato Tsuchiya* (*Nihon University*);

36 The Method of Adaptive Gaussian Decomposition Based Recognition and Extraction of Scattering Mechanisms
Xinyi He (*Science and Technology on Electromagnetic Scattering Laboratory*); *Pengcheng Gao* (*Science and Technology on Electromagnetic Scattering Laboratory*); *Wei Gao* (*Science and Technology on Electromagnetic Scattering Laboratory*); *Xiao Lin Mi* (*Science and Technology on Electromagnetic Scattering Laboratory*); *Yuan Zhang* (*Science and Technology on Electromagnetic Scattering Laboratory*);

37 Using Spectral Residual Method to Identification Buried Objects from GPR B-Scan Image
Yao Qin (*Henan University of Technology*); *Jing Wan* (*Henan University of Technology*); *Jieyi Yang* (*Henan University of Technology*); *Li Hong Qiao* (*Henan University of Technology*); *Chunhua Zhu* (*Henan University of Technology*); *Qifu Wang* (*Henan Academy of Science, Applied Physics Institute Co., Ltd*);

38 A Novel Encoding and Decoding Method for Packaging Goods Based on Grayscale-Information Matrix
Guo Chun Wan (*Tongji University*); *Wen Jing Liu* (*Tongji University*); *Jian Zhou* (*Tongji University*); *Mei Song Tong* (*Tongji University*);

39 Development of Middle-power W-band Gyrotron in IAP RAS
Mikhail Yu. Glyavin (*Federal State Budgetary Scientific Institution "Federal Research Center The Institute of Applied Physics of the Russian Academy of Sciences"*); *Mikhail D. Proyavin* (*Institute of Applied Physics of the Russian Academy of Sciences (IAP RAS)*); *Anton S. Sedov* (*Federal State Budgetary Scientific Institution "Federal Research Center The Institute of Applied Physics of the Russian Academy of Sciences"*); *Evgeni S. Semenov* (*Institute of Applied Physics of the Russian Academy of Sciences*); *Andrey S. Zuev* (*Federal Research Center "Institute of Applied Physics RAS"*); *Alexander I. Tsvetkov* (*Federal State Budgetary Scientific Institution "Federal Research Center The Institute of Applied Physics of the Russian Academy of Sciences"*);

40 Wavelength-dependent Terahertz Wave Modulation in Organic/Si Hybrid Structures
Joong Wook Lee (*Chonnam National University*);

41 Topological Propoties and Edge State in Parity-time Symmetrical Waveguide Array
Qi Dong Fu (*Shanghai Jiaotong University*);

42 Tuxene-based Perovskite Solar Cells
Sinil Choi (*Hannam University*); *Jong Hun Hong* (*Hannam University*); *Gyeongju Kim* (*Hannam University*); *Prem Prabhakaran* (*Hannam University*); *Namchul Cho* (*Soon Chun Hyang University*); *Jae Woong Jung* (*Kyung Hee University*); *Kwang-Sup Lee* (*Hannam University*);

43 Generating Surface Plasma Polariton Vortex Array with an Incident Donut Vector Beam and a Rectangular Four-slit Structure
Shu-Chun Chu (*National Cheng Kung University*); *Chun-Fu Kuo* (*National Cheng Kung University*);

44 A Metamaterial-inspired Structure for UHF RFID Tag Antenna
Jhih Cheng Su (*Tongji University*); *Xiao Jia Huang* (*Tongji University*); *Mei Song Tong* (*Tongji University*);

45 Metal-enhanced Fluorescence by Using Silver Nanorod on Hyperbolic Metamaterial Substrate
Chih-Hsien Lai (*National Yunlin University of Science and Technology*); *Kai-Hong Tsai* (*National Taiwan Ocean University*); *Ya-Chih Wang* (*National Taiwan Ocean University*); *Yuan-Fong Chou Chau* (*Universiti Brunei Darussalam*); *Hai-Pang Chiang* (*National Taiwan Ocean University*);

46 Based on Silicon-micro-ring-resonator and Triple-ring Cavity for Stable and Tunable Erbium Fiber Laser
Yung Hsu (*National Chiao Tung University*); *Yuan-Chia Chang* (*National Chiao Tung University*); *Chien-Hung Yeh* (*Feng Chia University*); *Chi-Wai Chow* (*National Chiao Tung University*); *Jing-Heng Chen* (*Feng Chia University*);

47 Dispersion Accommodation Based on a Defect Layer in Hollow Single-mode Bragg Fiber
Tongqing Liao (*Anhui University*); *Jian Wu* (*Anhui University*); *Tiezhen Jiang* (*Anhui University*); *Pei-Jun Cai* (*Jianghuai College of Anhui University*);

48 Removal of Stem Effect Generated in Fiber-optic Radiation Sensors Using an Optical Filter
Kyoung Won Jang (*Dongnam Institute of Radiological & Medical Sciences*); *Me Young Kim* (*Dongnam Institute of Radiological & Medical Sciences*); *Yeong-Rok Kang* (*Dongnam Institute of Radiological & Medical Sciences*); *Heuijin Lim* (*Dongnam Institute of Radiological & Medical Sciences*); *Manwoo Lee* (*Dongnam Institute of Radiological & Medical Sciences*); *Dong Hyeok Jeong* (*Dongnam Institute of Radiological & Medical Sciences*);

49 Visible Light Communication System Based on SC-FDMA
Ziyan Jia (*Jiangsu University of Technology*); *Yang Yu* (*Jiangsu University of Technology*); *Zhiwen Qian* (*Jiangsu University of Technology*); *Youlian Zhu* (*Jiangsu University of Technology*); *Yiqi Zhu* (*Jiangsu University of Technology*); *Weige Tao* (*Jiangsu University of Technology*); *Lianfeng Shen* (*Southeast University*);

50 Tunable Optical Delay Line Based on SOI Contradirectional Couplers with Sidewall-modulated Bragg Gratings
Xu Wang (*Huazhong University of Science and Technology*); *Jianji Dong* (*Huazhong University of Science and Technology*);

51 Short Range Visible Light Communication for Data Transfer Using Simple Optoelectronic Circuits
Yusuf Nur Wijayanto (*National Institute of Information and Communication Technology (NICT)*); *E. J. Pristianto* (*Indonesian Institute of Sciences*); *Dadin Mahmudin* (*Indonesian Institute of Sciences (LIPI)*); *Pham Tien Dat* (*National Institute of Information and Communications Technology*); *P. Adhi* (*Indonesian Institute of Sciences*);

52 Phase Stabilization in Onboard Microwave-band Fiber-optic Link
Mikhail E. Belkin (*Moscow Technological University MIREA*); *Alexander S. Sigov* (*Moscow Technological University MIREA*);

53 Design of High-Q Coils on Flexible PCB for Resonant Magnetic Coupling Wireless Power Transfer Systems
Hao-Chiao Hong (*National Chiao-Tung University*); *Yi Chiu* (*National Chiao Tung University*); *Chien-Nan Kuo* (*National Chiao-Tung University*);

54 Observation and Imaging of Meteors Using VHF Atmospheric Radar
Jenn-Shyong Chen (*China Medical University*);

55 Broadband Fractal Absorbers for Visible Regime
Ahsan Sarwar Rana (*Information Technology University (ITU)*); *Muhammad Qasim Mehmood* (*Information Technology University (ITU)*); *Muhammad Zubair* (*Information Technology University of the Punjab*);

56 Numerical Simulation on Thermal Response for Dynamic Non-destructive Detection of Weak Bonds in Carbon Fiber Reinforced Polymer
Yew Li Hor (*A*STAR Institute of High Performance Computing*); *Hong-Son Chu* (*A*STAR Institute of High Performance Computing*); *Viet Phuong Bui* (*A*STAR Institute of High Performance Computing*);

57 SAR Image Segmentation Based on Wavelet Transform Combined with Gabor Filter and SDD Threshold Selection
Yuyang Liu (*Shenyang Institute of Automation, Chinese Academy of Sciences*); *Zhenzhou Wang* (*Shenyang Institute of Automation, Chinese Academy of Sciences*); *Yang Cong* (*Shenyang Institute of Automation, Chinese Academy of Sciences*);

Session 4A1
SC5: Inverse Scattering 2

Saturday AM, August 4, 2018
Room T1
Organized by Motoyuki Sato, Toshifumi Moriyama
Chaired by Motoyuki Sato, Toshifumi Moriyama

08:30 An Inverse Scattering Method Using Time-reversed Fields with Edge-preserving Regularization
Toshifumi Moriyama (*Nagasaki University*); *Zhi Qi Meng* (*Fukuoka University*); *Takashi Takenaka* (*Nagasaki University*);

08:50 A Method for Extracting Information on Incident Field from Measured Total Field Data
Tomonori Tsuburaya (*Fukuoka University*); *Zhi Qi Meng* (*Fukuoka University*); *Takashi Takenaka* (*Nagasaki University*);

09:10 Reconstruction of a Dielectric Circular Cylinder Using Interval Analysis
Kenichi Ishida (*Kyushu Sangyo University*);

09:30 Microwave Imaging in a Dielectric Half-space Medium Bounded by a Metal Surface
Vladimir V. Razevig (*Bauman Moscow State Technical University*); *Sergey I. Ivashov* (*Bauman Moscow State Technical University*); *Nikolai Simonov* (*Electronics and Telecommunications Research Institute*); *Andrey V. Zhuravlev* (*Bauman Moscow State Technical University*); *Margarita A. Chizh* (*Bauman Moscow State Technical University*);

09:50 Iterative Reconstruction of Electrical Network's Graph Based on Their Time Domain Reflectogram
Geoffrey Beck (*CEA-LIST*); *Antoine Dupret* (*CEA-LIST*);

10:10 A Universal Fast Back Projection Method for Nonuniform Sampling Based on Nonuniform FFT
Yikun Zhao (*Beijing Institute of Technology*); *Yin Xiang* (*Institute of Electronics, Chinese Academy of Sciences*); *Zegang Ding* (*Beijing Institute of Technology*); *Tao Zeng* (*Beijing Institute of Technology*); *Teng Long* (*Beijing Institute of Technology*);

10:40 **Coffee Break**

Session 4A2
SC5: Subsurface Sensing and Imaging

Saturday AM, August 4, 2018
Room T2
Organized by Motoyuki Sato, Kangwook Kim
Chaired by Lorenzo Capineri, Kangwook Kim

08:30 A Hologram Reconstruction Algorithm for Landmine Recognition and Classification Based on Microwave Holographic Radar Data
G. Borgioli (*Universita degli Studi di Firenze*); *Luca Bossi* (*University of Florence*); *Lorenzo Capineri* (*Universita di Firenze*); *P. Falorni* (*Universita degli Studi di Firenze*); *Timothy D. Bechtel* (*Franklin & Marshall College*); *F. Crawford* (*Franklin & Marshall College*); *Masaharu Inagaki* (*Walnut Ltd.*); *Gennadiy Pochanin* (*O. Ya. Usikov Institute for Radiophysics and Electronics of the NAS of Ukraine*); *V. Ruban* (*O. Ya. Usikov Institute for Radiophysics and Electronics of the NAS of Ukraine*); *L. Varyanitza-Roschupkina* (*Usikov Institute for Radiophisics and Electronics-National Academy of Sciences of Ukraine*); *T. Ogurtsova* (*O. Ya. Usikov Institute for Radiophysics and Electronics of the NAS of Ukraine*);

08:50 Evaluation Test of Dual Sensor ALIS for Landmine Detection in Cambodia
Motoyuki Sato (*Tohoku University*); *Kazutaka Kikuta* (*Tohoku University*);

09:10 Comparison of Generalized Multilayer Stolt Migration with Reverse-time Migration
Haewon Jung (*Gwangju Institute of Science and Technology*); *Kangwook Kim* (*Gwangju Institute of Science and Technology*);

09:30 Object Identification from GPR Images by Deep Learning Using FDTD Simulation with GPU Cluster
Jun Sonoda (*National Institute of Technology, Sendai College*); *T. Kimoto* (*National Institute of Technology, Oita College*);

09:50 Penetration of GPR Waves through Reinforced Concrete
Hantao Lu (*Xiamen University*); *Hai Liu* (*Xiamen University*); *Bangan Xing* (*Xiamen University*); *Feng Han* (*Xiamen University*); *Qing Huo Liu* (*Duke University*);

10:40 **Coffee Break**

Session 4A3
SC1: Novel Mathematical Methods in Electromagnetics 1

Saturday AM, August 4, 2018

Room T3

Organized by Kazuya Kobayashi, Yury V. Shestopalov

Chaired by Kazuya Kobayashi, Yury V. Shestopalov

08:30 Nonlinear Hybrid Waves in a Cylindrical Anisotropic Metal-dielectric Waveguide
Eugene Smolkin (*Penza State University*); *Maxim Snegur* (*Penza State University*); *Yury V. Shestopalov* (*University of Gavle*);

08:50 Multi-contour Saddle Point Method on Dispersion Diagrams for Computing Transient Wave Field Components in Waveguides
Andrey V. Shanin (*Moscow State University*); *Andrey Igorevich Korolkov* (*Moscow State University*); *K. S. Knyazeva* (*Moscow State University*);

09:10 The Method of Relocation of Boundary Condition for the Problem of Electromagnetic Wave Scattering by Perfectly Conducting Thin Objects
Sergey Nikolaevich Fetisov (*Institute of Numerical Mathematics of the Russian Academy of Sciences*); *Aleksey Viktorovich Setukha* (*Lomonosov Moscow State University*);

09:30 Reconstructing Permittivity and Permeability of Multi-sectional Anisotropic Diaphragms
Ekaterina Dmitrievna Derevyanchuk (*Penza State University*); *Yury G. Smirnov* (*Penza State University*); *Yury V. Shestopalov* (*University of Gavle*);

09:50 Reconstruction of Electromagnetic Parameters of a Thin Anisotropic Dielectric Slab
Ekaterina Dmitrievna Derevyanchuk (*Penza State University*); *Yury V. Shestopalov* (*University of Gavle*); *Natalia Vladimirovna Derevyanchuk* (*Penza State University*);

10:10 The Synthesis Problem of Multilayered Coating Using Metamaterials
Ekaterina Dmitrievna Derevyanchuk (*Penza State University*); *A. S. Shutkov* (*Penza State University*); *Yury G. Smirnov* (*Penza State University*);

10:40 **Coffee Break**

Session 4A4
SC1: Electromagnetic Simulation and Modeling Methods for Metamaterials and Plasmonics

Saturday AM, August 4, 2018

Room T4

Organized by Li Jun Jiang, Xiaoyan Xiong

Chaired by Xiaoyan Xiong

08:30 Rigorous Formulas for Tensor Metasurface Analysis
Bo O. Zhu (*Nanjing University*);

08:50 The Multiphysics Solution to Maxwell-hydrodynamic Equations for Modeling Terahertz Generation from Plasmonic Metasurfaces
Ming Fang (*Anhui University*); *Zhi-Xiang Huang* (*Anhui University*); *Wei E. I. Sha* (*Zhejiang University*); *Xianliang Wu* (*Anhui University*);

09:10 Analysis of Left-handed Materials Using Associated Hermite FDTD Method
Zheng-Yu Huang (*Nanjing University of Aeronautics and Astronautics*);

09:30 Invited Orbital Angular Momentum Detection Using Geometric-phase Based Metasurfaces
Menglin L. N. Chen (*The University of Hong Kong*); *Li Jun Jiang* (*University of Hong Kong*); *Wei E. I. Sha* (*Zhejiang University*);

10:40 **Coffee Break**

Session 4A5
MIMO Antenna and MIMO array

Saturday AM, August 4, 2018

Room T5

Chaired by Churng-Jou Tsai

08:30 Compacted 8 MIMO Antenna Design for Wi-Fi AP
Zhi-Teng Wang (*Kun Shan University*); *Churng-Jou Tsai* (*Kun Shan University*);

08:50 Directivity Measurement of Circular Phased Array $\mathbf{4 \times 4}$ MIMO Antenna
Taiki Fukushima (*Toyama University*); *Kazuhiro Honda* (*Toyama University*); *Koichi Ogawa* (*Toyama University*);

09:10 Dual-circular $\mathbf{8 \times 8}$ MIMO Array with Synchronized Beam Scan for Over-Gbps Inter-vehicle Communications
Kazuhiro Honda (*Toyama University*); *Taiki Fukushima* (*Toyama University*); *Koichi Ogawa* (*Toyama University*);

09:30 A Three-antenna Design Applicable for MIMO Operations on Wi-Fi Routers
Hao-De Tang (*National Taiwan University of Science and Technology*); *Tsai-Yun Chuang* (*National Taiwan University of Science and Technology*); *Yi-Chung Li* (*National Taiwan University of Science and Technology*); *Wen-Jiao Liao* (*National Taiwan University of Science and Technology*);

09:50 A Pattern-reconfigurable Two-patch Antenna Design for MIMO Operations
Yi-Chung Li (*National Taiwan University of Science and Technology*); *Tsai-Yun Chuang* (*National Taiwan University of Science and Technology*); *Hao-De Tang* (*National Taiwan University of Science and Technology*); *Wen-Jiao Liao* (*National Taiwan University of Science and Technology*);

10:10 8-loop Antenna Array in the 5 Inches Size Smartphone for 5G Communication the 3.4 GHz–3.6 GHz Band MIMO Operation
Li-Yan Rao (*Kun Shan University*); *Churng-Jou Tsai* (*Kun Shan University*);

10:40 **Coffee Break**

Session 4A6
Microwave Photonics, THz Technology

Saturday AM, August 4, 2018

Room T6

Chaired by Akira Enokihara, Cun-Jun Ruan

08:30 Double Crossed Planar Bow-tie on a Lens Antenna at Terahertz Frequency for Imaging Application
Arie Pangesti Aji (*Universitas Indonesia*); *Catur Apriono* (*Universitas Indonesia*); *Fitri Yuli Zulkifli* (*University of Indonesia*); *Eko Tjipto Rahardjo* (*University of Indonesia*);

08:50 Visualization of the Electrical Field in the Vicinity of a THz Pulse Exposed Cell with FDTD Simulation
Aki Fujita (*Science and Technology Research Inst. Co.*);

09:10 Compensation of Third-order Inter Modulation Distortion by Using Frequency Chirp Modulation for Electro-optic Modulator
Yuta Kashiwagi (*University of Hyogo*); *Kosuke Takase* (*University of Hyogo*); *Tadashi Kawai* (*University of Hyogo*); *Akira Enokihara* (*University of Hyogo*); *Naokatsu Yamamoto* (*National Institute of Information and Communications Technology*); *Tetsuya Kawanishi* (*National Institute of Information and Communications Technology*);

09:30 Design of the Terahertz Near Field Imaging Discreteer Based on Graphene Monolayer Strip Structure
Shengyu Shan (*Beihang University*); *Cun-Jun Ruan* (*Beihang University*);

09:50 Terahertz Polariton Dispersion in Uniaxial Optical Crystals
Seiji Kojima (*University of Tsukuba*);

10:10 Invited Theoretical and Experimental Studies on THz Radiation via Two-color Laser Scheme
Wei-Min Wang (*Institute of Physics, CAS*); *Z.-M. Sheng* (*Shanghai Jiao Tong University*); *Y.-T. Li* (*Institute of Physics, CAS*); *L.-L. Zhang* (*Capital Normal University*); *Y. Zhang* (*Capital Normal University*); *C.-L. Zhang* (*Capital Normal University*); *X.-C. Zhang* (*Capital Normal University*); *J. Zhang* (*Shanghai Jiao Tong University*);

10:40 **Coffee Break**

Session 4A7
SC2: Metasurfaces and Metamaterials for Antenna Applications 1

Saturday AM, August 4, 2018

Room T7

Organized by Toru Uno, Naobumi Michishita

Chaired by Toru Uno, Naobumi Michishita

08:30 Planar CRLH Leaky-wave Antenna with Asymmetric Unit Cells
Yujiro Kushiyama (*Tokyo University of Agriculture and Technology*); *Takuji Arima* (*Tokyo University of Agriculture and Technology*); *Toru Uno* (*Tokyo University of Agriculture and Technology*);

08:50 Leaky-wave Antennas Using Composite Right/Left-handed Cylindrical Waveguides
Shigeyuki Nishimura (*Doshisha University*); *Jungo Nakajima* (*Doshisha University*); *Hiroyuki Deguchi* (*Doshisha University*); *Mikio Tsuji* (*Doshisha University*);

09:10 Miniaturized Coaxially Fed Antenna Using Composite Right/Left-handed Transmission Lines
Takatsugu Fukushima (*National Defense Academy*); *Naobumi Michishita* (*National Defense Academy of Japan*); *Hisashi Morishita* (*National Defense Academy*); *Naoya Fujimoto* (*Hitachi Kokusai Electric Inc.*);

09:30 Dual-band Mushroom Antenna
Shuhei Terada (*Kyoto Institute of Technology*); *Tetsuya Ueda* (*Kyoto Institute of Technology*); *Masakazu Ikeda* (*Kyoto Institute of Technology*); *Yuji Sugimoto* (*Kyoto Institute of Technology*); *Shiro Koide* (*Kyoto Institute of Technology*);

09:50 Beam Direction Control Using Meta-surface Loaded with Diodes for IoT
Tamami Maruyama (*National Institute of Technology*); *K. Ozeki* (*National Institute of Technology*); *N. Ito* (*National Institute of Technology*); *S. Kameda* (*Tohoku University*); *Q. Chen* (*Tohoku University*); *N. Suematsu* (*Tohoku University*);

10:10 Broadband Reflecting Metasurface Polarizer
Warangkana Chaihongsa (*King Mongkut's Institute of Technology Ladkrabang*); *Koichi Furuya* (*Kumamoto University*); *Takeshi Fukusako* (*Kumamoto University*); *Chuwong Phongcharoenpanich* (*King Mongkut's Institute of Technology*);

10:40 **Coffee Break**

Session 4A8
FocusSession.SC3: Quantum Optics with Topological Materials 1

Saturday AM, August 4, 2018

Room T8

Organized by George W. Hanson, Mauro Antezza

Chaired by George W. Hanson, Mauro Antezza

08:30 Quantum Photonics with Type II Weyl Semimetals
Invited
Prineha Narang (*Harvard University*); *Jennifer Coulter* (*Harvard University*);

08:50 Spontaneous Lateral Atomic Recoil Force and Torque
Invited Close to a Photonic Topological Material
S. A. H. Gangaraj (*Cornell University*); *F. Monticone* (*Cornell University*); *Mario G. Silveirinha* (*University of Lisbon*); *George W. Hanson* (*University of Wisconsin-Milwaukee*); *Mauro Antezza* (*Universite de Montpellier*);

09:10 Non-Abelian Berry Phases in Topological Photonics
Invited
Thomas Christensen (*Massachusetts Institute of Technology*); *Ling Lu* (*Institute of Physics, Chinese Academy of Sciences*);

09:30 Bianisotropic Metamaterial for Achieving Spin-orbit
Invited Coupling and Ideal Weyl Degeneracies
Shuang Zhang (*University of Birmingham*);

09:50 Quantum Physics with Plasmons in Graphene and
Keynote Other Atomic-scale Systems
F. Javier Garcia De Abajo (*ICFO Institut de Ciencies Fotoniques, Mediterranean Technology Park*);

10:20 The Quantum Spin Hall Effect of Light: Photonic
Invited Analog of 3D Topological Insulators
Franco Nori (*Advanced Science Institute, RIKEN*);

10:40 **Coffee Break**

Session 4A9
FocusSession.SC2: Advances in Nanolasers 3

Saturday AM, August 4, 2018

Room A1

Organized by Renmin Ma, Qing Zhang

Chaired by Renmin Ma

08:30 Interfacial Exciton Dynamics
Invited
Bo Peng (*University of Electronic Science and Technology of China*); *Yue Li* (*University of Electronic Science and Technology of China*); *Jian Li* (*University of Electronic Science and Technology of China*);

08:50 Laser Cooling in Semiconductors
Invited
Jun Zhang (*Institute of Semiconductors, Chinese Academy of Sciences, University of Chinese Academy of Science*);

09:10 Hybrid Pervoskite Materials and the Related Plas-
Invited monic Nanolasers
Zhijie Wang (*Institute of Semiconductors, Chinese Academy of Sciences*);

09:30 Continuous-wave Lasing from Chemical Vapor Depo-
Invited sition Derived Monolayer MoS_2 Crystals
Qing Zhang (*Peking University*);

09:50 PerovLight: Harness Strong Light-matter Coupling in
Invited Perovskite Materials towards Coherent Excitonic and Polaritonic Lasers
Qihua Xiong (*Nanyang Technological University*); *Rui Su* (*Nanyang Technological University*);

10:40 **Coffee Break**

Session 4A10
SC2: Meta-X: Beyond Metamaterials 1

Saturday AM, August 4, 2018

Room A2

Organized by Osamu Sakai, Satoshi Tomita

Chaired by Osamu Sakai, Satoshi Tomita

08:30 Phase Singularities in Moiré Type Metasurfaces
Invited
Seigo Ohno (*Tohoku University*); *Hiromichi Hoshina* (*Terahertz Sensing and Imaging Research Team, RIKEN*); *Hiroaki Minamide* (*RIKEN*); *Teruya Ishihara* (*Tohoku University*);

08:50 Frequency Conversion by Using Temporal Boundary
Invited in Terahertz Region
Fumiaki Miyamaru (*Shinshu University*); *Chihiro Mizuo* (*Shinshu University*); *Yuichi Honma* (*Shinshu University*); *Yosuke Nakata* (*The University of Tokyo*); *Toshihiro Nakanishi* (*Kyoto University*); *Keisuke Takano* (*Shinshu University*); *Julien Madeo* (*Okinawa Institute of Science and Technology Graduate University*); *Keshav M. Dani* (*Okinawa Institute of Science and Technology Graduate University*);

09:10 All-dielectric Structured Materials for the Future of
Invited Metamaterials
Willie J. Padilla (*Duke University*);

09:30 THz Tunable Metamaterial Based on Micro-
Invited electromechanical Technologies
Yoshiaki Kanamori (*Tohoku University*);

09:50 Strong Enhancement of Local Electric Field and Mi-
Invited croplasma Generation in an Electromagnetically Induced Transparency Like Metasurface
Yasuhiro Tamayama (*Nagaoka University of Technology*); *Osamu Sakai* (*The University of Shiga Prefecture*);

10:10 The Multidimensional Concept of Metamaterials
Invited
Ari Sihvola (*Aalto University*);

10:40 **Coffee Break**

Session 4A11
FocusSession.SC3: Advanced Photonic Technologies for Spectroscopic Applications: Devoted to Prof. Frank K. Tittel 1

Saturday AM, August 4, 2018

Room A3

Organized by Wei Dong Chen, Vincenzo Spagnolo

Chaired by Wei Dong Chen, Vincenzo Spagnolo

08:30 Mid-infrared Laser Based Trace Gas Sensor Technolo-
Keynote gies: Recent Advances and Applications
Frank K. Tittel (*Rice University*);

09:00 Dual-gas Photoacoustic Sensor for SF6 Decomposi-
Invited tion Detection
Lei Dong (*Shanxi University*); *H. Wu* (*Shanxi University*); *X. Yin* (*Shanxi University*); *S. Jia* (*Shanxi University*); *Frank K. Tittel* (*Rice University*);

09:20 Fiber-laser Intracavity Quartz-enhanced Photoacous-
Invited tic Spectroscopy
Wei Ren (*The Chinese University of Hong Kong*); *Qiang Wang* (*The Chinese University of Hong Kong*); *Zhen Wang* (*The Chinese University of Hong Kong*); *Pietro Patimisco* (*Universita degli Studi di Bari and Politecnico di Bari*); *Angelo Sampaolo* (*Universita degli Studi di Bari and Politecnico di Bari*); *Vincenzo Spagnolo* (*Technical University of Bari*);

09:40 Quartz Enhanced Photoacoustic Sensor for Hydrocar-
Invited bon Detection Employing a Single Interband Cascade Laser
Angelo Sampaolo (*Technical University of Bari*); *Sebastian Csutak* (*Aramco Service Company*); *Pietro Patimisco* (*Universita degli Studi di Bari and Politecnico di Bari*); *Marilena Giglio* (*Politecnico and University of Bari*); *Giansergio Menduni* (*Politecnico and University of Bari*); *Arianna Elefante* (*Politecnico and University of Bari*); *Vittorio Passaro* (*Politecnico di Bari*); *Frank K. Tittel* (*Rice University*); *Max Deffenbaugh* (*Aramco Service Company*); *Vincenzo Spagnolo* (*Technical University of Bari*);

10:00 Ethylene Trace Gas Detection Exploiting a Compact Quartz-enhanced Photoacoustic Spectroscopy-based Sensor
Marilena Giglio (*Technical University of Bari*); *Pietro Patimisco* (*Universita degli Studi di Bari and Politecnico di Bari*); *Angelo Sampaolo* (*Technical University of Bari*); *Arianna Elefante* (*Politecnico and University of Bari*); *Fabrizio Sgobba* (*Università degli Studi di Bari and Politecnico di Bari*); *Frank K. Tittel* (*Rice University*); *Vincenzo Spagnolo* (*Technical University of Bari*);

10:40 **Coffee Break**

Session 4A12
FocusSession.SC3&SC4: Recent Advances in Devices and System Technologies for Terahertz Wireless Communications 1

Saturday AM, August 4, 2018

Room A4

Organized by Tadao Nagatsuma, Guillaume Ducournau

Chaired by Tadao Nagatsuma, Guillaume Ducournau

08:30 Invited — Resonant-tunneling-diode Terahertz Oscillators for Wireless Communications
Safumi Suzuki (*Tokyo Institute of Technology*); *Masahiro Asada* (*Tokyo Institute of Technology*);

08:50 Keynote — 300-GHz-band Communication Using Silicon CMOS Integrated Circuits
Minoru Fujishima (*Hiroshima University*);

09:20 Invited — THz Silicon Systems on Chip: A Moore-Maxwell Approach
Kaushik Sengupta (*Princeton University*);

09:40 Invited — Recent Progress on Silicon-based THz Circuits: Large-scale, High-density Arrays and Spectroscopy/Metrology Microsystems
Ruonan Han (*Massachusetts Institute of Technology*);

10:00 Invited — Progress of 350 GHz-band Corporate-feed Plate-laminated Waveguide Slot Array Antennas
Jiro Hirokawa (*Tokyo Institute of Technology*); *Takashi Tomura* (*Tokyo Institute of Technology*); *Tadao Nagatsuma* (*Osaka University*); *Hiroyuki Seto* (*Kyoto University*); *Yoshiyuki Inoue* (*Kyoto University*); *Mikiko Saito* (*Waseda University*);

10:20 Invited — Millimeter-wave CMOS Transceiver toward 1 Tbps Wireless Communication
Kenichi Okada (*Tokyo Institute of Technology*);

10:40 **Coffee Break**

Session 4A13
SC3: Progresses in the Study of Topological Waves 1

Saturday AM, August 4, 2018

Room A5

Organized by Jian-Hua Jiang, Xiao Hu

Chaired by Xiao Hu, Jie Ren

08:30 Invited — PT-symmetric Interface States Based on Synthetic 4D Topological Space
Qiang Wang (*Nanjing University*); *Kun Ding* (*The Hong Kong University of Science and Technology*); *C. T. Chan* (*The Hong Kong University of Science and Technology*); *Hui Liu* (*Nanjing University*);

08:50 Keynote — Topological Electromagnetics with Time-reversal Symmetry
Xiao Hu (*National Institute for Materials Science*);

09:20 Invited — Non-Hermiticity-based Topological Insulating Phase of Light
Kenta Takata (*NTT Corporation*); *Masaya Notomi* (*NTT Corporation*);

09:40 Invited — Robust Dark Solitons in Lieb Polariton Topological Insulators
Fangwei Ye (*Shanghai Jiao Tong University*);

10:00 Invited — Waveguiding in Valley Photonic Crystals
Baile Zhang (*Nanyang Technological University*);

10:20 Invited — Simulating Quantum Spin Hall Effect in Topological Linear Circuit Networks
Jie Ren (*Tongji University*);

10:40 **Coffee Break**

Session 4A14
Emerging Electromagnetic Functionalization of Graphene and 2D Materials for Terahertz Device Applications 1

Saturday AM, August 4, 2018

Room A6

Organized by Taiichi Otsuji

Chaired by Victor Ryzhii, Taiichi Otsuji

08:30 Auger Recombination in Graphene with Spectral Broadening and Renormalization by Electron-electron Interaction
Akira Satou (*Tohoku University*); *Victor Ryzhii* (*Tohoku University*); *Vladimir Vyurkov* (*Institute of Physics and Technology, RAS*); *Georgy Alymov* (*Moscow Institute of Physics and Technology*); *Dmitry Svintsov* (*Moscow Institute of Physics and Technology*);

08:50 Origins of Sub-terahertz Photoresponse in Graphene Transistors
D. Bandurin (*University of Manchester*); *I. Gayduchenko* (*Moscow State University of Education (MSPU)*); *M. Moskotin* (*Moscow State University of Education (MSPU)*); *G. Fedorov* (*Moscow Institute of Physics and Technology (State University)*); *Dmitry Svintsov* (*Moscow Institute of Physics and Technology*);

09:10 Invited Nano-carbon Flexible Photonics and Plasmonics for Terahertz Imaging and Spectroscopy
Yukio Kawano (*Tokyo Institute of Technology*);

09:30 Keynote A Brief History of Growth of High Quality Graphene on 3C-SiC/Si via Thermal Decomposition Method
Maki Suemitsu (*Tohoku University*);

10:00 Invited Terahertz Detection with Asymmetric Dual Grating Gate Bilayer Graphene Field-effect-transistor
Juan Antonio Delgado Notario (*Salamanca University*); *Vito Cleric* (*Salamanca University*); *Yahya Moubarak Meziani* (*Salamanca University*); *Enrique Diez* (*Salamanca University*); *Jesus Enrique Velazquez-Perez* (*Universidad de Salamanca*); *Takashi Taniguchi* (*National Institute for Materials Science*); *Kenji Watanabe* (*National Institute for Materials Science*); *Deepika Yadav* (*Tohoku University*); *Taiichi Otsuji* (*Tohoku University*);

10:40 **Coffee Break**

Session 4A15
FocusSession.SC2&SC3: Light Manipulation and Micro-/Nano-structured Optoelectronic Devices 2

Saturday AM, August 4, 2018

Room A7

Organized by Liu Yang, Yoichi Okuno

Chaired by Liu Yang, Yoichi Okuno

08:30 Growth of Large Area MoS_2 Monolayers by Using Periodic Structures
Kai-Hsiang Ke (*National Chung Cheng University*); *Yao-Ching Chiu* (*National Chung Cheng University*); *Ming-Yen Lu* (*National Tsing-Hua University*); *Vladimir E. Fedorov* (*Nikolaev Institute of Inorganic Chemistry, Siberian Branch of Russian Academy of Sciences*); *Hsiang-Chen Wang* (*National Chung Cheng University*);

08:50 Nano-structure MoS_2/Cu_2O Biosensor
Rou-Yin Pan (*National Chung Cheng University*); *Cheng-Wei Liu* (*National Chung Cheng University*); *Ming-Yen Lu* (*National Tsing-Hua University*); *Chie-Tong Kuo* (*National Sun Yat-Sen University*); *Shih-Wei Feng* (*National University of Kaohsiung*); *Vladimir E. Fedorov* (*Nikolaev Institute of Inorganic Chemistry, Siberian Branch of Russian Academy of Sciences*); *Hsiang-Chen Wang* (*National Chung Cheng University*);

09:10 Analysis for the Electro-optic Modulation Dependences of $Batio_3$ Crystal Thin-film Waveguide on the System Architecture in Two-dimensional Space-freedom
Mengxi Luo (*Changchun University of Science & Technology*); *Na Sun* (*Changchun University of Science and Technology*); *Kaiping Zhang* (*Institute of Microelectronics of the Chinese Academy of Sciences*); *Ben Niu* (*Nanjing University*); *Xiangyu Sun* (*Changchun University of Science and Technology*); *Yuan Hu* (*Institute of Microelectronics of the Chinese Academy of Sciences*); *Di Wu* (*Nanjing University*); *De Gui Sun* (*Changchun University of Science & Technology; University of Ottawa*);

09:30 High-Q Supercavity States in High-index Subwavelength All-dielectric Resonators
Kirill L. Koshelev (*ITMO University*); *A. A. Bogdanov* (*ITMO University*); *S. A. Gladyshev* (*ITMO University*); *Zarina F. Sadrieva* (*ITMO University*); *Polina V. Kapitanova* (*ITMO University*); *Mikhail V. Rybin* (*National Research University for Information Technology, Mechanics and Optics*); *K. B. Samusev* (*ITMO University*); *Mikhail F. Limonov* (*ITMO University*); *Yuri S. Kivshar* (*Australian National University*);

09:50 Polarized Bound State in the Continuum and Resonances with Tunable $\boldsymbol{Q}$-factor in an Anisotropic Photonic Crystal
Ivan V. Timofeev (*Kirensky Institute of Physics, Federal Research Center KSC SB RAS*); *Dmitry N. Maksimov* (*MF Reshetnev Siberian State University of Science and Technology*); *Almas F. Sadreev* (*Siberian Federal University*);

10:10 An Ultra-short Silicon Polarization Beam Splitter Based on Asymmetrical Directional Coupler
Jing-Li Wang (*Nanjing University of Posts and Telecommunications*); *Le Yu* (*Nanjing University of Posts and Telecommunications*); *Zi-Yu Chen* (*Nanjing University of Posts and Telecommunications*); *Heming Chen* (*Nanjing University of Posts and Telecommunications*);

10:40 **Coffee Break**

Session 4A16
Metamaterials and Plasmonics 1

Saturday AM, August 4, 2018

Room A8

Chaired by Hiroyuki Deguchi, Mikio Tsuji

08:30 Hyperbolic Metamaterials Composed of Alminum-doped Zinc Oxide Nanotrenches for Mid-infrared Bio/Chemo Sensing
E. Shkondin (*Technical University of Denmark*); *T. Repan* (*Technical University of Denmark*); *Andrei V. Lavrinenko* (*Technical University of Denmark*); *Osamu Takayama* (*Technical University of Denmark*);

08:50 Control of Left-handed Leakage Band on Composite Right/Left Handed Transmission Line and Its Application to Leaky-wave Antennas
Yuya Ishii (*Doshisha University*); *Takahiro Kawaguchi* (*Doshisha University*); *Hiroyuki Deguchi* (*Doshisha University*); *Mikio Tsuji* (*Doshisha University*);

09:10 Reflectarray Cloaking Using **Ω**-shaped Resonant Elements
Yuki Fujimoto (*Doshisha University*); *Shinichiro Wakashima* (*Doshisha University*); *Hiroyuki Deguchi* (*Doshisha University*); *Mikio Tsuji* (*Doshisha University*);

09:30 Dynamic Tuning of Graphene Plasmonic Resonances by Ultraviolet Light
Yunyun Dai (*Fudan University*); *Yuyu Xia* (*Fudan University*); *Yiwen Zhang* (*Fudan University*); *Xiaohan Liu* (*Fudan University*); *Lei Shi* (*Fudan University*); *Jian Zi* (*Fudan University*);

09:50 Transmission and Radiation Characteristics of a Waveguide Loading Planar Layered Left-handed Medium
Masaki Ikeda (*Doshisha University*); *Hiroyuki Deguchi* (*Doshisha University*); *Mikio Tsuji* (*Doshisha University*);

10:10 Heat Conduction by Long-range Electromagnetic Surface Waves in Submicron Dielectric Films
Sergei Gluchko (*Institute of Industrial Science, The University of Tokyo*); *R. Anufriev* (*Institute of Industrial Science, The University of Tokyo*); *R. Yanagisawa* (*Institute of Industrial Science, The University of Tokyo*); *S. Volz* (*Institute of Industrial Science, The University of Tokyo*); *M. Nomura* (*Institute of Industrial Science, The University of Tokyo*);

10:40 **Coffee Break**

Session 4A17
SC3: Photonics-based Signal Source and Its Application 1

Saturday AM, August 4, 2018

Room A9

Organized by Fangzheng Zhang, Jianqiang Li

Chaired by Fangzheng Zhang

08:30 Two Dimensional Materials Based Mode-locked Lasers and Related Photonic Applications
Kan Wu (*Shanghai Jiao Tong University*);

08:50 Optical Frequency Comb Generation and Its Applications
Jianping Li (*Jinan University*);

09:10 Photonic Microwave Generation Based on Monolithically Integrated Multi-section Semiconductor Lasers
Dan Lu (*Institute of Semiconductors, Chinese Academy of Science*); *Lingjuan Zhao* (*Institute of Semiconductors, Chinese Academy of Science*);

09:30 4-channels and 100 GHz-spacing Tunable Lasers for Fast Tuning
Rulei Xiao (*Nanjing University*); *Yuechun Shi* (*Nanjing University*); *Yong Zhao* (*Nanjing University*); *Xiangfei Chen* (*Nanjing University*);

09:50 Low-power RF Signal Detection by a PS-FBG Based Tunable Optoelectronic Oscillator
Xiuyou Han (*Dalian University of Technology*); *Yuchen Shao* (*Dalian University of Technology*); *Mingshan Zhao* (*Dalian University of Technology*);

10:10 Ultrafast Data Processing Using Support Vector Machine for Brillouin Optical Time Domain Analyzer
Liang Wang (*The Chinese University of Hong Kong*); *Huan Wu* (*The Chinese University of Hong Kong*); *Fangzheng Zhang* (*Nanjing University of Aeronautics and Astronautics*);

10:40 **Coffee Break**

Session 4A18
RF and Wireless Communication, Multipath

Saturday AM, August 4, 2018

Room A10

Chaired by Heung-Gyoon Ryu, Yasushi Yamao

08:30 Contactless Monitoring of Heart and Respiration Rates Using Millimeter Wave Wideband Radio
Minseok Kim (*Niigata University*);

08:50 Evaluation of Received Signal Power in On-body Dynamic Channel Considering Human Walking Motion
Yuki Futagi (*Toyama University*); *Tomohiro Hori* (*Toyama University*); *Kazuhiro Honda* (*Toyama University*); *Koichi Ogawa* (*Toyama University*);

09:10 Wireless Communication System Based on OFDM System Using Wavelet Transform
Jun-Gu Lee (*Chungbuk National University*); *Heung-Gyoon Ryu* (*Chungbuk National University*);

09:30 Radio Propagation of 920 MHz RFID on Metallic Storage Shelf
Sora Funayama (*The University of Electro-Communications*); *Yasushi Yamao* (*The University of Electro-Communications*);

09:50 Propagation Loss Characteristic of V2V Communication for Right-turn Accident Prevention Scenario
Yosuke Kikuchi (*The University of Electro-Communications*); *Yasushi Yamao* (*The University of Electro-Communications*);

10:10 Steerable Beamforming UWB-IR Transmitter Array for Directional Indoor Positioning Applications
Md. Arif Hussain Ansari (*Nanyang Technological University*); *Choi Look Law* (*Nanyang Technology University*);

10:40 **Coffee Break**

Session 4A0
Poster Session 5

Saturday AM, August 4, 2018

8:30 AM - 11:30 AM

Room Foyer

1 Anti-water UHF RFID Tag Antenna with Multi-loop Structure for Impedance Matching
Laijun Li (*Zhejiang University*); *Wang He* (*Zhejiang University*);

2 A Novel Design of Frequency-reconfigurable Antenna for Wireless Communication
Feng Xie (*Tongji University*); *Xiao Jia Huang* (*Tongji University*); *Mei Song Tong* (*Tongji University*);

3 Meandered Inductor Shape of DGS for Coupling Suppression between Adjacent Elements of Array Antenna
Mochamad Yunus (*University of Pakuan*); *Prama Artha Nugraha* (*University of Pakuan*); *Waryani* (*University of Pakuan*); *Hardi Nusantara* (*Institut Teknologi Bandung*); *Achmad Munir* (*Institut Teknologi Bandung*);

4 Design of a Novel Miniaturized RFID Tag Antenna for UHF Applications
Ruo Xing Gao (*Tongji University*); *Ling Yi Tang* (*Tongji University*); *Mei Song Tong* (*Tongji University*);

5 Design of 3-axis Hall Plate with High Sensitivity
Jin-Sup Kim (*Korea Electronics Technology Institute*);

6 A Study of Optimization for Heat Spreader Sheet Based on Graphene
Jin-Sup Kim (*Korea Electronics Technology Institute*); *Jong-Kyu Kim* (*Korea Electronics Technology Institute*);

7 Investigation for the Birefringence and Stress Distributions of SiO_2 Films and Optical Waveguides in a Large Wafer
Qingyu Sun (*Changchun University of Science and Technology*); *Xueping Wang* (*Changchun University of Science and Technology*); *Hongpeng Shang* (*Changchun University of Science and Technology*); *Liyuan Chang* (*Changchun University of Science and Technology*); *De Gui Sun* (*Changchun University of Science & Technology; University of Ottawa*);

8 High Stability Tracking with Sparse Location Information
Yangpu Cao (*Zhejiang University*); *Yuan Chen* (*Zhejiang University*); *Yaoran Sun* (*Zhejiang University*); *Sailing He* (*Zhejiang University*);

9 Biological Effect of ELF Electric Field in Blood Aggregability II — Realization of Realistic Field Exposure Using Transparent Electrodes —
Hisae O. Shimizu (*Hokkaido University of Science*); *Miki Kanemaki* (*Hokkaido University of Science*); *S. Watanabe* (*Hokkaido University of Science*); *J. Arisawa* (*Hokkaido University of Science*); *K. Shimizu* (*Waseda University*);

10 Evaluating the Experience Obtained from the Measurement of Light Air Ions in a Cave
Zdenek Roubal (*Brno University of Technology*); *Radim Kadlec* (*Brno University of Technology*); *Zoltan Szabo* (*Brno University of Technology*); *Miloslav Steinbauer* (*Brno University of Technology*); *Karel Bartusek* (*Institute of Scientific Instruments of the ASCR*);

11 A Novel Triangular Patch Antenna Deploying Koch Fractal Geometry for Biomedical Applications
Ali Arif (*Information Technology University of the Punjab (ITU)*); *Muhammad Qasim Mehmood* (*Information Technology University (ITU)*); *Mubasher Ali* (*The University of Lahore*); *Ahsan Sarwar Rana* (*Information Technology University (ITU)*); *Muhammad Zubair* (*Information Technology University of the Punjab*);

12 A Directive Log Spiral Antenna Design for Broadband Receptions
Tsai-Yun Chuang (*National Taiwan University of Science and Technology*); *Yi-Chung Li* (*National Taiwan University of Science and Technology*); *Hao-De Tang* (*National Taiwan University of Science and Technology*); *Wen-Jiao Liao* (*National Taiwan University of Science and Technology*);

13 A Triple-band Monopole Antenna with Dual-polarization Characteristics
Ting Wu (*Xi'an University of Technology*); *Ming-Jun Wang* (*Xi'an University of Technology*); *Xi-Zheng Ke* (*Xi'an University of Technology*); *Jiao Wang* (*Xi'an University of Technology*);

14 Slot and DGS Incorporation for Bandwidth Enhancement of Substrate Integrated Waveguide Antenna
Mia Maria Ulfah (*Institut Teknologi Bandung*); *Chairunnisa* (*Institut Teknologi Bandung*); *Agus Hendra Wahyudi* (*Chiba University*); *Achmad Munir* (*Institut Teknologi Bandung*);

15 Phase-only Excited Random Antenna Arrays
Giovanni Buonanno (*Seconda Universita di Napoli*); *Raffaele Solimene* (*Seconda Universit di Napoli*);

16 Design of a Multi-band Antenna for WLAN Application
Xiao Jia Huang (*Tongji University*); *Feng Xie* (*Tongji University*); *Mei Song Tong* (*Tongji University*);

17 Dual Band Folded Microstrip Patch Antenna for Omnidirectional Radiation
Wei Shi (*Nanjing Telecommunication Technology Research Institute*); *Shiyun Yu* (*Nanjing Telecommunication Technology Research Institute*); *Bin Liu* (*Nanjing Telecommunication Technology Research Institute*); *Xinbo Qu* (*Nanjing Telecommunication Technology Research Institute*);

18 A Low-voltage Gyrotron Backward-wave Oscillator at 200 GHz
Chien-Lun Hung (*National Penghu University of Science and Technology*); *Yi Sheng Yeh* (*Southern Taiwan University of Science and Technology*); *Tsun-Hun Chang* (*National Tsing Hua University*);

19 A 5-GHz Chirp Frequency Synthesizer with a Low 1/f Noise LC Oscillator
Tai-Cheng Lee (*National Taiwan University*); *Dai-En Jhou* (*National Taiwan University*);

20 Flexible Artificial Magnetic Conductor Reflector for Wearable Antenna Application
Muhammad Aprizal (*Telkom University*); *Levy Olivia Nur* (*Telkom University*); *Bambang Setia Nugroho* (*Universitas Indonesia*); *Achmad Munir* (*Institut Teknologi Bandung*);

21 A W-band Solid-state Source with 2 Watts Continuous Wave Output Power
Zhen-Hua Chen (*Nanjing University of Information Science and Technology*); *Xiang Chen* (*Xi'an Institute of Space Radio Technology*);

22 An Approach for Parameter Estimation of Ground Moving Target
Laihe Wang (*National University of Defense Technology*); *Dao Xiang An* (*National University of Defense Technology*); *Wu Wang* (*National University of Defense Technology*); *Yueli Li* (*National University of Defense Technology*); *Xiaotao Huang* (*National University of Defense Technology*); *Zhi-Min Zhou* (*National University of Defense Technology*);

23 Notes on the Paper 'Speed of Light in Vacuum Revisited'
Namik Yener (*Kocaeli University*);

24 A Novel Control Method for Pneumatic Generating System Based on Heavy Haul Train
Lan Chen (*Shanghai Institute of Technology*); *Jun Zhang* (*Shanghai Institute of Technology*); *Ying Jie Ma* (*Shanghai Institute of Technology*); *Zhi Ding Ying* (*Tongji University*); *Guo Chun Wan* (*Tongji University*); *Mei Song Tong* (*Tongji University*);

25 DC and AC Electric Field Measurements near the Sq Current System by S-310-44 Sounding Rocket
Ryuichiro Nakamura (*Toyama Prefectural University*); *Keigo Ishisaka* (*Toyama Prefectural University*); *Takumi Abe* (*JAXA/ISAS*); *Atsushi Kumamoto* (*Tohoku University*); *Makoto Tanaka* (*Tokai University*); *Akimasa Yoshikawa* (*Kyushu University*); *Hiroki Matsushita* (*Kyushu University*);

26 A Novel Superpixel Generation Method Based on Edge Intensity for SAR Image
Yuan Chen (*National University of Defense Technology*); *Lingjun Zhao* (*National University of Defense Technology*); *Tao Tang* (*National University of Defense Technology*); *Gangyao Kuang* (*National University of Defense Technology*);

27 A Novel Miniaturized Quasi-lumped Element Antenna Based on Interdigital Capacitor
Seyi Stephen Olokede (*University of Johannesburg*); *Chuckwuemeka Joshua Okonkwo* (*National Open University of Nigeria*); *Adebayo Taiwo Akinyemi* (*ECAS Telecoms & Systems Nigeria*); *Babu Sena Paul* (*University of Johannesburg*);

28 Modular Microwave Applicator Design for Homogeneous Heating of Tubular Chemical Reactors at Industrial Scale
Vasileios Ramopoulos (*Institute for Pulsed Power and Microwave Technology, Karlsruhe Institute of Technology*); *G. Link* (*Institute for Pulsed Power and Microwave Technology, Karlsruhe Institute of Technology*); *S. Soldatov* (*Institute for Pulsed Power and Microwave Technology, Karlsruhe Institute of Technology*); *T. Seitz* (*Institute for Pulsed Power and Microwave Technology, Karlsruhe Institute of Technology*); *V. Nuss* (*Institute for Pulsed Power and Microwave Technology, Karlsruhe Institute of Technology*); *J. Jelonnek* (*Institute for Pulsed Power and Microwave Technology, Karlsruhe Institute of Technology*);

29 Design of Recognition System for Chipless RFID Tags Based on Spectral Characteristics
Zi Wei Xia (*Tongji University*); *Ling Yi Tang* (*Tongji University*); *Guo Chun Wan* (*Tongji University*); *Mei Song Tong* (*Tongji University*);

30 Broadband Microwave Imaging for Foam Insulation Diagnostics
Margarita A. Chizh (*Bauman Moscow State Technical University*); *Andrey V. Zhuravlev* (*Bauman Moscow State Technical University*); *Vladimir V. Razevig* (*Bauman Moscow State Technical University*); *Sergey I. Ivashov* (*Bauman Moscow State Technical University*);

31 Polarization-resolved Momentum-space Imaging Spectroscopy
Yiwen Zhang (*Fudan University*); *Wenzhe Liu* (*Fudan University*); *Haiwei Yin* (*Ideaoptics Inc.*); *Lei Shi* (*Fudan University*); *Jian Zi* (*Fudan University*);

32 Wall Ringing Multipath Exploitation for Through-the-wall Imaging Radar
Lei Qiu (*Space Engineering University*); *Tian Jin* (*National University of Defense Technology*); *Yongpeng Dai* (*National University of Defense Technology*); *Jun Yang* (*Space Engineering University*); *Yuntao Li* (*Space Engineering University*); *Yakun Lv* (*Space Engineering University*);

33 Design of the RF-DC Conversion Circuit by GA Adopting Mutation Based on Fourier Coefficients on Unit Structures
Kento Nakagawa (*Okayama University*); *Kazuhiro Fujimori* (*Okayama University*);

34 Graphene-on-silicon Hybrid Waveguide Devices and Applications
Zhenzhou Cheng (*The University of Tokyo*); *Tinghui Xiao* (*The University of Tokyo*); *Keisuke Goda* (*University of California*);

35 Design of a Miniaturized RFID Tag Antenna Based on Textile Substrates
Feng Xie (*Tongji University*); *Xiao Jia Huang* (*Tongji University*); *Mei Song Tong* (*Tongji University*);

36 Laser Beam Quality Measurement by a Single Shot of the Near- and Far-field Images
Surin Rodtim (*King Mongkut's Institute of Technology*); *Suripon Somkuarnpanit* (*King Mongkut's Institute of Technology*);

37 Basic Study of a Terahertz Absorber Composed of Metal and Polyimide Layers
J. Shibayama (*Hosei University*); *Jun Nakano* (*Hosei University*); *J. Yamauchi* (*Hosei University*); *H. Nakano* (*Hosei University*);

38 Chip Scale Broadband Frequency Conversion in Periodically Poled Lithium Niobate Thin Film
Licheng Ge (*Shanghai Jiao Tong University*); *Yuping Chen* (*Shanghai Jiao Tong University*); *Guangzhen Li* (*Shanghai Jiao Tong University*); *Haowei Jiang* (*Shanghai Jiao Tong University*); *Bing Zhu* (*Shanghai Jiao Tong University*); *Xianfeng Chen* (*Shanghai Jiao Tong University*);

39 Large Area UV Band Pass Filter for Display Applications
Hoekyung Kim (*Korea Electronics Technology Institute*); *Byung-Doo Kwak* (*Prime Optics Co., Ltd.*);

40 3D Printed Lattices for Terahertz Photonic Crystals
Wenya Zhang (*Soochow University*); *Shanshan Li* (*Soochow University*); *Weixin Lu* (*Soochow University*); *Bo Hou* (*Soochow University*);

41 Ground-based Monitoring of GHGs in the Atmospheric Column Using Mid-infrared Laser Heterodyne Radiometry (LHR)
Fengjiao Shen (*Universite du Littoral Cote d'Opale*); *Pascal Jeseck* (*Universite Pierre et Marie-Curie (Paris 6)*); *Yao-Veng Te* (*Universite Pierre et Marie-Curie (Paris 6)*); *Tu Tan* (*Anhui Institute of Optics & Fine Mechanics, Chinese Academy of Sciences*); *Xiaoming Gao* (*Anhui Institute of Optics and Fine Mechanics, Chinese Academy of Sciences*); *Eric Fertein* (*University of the Littoral Opal Coast*); *Wei Dong Chen* (*Universite du Littoral Cote d'Opale*);

42 Guide Star Optimal Selection Algorithm for All-time Star Sensors Based on Star Constellations
Feng Wu (*Changzhou Institute of Technology*); *Xifang Zhu* (*Changzhou Institute of Technology*); *Dongdong Hou* (*Changzhou Institute of Technology*); *Ruxi Xiang* (*Changzhou Institute of Technology*);

43 Capacitive-Discharge-Pumped Copper Bromide Vapor Laser with Output Power up to 15 W
Fedor Alexandrovich Gubarev (*National Research Tomsk Polytechnic University*); *Dmitriy Valerievich Shiyanov* (*National Research Tomsk Polytechnic University*); *Victor Borisovich Sukhanov* (*V.E. Zuev Institute of atmospheric Optics SB RAS*);

44 Experimental Investigation of the Exceptional Points in High-dimension Non-Hermitian System
Yaqiong Ding (*Tongji University*); *Yong Sun* (*Tongji University*); *Hong Chen* (*Tongji University*);

45 Design a Compact Metal-dielectric Multilayer as a Bandpass Filter and Metamaterial with Admittance Tracing Method
Yi-Jun Jen (*National Taipei University of Technology*);

46 Polarization-sensitive Tunable Perfect Absorber in VIS-NIR Regimes
Dasol Lee (*Pohang University of Science and Technology (POSTECH)*); *Sanghun Bang* (*Pohang University of Science and Technology (POSTECH)*); *Jeonghyun Kim* (*Pohang University of Science and Technology (POSTECH)*); *Duc Minh Nguyen* (*Pohang University of Science and Technology (POSTECH)*); *Junsuk Rho* (*Pohang University of Science and Technology (POSTECH)*);

47 A Broadband Polarization-insensitive Absorber Based on the Plasma Metameterial with Angle Independence
Hao Zhang (*Nanjing University of Posts and Telecommunications*); *Hai Feng Zhang* (*Nanjing University of Posts and Telecommunications*); *Jing Yang* (*Nanjing University of Posts and Telecommunications*); *Jia-Xuan Liu* (*Nanjing University of Posts and Telecommunications*);

48 Dynamic Modulation of Surface Plasmon Nanolasers by Elastic Waves
Tzy-Rong Lin (*National Taiwan Ocean University*); *Zhen-Ting Huang* (*National Taiwan Ocean University*); *Jin-Chen Hsu* (*National Yunlin University of Science and Technology*);

49 Magnetic Plasmon Propagation in a Chain of Connected of Deep-subwavelength Plasmonic Metamaterial Resonators
Zhen Liao (*Southeast University*); *Guo-Qing Luo* (*Hangzhou Dianzi University*); *Tie Jun Cui* (*Southeast University*);

50 Infrared Single-photon Detection and Imaging via Frequency Upconversion
Yu Chen (*East China Normal University*); *Jianhui Ma* (*East China Normal University*); *Huiqin Hu* (*East China Normal University*); *Haifeng Pan* (*East China Normal University*); *E. Wu* (*East China Normal University*);

51 Polarization Measurements and Analyses for Field Quantum Key Distribution
Hua Chen (*System Engineering Institute of Sichuan Areospace*); *Qiang Zhou* (*University of Electronic Science and Technology of China*); *Baozhuo Zhou* (*System Engineering Institute of Sichuan Areospace*); *Hai-Zhi Song* (*Southwest Institute of Technical Physics*); *Shili Wang* (*System Engineering Institute of Sichuan Areospace*); *Tianwen Yao* (*System Engineering Institute of Sichuan Areospace*); *Xiaoxu He* (*System Engineering Institute of Sichuan Areospace*); *Ben Zhang* (*System Engineering Institute of Sichuan Areospace*); *Shuang Wang* (*University of Science and Technology of China*); *Yuyang Ding* (*University of Science and Technology of China*);

52 Compact Over-mode Waveguide for Power Combining in Sub-millimeter Wave
C. Yi (*Korea University*); *H. Lee* (*Korea University*); *Moonil Kim* (*Korea University*);

53 The Signal Processing for the Backend of Very Long Baseline Interferometer (VLBI): Design and Implementation
Yajun Wu (*Shanghai Astronomical Observatory, Chinese Academy of Science*); *Renjie Zhu* (*Shanghai Astronomical Observatory, Chinese Academy of Science*);

54 Enhanced Photon Tunneling by Multiple Surface Plasmon Coupling in a Graphene/Vacuum Multilayer System
Yong Zhang (*Harbin Institute of Technology*); *Hongliang Yi* (*Harbin Institute of Technology*); *He-Ping Tan* (*Harbin Institute of Technology*);

55 Examination of Surface Roughness Effect on Radar Backscattering from Vegetated Fields Using the Radiative Transfer Model
Sinmyong Park (*Hongik University*); *Taekyeong Jin* (*Hongik University*); *Yisok Oh* (*Hongik University*);

56 Mass Selection in a Nonlinear Effective Potential
Semyon S. Rudiy (*ITMO University*); *Ivan A. Vasilev* (*ITMO University*); *Olga M. Kushchenko* (*ITMO University*); *Y. V. Rozhdestvensky* (*ITMO University*);

57 Modeling and Simulation of On-chip Probe for Portable NMR Applications
Manish Gupta (*Jawaharlal Nehru University*); *C. P. Safvan* (*Inter-University Accelerator Centre*); *Kundan Singh* (*Jawaharlal Nehru University*); *D. K. Lobiyal* (*Jawaharlal Nehru University*);

58 Multipolar Interference in the Systems of Optically Resonant Dielectric Nanostructures
T. X. Hoang (*A*STAR Institute of High Performance Computing*); *W. K. Phua* (*A*STAR Institute of High Performance Computing*); *C. E. Png* (*A*STAR Institute of High Performance Computing*); *H. S. Chu* (*A*STAR Institute of High Performance Computing*);

59 The Material Thickness on the Bragg Gap Position in Photonic Crystals Containing Dispersive Left-handed Materials
Hui Zhang (*Xidian University*); *Fei Cao* (*High-Tech Institute of Xi'an*); *Chang-Hong Liang* (*Xidian University*);

60 Using Complementary Split-ring Resonators for Super-compact Filters on the Substrate Integrated Waveguide
Hui Zhang (*Xidian University*); *Fei Cao* (*High-Tech Institute of Xi'an*); *Chang-Hong Liang* (*Xidian University*);

61 The MDSM Analysis of Diatomic Model Dynamics in the 2D RF Trap
Olga Kushchenko (*ITMO University*); *Semyon Rudiy* (*ITMO University*); *Ivan Vasilev* (*ITMO University*);

Session 4P1a
Active and Passive Remote Sensing, SAR & GPR

Saturday PM, August 4, 2018

Room T1

Chaired by Motoyuki Sato, Xiaolan Xu

13:00 Towards an Automatic Urban Settlement Mapping from Multi-temporal InSAR Trained by Social Media
Zelang Miao (*Central South University*); *Lixin Wu* (*Northeastern University*); *Wenzhong Shi* (*The Hong Kong Polytechnic University*); *Paolo Gamba* (*University of Pavia*); *Mi Jiang* (*Hohai University*);

13:20 Simultaneous Temperature and Strain Sensing Utilizing Brillouin Frequency Shifts Contributed by Multiple Acoustic Modes with High Spatial Resolution
Chen Xing (*Huazhong University of Science and Technology*); *Keyuan Yang* (*Huazhong University of Science and Technology*); *Changjian Ke* (*Huazhong University of Science and Technology*); *Haoyu Wang* (*Huazhong University of Science and Technology*); *Zhen Guo* (*Huazhong University of Science and Technology*); *Yue Deng* (*Huazhong University of Science and Technology*); *Yibo Zhong* (*Huazhong University of Science and Technology*);

13:40 Snow Stratigraphy Using Tomography Radar
Xiaolan Xu (*California Institute of Technology*); *Chad A. Baldi* (*California Institute of Technology*); *Jan-Willem De Bleser* (*California Institute of Technology*); *Yang Lei* (*California Institute of Technology*); *Simon H. Yueh* (*California Institute of Technology*); *Daniel Esteban-Fernandez* (*California Institute of Technology*);

14:00 Observation and Analysis of Electromagnetic Precursors of Crustal Rupturing in Tonankai or East-South Sea Area of Japan
Masafumi Fujii (*University of Toyama*);

14:20 Automatic Building Extraction Based on Deep Convolutional Neural Networks from High-resolution Remote Sensing Images
Jianwei Gao (*Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences*); *Zhengchao Chen* (*Institute of Remote Sensing and Digital Earth, CAS*); *Xuan Yang* (*Institute of Remote Sensing and Digital Earth, CAS*); *Qun Ma* (*Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences*); *Baipeng Li* (*Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences*);

14:40 Handheld Bistatic Subsurface Radar Using Accelerometer
Kazutaka Kikuta (*Tohoku University*); *Motoyuki Sato* (*Tohoku University*);

15:00 Investigation for the Measurement Accuracies of Silica Waveguide Sidewall Angles with Confocal Laser Scanning Microscope
Hongpeng Shang (*Changchun University of Science and Technology*); *De Gui Sun* (*Changchun University of Science & Technology; University of Ottawa*); *Jinzhu Gao* (*Institute of Metal Research, Chinese Academy of Sciences*); *Peng Yu* (*Changchun University of Science & Technology*); *Qingyu Sun* (*Changchun University of Science and Technology*); *Peng Liu* (*University of Ottawa*); *Trevor J. Hall* (*University of Ottawa*);

15:20 An Experimental Study of Foliage Penetrating Radar with Coherent Change Detection
Sevket Demirci (*Mersin University*); *Betul Yilmaz* (*Mersin University*); *Hakan Isiker* (*Mersin University*); *Serhat Gokkan* (*Mersin University*); *Caner Ozdemir* (*Mersin University*);

15:40 **Coffee Break**

Session 4P1b
Electromagnetic Modeling and Inversion and Applications

Saturday PM, August 4, 2018

Room T1

Organized by Jianhua Li, Ganquan Xie

Chaired by Shigu Cao, Ganquan Xie

16:00 Plane Wave Coupling to Overhead Lines over Stratified Earth
Zeyneb Belganche (*Mohammed V University*); *Abderrahman Maaouni* (*Mohammed V University*); *Ahmed Mzerd* (*Mohammed V University*); *Ayoub Lahmidi* (*Universite Mohammed V*);

16:20 Metasurface Design by Surrogate-assisted Optimization
Binbin Zhu (*Kuang-Chi Institute of Advanced Technology*); *Yang Yang* (*Tsinghua University*); *Yiqi Liu* (*Kuang-Chi Institute of Advanced Technology*); *Xiao Guo* (*Kuang-Chi Institute of Advanced Technology*); *Ke Deng* (*Tsinghua University*); *Chunlin Ji* (*Kuang-Chi Institute of Advanced Technology*);

16:40 Multiphysics Modeling for Ferroelectric Materials
Shigu Cao (*Shenzhen Inequation Technology Co. Ltd.*);

17:00 GL Full Wave Modeling and Ray Tracing Method for Cloak
Jianhua Li (*GL Geophysical Laboratory*); *Lee Xie* (*GL Geophysical Laboratory*); *Feng Xie* (*GL Geophysical Laboratory*); *Ganquan Xie* (*GL Geophysical Laboratory*);

17:20 $\boldsymbol{r}$ Can Be Negative in a New Negative World on Acoustic, EM, and Seismic Modeling and Inversion
Jianhua Li (*GL Geophysical Laboratory*); *Feng Xie* (*GL Geophysical Laboratory*); *Lee Xie* (*GL Geophysical Laboratory*); *Ganquan Xie* (*GL Geophysical Laboratory*);

17:40 A New GLHUANPII-3 Electromagnetic Invisible Cloak
Jianhua Li (*GL Geophysical Laboratory*); *Feng Xie* (*GL Geophysical Laboratory*); *Lee Xie* (*GL Geophysical Laboratory*); *Ganquan Xie* (*GL Geophysical Laboratory*);

Session 4P2a
SC5: Advances in PolSAR/PolInSAR Analysis and Applications

Saturday PM, August 4, 2018

Room T2

Organized by Hiroyoshi Yamada, Ryoichi Sato

Chaired by Hiroyoshi Yamada, Ryoichi Sato

13:00 Detection of Landslides of the 2016 Kumamoto Earthquake by Using Two Single-pass Cross-track Interferometry Airborne SAR Data
Toshifumi Moriyama (*Nagasaki University*); *Fumiaki Jitsufuji* (*Nagasaki University*);

13:20 Monitoring Permafrost Environments with Polarimetric SAR and Optical Remote Sensing Data
Sang-Eun Park (*Sejong University*);

13:40 Investigation of Seasonality-induced Polarimetric Backscatter Variations over Tropical Forests for Improved Geophysical Parameter Estimation
Christian Koyama (*Tokyo Denki University*); *Manabu Watanabe* (*Tokyo Denki University*); *Masanobu Shimada* (*Tokyo Denki University*);

14:00 Polarimetric SAR Targets Detection and Classification with Deep Convolutional Neural Network
Si-Wei Chen (*National University of Defense Technology*); *Chen-Song Tao* (*National University of Defense Technology*); *Xuesong Wang* (*National University of Defense Technology*); *Shun-Ping Xiao* (*National University of Defense Technology*);

14:20 Applying Polarimetric H/alpha Decomposition to Height Direction by Using TomoSAR Reconstruction
Masanori Gocho (*Niigata University*); *H. Yamada* (*Niigata University*); *Yoshio Yamaguchi* (*Niigata University*); *Ryoichi Sato* (*Niigata University*);

14:40 Three-component Scattering Power Decomposition by Using Multi-baseline PolSAR Data of ALOS-2/PALSAR-2
Kosuke Miyazaki (*Niigata University*); *H. Yamada* (*Niigata University*); *Ryoichi Sato* (*Niigata University*); *Yoshio Yamaguchi* (*Niigata University*);

15:00 Dynamic Polarimetric Backscattering Matrix Measurement System and Calibration Method
Yu Wang (*Institute of Electronics, Chinese Academy of Sciences*); *Mingkuan Yi* (*Institute of Electronics, Chinese Academy of Sciences*); *Jun Hong* (*Institute of Electronics, Chinese Academy of Science*);

15:20 Urban Damage Mapping Using Fully Polarimetric SAR Data
Si-Wei Chen (*National University of Defense Technology*); *Xuesong Wang* (*National University of Defense Technology*); *Shun-Ping Xiao* (*National University of Defense Technology*); *Yi Su* (*National University Of Defense Technology*);

15:40 **Coffee Break**

Session 4P2b
SC5: Theoretical and Experimental Studies Related to GPR

Saturday PM, August 4, 2018

Room T2

Organized by Masahiko Nishimoto, Akira Hirose

Chaired by Masahiko Nishimoto, Akira Hirose

16:00 Underground Electromagnetic Wave Velocity Calculation Method
Wenqi Fang (*HYlight Technology. Co., Ltd.*); *Jisheng Huang* (*Yunnan Power Grid Corporation*); *Zhengjie Cai* (*HYlight Technology. Co., Ltd.*); *Ping Guo* (*Yunnan Power Grid Corporation*); *Lingyun Tang* (*HYlight Technology. Co., Ltd.*); *Enxin Xiang* (*Power Grid Research Institute of Yunnan Power Grid Corporation*); *Wei Li* (*Shanghai Institute of Microsystem and Information Technology, Chinese Academy of Sciences*);

16:20 Buried Target Identification Using Model Parameters of Scattering Transfer Function
Masahiko Nishimoto (*Kumamoto University*);

16:40 Optimized Reconstruction of GPR Target Signature Using Evolving Sparse Representation
Budiman Putra Asmaur Rohman (*Kumamoto University*); *Masahiko Nishimoto* (*Kumamoto University*);

17:00 Estimation of Near-surface Soil Moisture through GPR Signal Processing Based on Multi-scaled Spectral Feature Weighting
Budiman Putra Asmaur Rohman (*Kumamoto University*); *Masahiko Nishimoto* (*Kumamoto University*);

Session 4P3a
SC1: Novel Mathematical Methods in Electromagnetics 2

Saturday PM, August 4, 2018

Room T3

Organized by Kazuya Kobayashi, Yury V. Shestopalov

Chaired by Kazuya Kobayashi, Yury V. Shestopalov

13:20 Diffraction of $\boldsymbol{E}$-polarized Plane Waves by Two Finite Sinusoidal Gratings
Elena D. Vinogradova (*Macquarie University*); *Kazuya Kobayashi* (*Chuo University*);

13:40 Rigorous Approach to Multiple Plane Wave Scattering by Arbitrary Cylindrical Cavities with Longitudinal Slits: Ensembles of Coupled Resonators
Elena D. Vinogradova (*Macquarie University*);

14:00 The Dependence of Surface and Field Distributions upon the Curvature of Rounded Corners of a Scatterer
Paul D. Smith (*Macquarie University*); *Audrey J. Markowskei* (*Macquarie University*);

14:20 Propagation Modes in a Waveguide Perturbed by Inserts
Paul D. Smith (*Macquarie University*); *Elena D. Vinogradova* (*Macquarie University*); *Yury V. Shestopalov* (*University of Gavle*);

14:40 On the Construction of Electromagnetic Green's Dyadics without Vector Wave Functions
Prabhakar H. Pathak (*Ohio State University*); *Kittisak Phaebua* (*King Mongkut's University of Technology North Bangkok*);

15:00 Plane Wave Diffraction by Two Parallel Sinusoidal Strips
Toru Eizawa (*Chuo University*); *Kazuya Kobayashi* (*Chuo University*);

15:20 Surface Electromagnetic Waves of Visible Range on the Interfaces of Gradient Dielectric Media
Alexander Borisovich Shvartsburg (*Joint Institute for High Temperatures, Russian Academy of Sciences*); *N. V. Silin* (*Far Eastern Federal University*); *Yu. G. Nesterov* (*Far Eastern Federal University*);

15:40 **Coffee Break**

Session 4P3b
Computational Electromagnetics, Hybrid Methods

Saturday PM, August 4, 2018

Room T3

Chaired by Nicolae-Coriolan Panoiu, Jean-Fu Kiang

16:00 Efficient Implementation of the CFS-PML for Arbitrary Media Based on the Matrix-exponential Method
Haolin Jiang (*Southeast University*); *Jianfeng Zhang* (*Southeast University*); *Tie Jun Cui* (*Southeast University*); *Yongxiao Tian* (*East China University of Science and Technology*);

16:20 Brightness Temperatures from Moistured Soil with Rough Surface by Using Near-field Bistatic Transmission Coefficients and Domain-decomposition FDTD Method
Zhi-Hong Lai (*National Taiwan University*); *Jean-Fu Kiang* (*National Taiwan University*);

16:40 Analysis of Quantum and Classical Plasmon Interactions via a Novel TD-DFT-FDTD Hybrid Method
Jian Wei You (*University College London*); *Nicolae-Coriolan Panoiu* (*University College London*);

17:00 Evaluation of the Impact of Deforestation on the Radio Wave Propagation Near the Large Antenna System in the Calculation of Sanitary Protection Zones
Mikhail Sergeyevich Mikhailov (*National Research University "Moscow Power Engineering Institute"*); *E. S. Malevich* (*National Research University "Moscow Power Engineering Institute"*); *Valery A. Permyakov* (*Moscow Power Engineering Institute (Technical University)*);

17:20 FDTD Studies of the Lasing Characteristics
Yaxin Yu (*Chang'an University*); *Xiaochuan Hu* (*Chang'an University*); *Yi Zhao* (*Chang'an University*); *Zan Zhang* (*Chang'an University*); *Bing Bai* (*Chang'an University*); *Guiping Wang* (*Chang'an University*);

17:40 Wavelength Scanning Speed Analysis for High-resolution Optical Spectrometry Based on Stimulated Brillouin Scattering
Yibo Zhong (*Huazhong University of Science and Technology*); *Keyuan Yang* (*Huazhong University of Science and Technology*); *Changjian Ke* (*Huazhong University of Science and Technology*); *Chen Xing* (*Huazhong University of Science and Technology*); *Haoyu Wang* (*Huazhong University of Science and Technology*); *Zhen Guo* (*Huazhong University of Science and Technology*);

18:00 Numerical Simulation of ILS Glide Path Signals above 3D Ground Model by Ray-tracing Method
Junichi Honda (*Electronic Navigation Research Institute (ENRI)*); *Hisashi Yokoyama* (*Electronic Navigation Research Institute (ENRI)*); *Hirohisa Tajima* (*Electronic Navigation Research Institute (ENRI)*);

Session 4P4a
FocusSession.SC1: Advances of Numerical Methods in Computational Electromagnetics

Saturday PM, August 4, 2018

Room T4

Organized by Mei Song Tong, Naoshi Nishimura

Chaired by Mei Song Tong

13:20 Numerical Modeling of Graphene Nano-ribbon by DGTD Taking into Account the Spatial Dispersion Effects
Ping Li (*The University of Hong Kong*); *Li Jun Jiang* (*University of Hong Kong*); *Hakan Bagci* (*King Abdullah University of Science and Technology (KAUST)*);

13:40 Splitting Complex Variable-based Self-consistency of Adjoint Analysis for Topology Optimization of Electromagnetic Waves
Yongbo Deng (*Changchun Institute of Optics, Fine Mechanics and Physics, Chinese Academy of Sciences*);

14:00 Singular Complement Method for Scattering Problems in Plasmonic Structures
Camille Carvalho (*UC Merced*); *Patrick Ciarlet, Jr.* (*Ecole Nationale Superieure de Techniques Avancees*);

14:20 Joint Inversion of Acoustic and Electromagnetic Data for Throax Imaging
Xiaoqian Song (*Tsinghua University*); *Maokun Li* (*Tsinghua University*); *Fan Yang* (*Tsinghua University*); *Shenheng Xu* (*Tsinghua University*); *Aria Abubakar* (*Schlumberger Houston Formation Evaluation*);

14:40 Penetrable Numerical Modeling of Metallic Nanoparticles at Terahertz Frequencies
Hande Ibili (*Middle East Technical University*); *Sadri Güler* (*Middle East Technical University*); *Bariscan Karaosmanoglu* (*Middle East Technical University*); *Ozgur Ergul* (*Middle East Technical University*);

15:00 Blocked Iterative Algorithms for Solving Eigenvalue Problems and Sparse Systems of FEM Equations on a GPU
Adam Dziekonski (*Gdansk University of Technology*); *Michal Piotr Mrozowski* (*Technical University of Gdansk*);

15:20 Fast Calculation of Near Electric Field by Skeletonized Impedance Matrix of Method of Moments
Y. N. Liu (*Beijing Institute of Technology*); *Xiao-Min Pan* (*Beijing Institute of Technology*); *Xin-Qing Sheng* (*Beijing Institute of Technology*);

15:40 **Coffee Break**

16:00 A Finite Element Domain Decomposition Alogrithm for Modeling Geological Problems
Yuan Guo Zhou (*Xi'an University of Science and Technology*); *Qing Huo Liu* (*Duke University*);

16:20 Theory of Potential-based Integral-form A-$\boldsymbol{\Phi}$ Formulation in Electromagnetic Applications
Qin S. Liu (*University of Hong Kong*); *Li Jun Jiang* (*University of Hong Kong*); *Sheng Sun* (*University of Electronic Science and Technology of China*); *Qi I. Dai* (*University of Illinois at Urbana-Champaign*); *Weng Cho Chew* (*University of Illinois*);

Session 4P4b
Fast Methods in Electromagnetic Numerical Simulation

Saturday PM, August 4, 2018

Room T4

Organized by Ting Wan, Mei Song Tong

Chaired by Ting Wan, Mei Song Tong

16:40 A Fast FE-BI Method for the Computation of Monostatic Radar Cross Section
Ting Wan (*Nanjing University of Posts and Telecommunications*); *Mengzhe Li* (*Nanjing University of Posts and Telecommunications*); *Benliu Tang* (*Nanjing University of Posts and Telecommunications*);

17:00 Fast Solution of $\boldsymbol{E}$-$\boldsymbol{H}$ Time-domain Finite-element Method with Improved $\boldsymbol{H}$-matrix Arithmetic
Jian Zhu (*Nanjing University of Posts and Telecommunications*); *Zhenbao Ye* (*Nanjing University of Science and Technology*); *Ting Wan* (*Nanjing University of Posts and Telecommunications*);

17:20 Change Detection of Huangqi Lake Based on Modified Active Contour Using Sentinel-1 SAR Image
Shilin Zhang (*Hohai University*); *Jiaqi Chen* (*Nanjing University of Science and Technology*); *Xi Liu* (*Hohai University*); *Jing Li* (*Hohai University*);

17:40 Efficent Extraction of Daihai Lake Based on Neural Network Algorithm from High Resolution SAR Image
Yan Zhang (*Hohai University*); *Jiaqi Chen* (*Nanjing University of Science and Technology*); *Xi Liu* (*Hohai University*); *Shilin Zhang* (*Hohai University*); *Jing Li* (*Hohai University*);

18:00 The Reduced-basis Boundary Element Method for Fast Electromagnetic Field Computation of Dielectric Scatterers
Yating Shi (*Huazhong University of Science and Technology*); *Xiuguo Chen* (*Huazhong University of Science and Technology*); *Honggang Gu* (*Huazhong University of Science and Technology*); *Shiyuan Liu* (*Huazhong University of Science and Technology*);

Session 4P5
Reconfigurable Antenna, Microstrip Antenna and Array

Saturday PM, August 4, 2018

Room T5

Chaired by Baiqiang You, Ilya V. Korogodin

13:00 High Resolution Detector Array with On-chip Crowding Honeycomb-shaped Patch Operating in Submillimeter Wave
Seung Ho Choi (*Korea University*); *K. M. Lee* (*Korea University*);

13:20 A Compact Millimeter-wave Array Element Design Combining Integrated Feed and External Taper Slot Structure
H. Lee (*Korea University*); *Jaedon Park* (*Agency for Defense Development*); *Moonil Kim* (*Korea University*);

13:40 Naive Beamforming for Multi-element Antenna GNSS Receiver
Ilya V. Korogodin (*National Research University*);

14:00 Reconfigurable Antenna Based on Graphene at Terahertz Frequency
Xing-Yun Zhang (*Beihang University*); *Cun-Jun Ruan* (*Beihang University*); *Jun Dai* (*Beihang University*);

14:20 A Novel Reconfigurable Liquid Metal Antenna Controlled by an Impressed Voltage
Feng Xie (*Tongji University*); *Mei Song Tong* (*Tongji University*);

14:40 A Dual-band Dual-polarization Stacked Antenna Array for GPS Application
Yueh-Lin Tsai (*Industrial Technology Research Institute*); *Chia-Ching Huang* (*Industrial Technology Research Institute*); *Chen-Tsung Lin* (*National Space Organization*); *Ming-Yu Hsieh* (*National Space Organization*);

15:00 Probabilistic Density-tapered Antenna Arrays
Giovanni Buonanno (*Seconda Universita di Napoli*); *Raffaele Solimene* (*Universita degli studi della Campania Luigi Vanvitelli*);

15:20 A Band-notched UWB Antenna Loaded with Tree-shaped Fractal
Jianhua Zhou (*Xiamen University*); *Xinjiang Wu* (*Xiamen University*); *Baiqiang You* (*Xiamen University*); *Yun Peng Shang* (*Xinghai Communication Science and Technology Co., Ltd.*); *Jiang Huang* (*Xiamen University*); *Tianzeng Huang* (*Xiamen University*);

15:40 **Coffee Break**

16:00 A Novel Tapered Coplanar-strip Antenna
Prasad N. Shastry (*Bradley University*); *Mahmoud Basraoui* (*Bradley University*);

16:20 Design of High Efficiency Multiband Rectenna for RF Energy Harvesting
Shahid Ullah (*Beihang University*); *Cun-Jun Ruan* (*Beihang University*); *Tanveer Ul Haq* (*Beihang University*); *Ayesha Kosar Fahad* (*Beihang University*); *Jun Dai* (*Beihang University*);

16:40 On the Q-factor Optimal Position for Embedded Antennas in Small Devices
Shuai Shi (*KTH Royal Institute of Technology*); *B. Lars G. Jonsson* (*KTH Royal Institute of Technology*); *Fabien Ferrero* (*University of Nice Sophia Antipolis*); *L. Wang* (*Hamburg University of Technology*);

17:00 Vertical Polarized $\mathbf{1 \times 3}$ Series-fed Linear Array with Gain and Front-to-back Ratio Enhancement for Airborne SAR-X Applications
Venkata Kishore Kothapudi (*Koneru Lakshmaiah Education Foundation*); *Sarat Kumar Kotamraju* (*KLEF*); *K. Ch. Sri Kavya* (*KLEF*); *Vijay Kumar* (*Vellore Institute of Technology (VIT)*);

17:20 Dual Linearly Polarized 2-D Series-fed Patch Antenna Array with Direct Coupling for Airborne SAR Applications
Venkata Kishore Kothapudi (*Koneru Lakshmaiah Education Foundation*); *Vijay Kumar* (*Koneru Lakshmaiah Education Foundation*);

17:40 A Modified Super-wideband Planar Elliptical Monopole Antenna
Umair Rafique (*Capital University of Science and Technology*); *Muhammad Mansoor Ahmed* (*Capital University of Science and Technology*); *M. Mateen Hassan* (*Capital University of Science and Technology*); *Hisham Khalil* (*The University of Lahore*);

18:00 Nose Cone Conformal Antenna Array Design for X-band Radar Applications
Hisham Khalil (*The University of Lahore*); *Muhammad Mansoor Ahmed* (*Capital University of Science and Technology*); *Saeed Ur Rahman* (*Nanjing University of Aeronautics and Astronautics (NUAA)*); *Umair Rafique* (*Capital University of Science and Technology*);

Session 4P6a
Inverse Problems in Microwaves and Optics

Saturday PM, August 4, 2018

Room T6

Organized by Rocco Pierri

Chaired by Raffaele Solimene, Won-Kwang Park

13:00 A Novel Complex-valued Convolutional Neural Network for Electromagnetic Imaging Problem
Long Gang Wang (*Peking University*); *Wei Zhong* (*Peking University*); *Lianlin Li* (*Peking University*); *Tie Jun Cui* (*Southeast University*);

13:20 Accurate Far-field Pattern Reconstruction from Near-field Measurements with Inconvenient Probes
Josef Knapp (*Technical University of Munich*); *Roberto Morelli* (*Technical University of Munich*); *Thomas F. Eibert* (*Technical University of Munich*);

13:40 Edge-preserving Regularized Microwave Tomography with No Information on Incident Field
Rui Yang (*South China Normal University*); *Zhi Qi Meng* (*Fukuoka University*); *Takashi Takenaka* (*Nagasaki University*);

14:00 A Compressed Sensing Method for Phased Antenna Array Element Failures Diagnosis Using Only One Fixed Receiving Probe
Can Xiong (*Shanghai Jiao Tong University*); *Gaobiao Xiao* (*Shanghai Jiao Tong University*);

14:20 Minimum Measurement Points in Near Field: Numerical Results
Maria Antonia Maisto (*Universita degli studi della Campania Luigi Vanvitelli*); *Raffaele Solimene* (*Universita degli studi della Campania Luigi Vanvitelli*); *Rocco Pierri* (*Universita degli studi della Campania Luigi Vanvitelli*);

14:40 The Subspace-based Distorted-Born Iteration Method TE and Anisotropic Case
Xiuzhu Ye (*Beihang University*); *Naixin Zhang* (*Beihang University*); *Xudong Chen* (*National University of Singapore*);

15:00 MUSIC Algorithm for Imaging Small Anomaly from Scattering Parameter: Real-data Experiments
Won-Kwang Park (*Kookmin University*);

15:20 Multifrequency 3-D Inversion of GREATEM Data by BCGS-FFT-BIM
Chen Qiu (*Xiamen University*); *Bingyang Liang* (*Xiamen University*); *Feng Han* (*Xiamen University*); *Hai Liu* (*Xiamen University*); *Na Liu* (*Xiamen University*); *Chunhui Zhu* (*Xiamen University*); *Qing Huo Liu* (*Duke University*);

15:40 **Coffee Break**

16:00 The Integration and Impact of Beam Characteristics and Propagation Speed Correction in Holographic and MLEM Based Breast Microwave Radar Imaging Reconstruction
Tyson Reimer (*University of Manitoba*); *Diego Rodriguez Herrera* (*University of Manitoba*); *Mario Solis Nepote* (*University of Manitoba*); *Stephen Pistorius* (*University of Manitoba*);

16:20 Parameter Estimation of a Plasmonic Channel Using Vlasov Equation
Manisha Khulbe (*Ambedkar Institute of Advanced Communication Technologies and Research; ASET, Amity University*); *Malay Ranjan Tripathy* (*Amity University Uttar Pradesh*); *Harish Parthasarathy* (*Netaji Subhas Institute of Technology*);

Session 4P6b
Radar Imaging, and Radar Signal Processing

Saturday PM, August 4, 2018

Room T6

Chaired by Robert D. Palmer, Hiroyuki Yamaguchi

16:40 Development of an All-digital, Polarimetric, Phased Array Radar for Multi-mission Applications
Robert D. Palmer (*University of Oklahoma*); *Caleb Fulton* (*University of Oklahoma*); *Jorge Salazar* (*University of Oklahoma*); *Hjalti H. Sigmarsson* (*University of Oklahoma*); *Mark B. Yeary* (*University of Oklahoma*);

17:00 Doppler Radar Vital Sign Detection Based on Complex Continuous Basis Pursuit Algorithm
Lele Qu (*Shenyang Aerospace University*); *Shenxiao Lian* (*Shenyang Aerospace University*); *Yanpeng Sun* (*Shenyang Aerospace University*); *Lili Zhang* (*Shenyang Aerospace University*);

17:20 Joint Estimation of DOA and Carrier Frequency Based on Coprime Arrays
Kai-Chieh Hsu (*National Taiwan University*); *Jean-Fu Kiang* (*National Taiwan University*);

17:40 Doppler Migration Estimation for a Complex Moving Target in Low Signal to Noise Ratio Environment
Hiroyuki Yamaguchi (*Ministry of Defense*);

18:00 Compressive Sensing-based Two-dimensional Diffraction Tomographic Algorithm for Through-the-Wall Radar Imaging
Lele Qu (*Shenyang Aerospace University*); *Xing Cheng* (*Shenyang Aerospace University*); *Yanpeng Sun* (*Shenyang Aerospace University*); *Tianhong Yang* (*Shenyang Aerospace University*);

Session 4P7a
SC2: Metasurfaces and Metamaterials for Antenna Applications 2

Saturday PM, August 4, 2018

Room T7

Organized by Toru Uno, Naobumi Michishita

Chaired by Toru Uno, Naobumi Michishita

13:20 Metasurface Loss Analysis for 1D TCDA Efficiency Improvement
Seongjung Kim (*Seoul National University*); *Sangwook Nam* (*Seoul National University*);

13:40 A Simple Route to Design Multifunctional Coding Metasurface
Guo Dong Bai (*Lanzhou University*); *Tie Jun Cui* (*Southeast University*);

Session 4P7b
SC2: Recent Trends in Acoustic and Microwave Metamaterials

Saturday PM, August 4, 2018

Room T7

Organized by Hiroshi Kubo, Yasushi Horii

Chaired by Tsunayuki Yamamoto, Yasushi Horii

14:00 Multifunctional Radar Absorbing Metamaterial Structures by 3D Printing of Composite
Lixian Yin (*Xi'an Jiaotong University*); *Xiaoyong Tian* (*Xi'an Jiaotong University*); *Zhentao Shang* (*Xi'an Jiaotong University*); *Xin Wang* (*Xi'an Jiaotong University*); *Dichen Li* (*Xi'an Jiaotong University*);

14:20 Invited Waveguide-type CRLH Transmission Line Composed of Metallic Cylinder-pairs Arranged in Two Lines and Its Radiation Characteristics as a Leaky-wave Antenna
Tsunayuki Yamamoto (*Yamaguchi University*); *Hiroshi Kubo* (*Yamaguchi University*); *Shogo Sadamasu* (*Yamaguchi University*);

14:40 Invited A Numerical Study on Nonreciprocal CRLH-TL Using Antiparallel Magnetized Ferrite Loaded Waveguide
Kensuke Okubo (*Okayama Prefectural University*);

15:00 Evaluation of Metamaterial Structures as Wideband Impedance Matching Network for RF Harvesting Systems
Ertugrul Coskuner (*Universidad Autonoma de Barcelona*); *Guillem Martinez De Arriba* (*Universidad Autonoma de Barcelona*); *Joan Jose Garcia-Garcia* (*Universitat Autonoma de Barcelona*);

15:40 **Coffee Break**

16:00 Invited A Consideration on Design of Negative Impedance Converter
Takeshi Fukusako (*Kumamoto University*); *Keisuke Eguchi* (*Kumamoto University*);

16:20 Invited Microwave Analog of Stern-Gerlach Effects Using Nonuniform Chiral Metamaterials
Satoshi Tomita (*Nara Instituteof Science and Technology (NAIST)*);

16:40 Invited Asymmetric Electromagnetic Field Profiles in Chiral Metamaterials
Nobuyuki Hisamoto (*Kyoto Institute of Technology*); *Tetsuya Ueda* (*Kyoto Institute of Technology*); *Kei Sawada* (*RIKEN SPring-8 Center*); *Satoshi Tomita* (*Nara Instituteof Science and Technology (NAIST)*);

17:00 Invited Propagation and Transmission of Microwaves in Negative Permittivity Plasmas Affected by Negative Permeability Metamaterials
Akinori Iwai (*Kyoto University*); *Yoshihiro Nakamura* (*Kyoto University*); *Yuki Kabe* (*The University of Shiga Prefecture*); *Osamu Sakai* (*The University of Shiga Prefecture*);

17:20 Extraordinary Acoustic Transmission Based Modeling of Sensory Hair Cells in Human Hearing System
Wenjia Hong (*Kansai University*); *Airi Tamaki* (*Kansai University*); *Toshiaki Kitamura* (*Kansai University*); *Yasushi Horii* (*Kansai University*);

17:40 Extraordinary Acoustic Transmission Based Comprehension of Human Hearing System: Why Sensory Hair Cells Near the Base of Cochlea Receive Higher Frequency Sounds
Airi Tamaki (*Kansai University*); *Wenjia Hong* (*Kansai University*); *Toshiaki Kitamura* (*Kansai University*); *Yasushi Horii* (*Kansai University*);

Session 4P8
FocusSession.SC1: Casimir Effect and Heat Transfer

Saturday PM, August 4, 2018

Room T8

Organized by Mauro Antezza, Brahim Guizal

Chaired by Brahim Guizal, Mauro Antezza

13:00 Casimir Forces between Silicon Gratings
Keynote
Ho Bun Chan (*The Hong Kong University of Science and Technology*); *Mingkang Wang* (*The Hong Kong University of Science and Technology*); *Lu Tang* (*The Hong Kong University of Science and Technology*); *C. Y. Ng* (*The Hong Kong University of Science and Technology*); *Che Ting Chan* (*The Hong Kong University of Science and Technology*); *Riccardo Messina* (*University of Montpellier*); *Brahim Guizal* (*University of Montpellier*); *Mauro Antezza* (*Universite de Montpellier*); *John Alexander Crosse* (*New York University Shanghai & New York University*);

13:30 Nonperturbative Dynamical Casimir Effect in Op-
Keynote tomechanical Systems: Vacuum Casimir-Rabi Splittings
Franco Nori (*Advanced Science Institute, RIKEN*);

14:00 Controlling Near-field Radiative Heat Transfer by
Invited Phase-change and Hyperbolic Materials
Kota Ito (*Toyota Central R&D Labs., Inc.*); *Kazutaka Nishikawa* (*Toyota Central R&D Labs., Inc.*); *Taro Ikeda* (*Toyota Central R&D Labs., Inc.*); *Atsushi Miura* (*Toyota Central R&D Labs., Inc.*); *Hiroshi Toshiyoshi* (*Japan Aerosp Explorat Agcy*); *Hideo Iizuka* (*Toyota Central R&D Labs., Inc.*);

14:20 Magneto-optical Control of Thermal Radiation at the
Invited Nanoscale
Svend-Age Biehs (*Carl von Ossietzky Universitat*); *Annika Ott* (*Carl von Ossietzky Universitat*); *Philippe Ben-Abdallah* (*Universite Paris-Sud 11*);

14:40 Numerics for the Casimir Effect in the Sphere-plane
Invited Geometry at Experimentally Relevant Aspect Ratios
Gert-Ludwig Ingold (*Universitat Augsburg*); *Michael Hartmann* (*Universitat Augsburg*); *Paulo A. Maia Neto* (*Universidade Federal do Rio de Janeiro*);

15:00 Dispersion Interactions and the Curie Dissymmetry
Invited Principle
Stefan Scheel (*University of Rostock*); *Stefan Yoshi Buhmann* (*University of Freiburg*); *Valery N. Marachevsky* (*Saint Petersburg State University*);

15:20 Casimir Force Measurements between Two Spheres
Invited
Joseph Garrett (*University of Maryland*); *Jeremy N. Munday* (*University of Maryland*);

15:40 **Coffee Break**

16:00 On the Seeming Dependence of Near Field Heat
Invited Transfer on the Apparent Barrier Height of a Tunnel Junction
Achim Kittel (*University of Oldenburg*); *Philipp Thurau* (*University of Oldenburg*); *Till Ziehm* (*University of Oldenburg*);

16:20 Near-field Heat Transfer between Graphene/hBN
Invited Multilayers
Brahim Guizal (*University of Montpellier*); *Bo Zhao* (*Stanford University*); *Zhuomin M. Zhang* (*Georgia Institute of Technology*); *Shanhui Fan* (*Stanford University*); *Mauro Antezza* (*Universite de Montpellier*);

16:40 Tailoring Casimir Forces Using Gradient Metasurfaces
Invited
Fanglin Bao (*South China Normal University*); *Sailing He* (*Zhejiang University*);

17:00 Near-field Radiative Heat Transfer in Scanning Mi-
Invited croscopy Applications
Khac Long Nguyen (*Universite de Lyon, CNRS, INSA-Lyon, Universite Claude Bernard Lyon 1*); *Olivier Merchiers* (*Universite de Lyon, CNRS, INSA-Lyon, Universite Claude Bernard Lyon 1*); *Pierre-Olivier Chapuis* (*CNRS, National Institute of Applied Physics (INSA) Lyon*);

17:20 Collective Spontaneous Emission of Two Atoms Near
Invited an Oscillating Mirror
Marta Reina (*Universita degli Studi di Palermo*); *Roberto Passante* (*Universita degli Studi di Palermo*); *Lucia Rizzuto* (*Universita degli Studi di Palermo and CNISM*);

17:40 Fluctuational Electrodynamics for Nonlinear Materi-
Invited als
Heino Soo (*Georg-August-Universitat Gottingen*); *Matthias Kruger* (*Georg-August-Universitat Gottingen*);

18:00 Polaritonic Chemistry: Influencing Photochemical
Invited and Ground-state Reactions
Javier Galego (*Universidad Autonoma de Madrid*); *Francisco J. Garcia-Vidal* (*Universidad Autonoma de Madrid*); *Johannes Feist* (*Universidad Autonoma de Madrid*);

18:20 Lateral van der Waals Forces
Invited
Pablo Barcellona (*University of Freiburg*); *Robert Bennett* (*Freiburg University*); *Stefan Yoshi Buhmann* (*University of Freiburg*);

Session 4P9a
FocusSession.SC3: Quantum Optics with Topological Materials 2

Saturday PM, August 4, 2018

Room A1

Organized by George W. Hanson, Mauro Antezza

Chaired by George W. Hanson, Mauro Antezza

13:20 Invited — Surface State of a Topological Insulator: A Different View
Shu Chen (*University of Illinois at Urbana-Champaign*); *Kejie Fang* (*University of Illinois*); *Weng Cho Chew* (*University of Illinois*);

13:40 Invited — Metamaterials with Index Ellipsoids at Arbitrary k-points
Wen-Jie Chen (*Sun Yat-Sen University*); *Bo Hou* (*The Hong Kong University of Science and Technology*); *Zhao-Qing Zhang* (*The Hong Kong University of Science and Technology*); *John B. Pendry* (*Imperial College London*); *Che Ting Chan* (*The Hong Kong University of Science and Technology*); *Xin-Tao He* (*Sun Yat-Sen University*);

14:00 Invited — Dispersion Forces with Topological Insulators
Sebastian Fuchs (*University of Freiburg*); *Frieder Lindel* (*University of Freiburg*); *Roman V. Krems* (*University of British Columbia*); *George W. Hanson* (*University of Wisconsin-Milwaukee*); *Mauro Antezza* (*Universite de Montpellier*); *Stefan Yoshi Buhmann* (*University of Freiburg*);

14:20 Photonic Polarization Anomaly in Supersymmetric Topological Quantum Walks
Henning Schomerus (*Lancaster University*); *S. Barkhofen* (*University of Paderborn*); *L. Lorz* (*University of Paderborn*); *T. Nitsche* (*University of Paderborn*); *Christine Silberhorn* (*University of Paderborn*);

Session 4P9b
SC1: Quantum Technologies

Saturday PM, August 4, 2018

Room A1

Organized by Mahdi Hosseini

Chaired by Ben M. Sparkes

14:40 Invited — Microwave Control of Superconducting Circuits for Quantum Computation
Stefan Filipp (*IBM Research — Zurich*);

15:00 Invited — Hyperbolic Blockade: Suppression of the Photonic Density of States and the Spontaneous Emission Rate at the Interface with Conducting Medium
Evgenii E. Narimanov (*Purdue University*);

15:20 Invited — Optical Quantum Information Processing with Atom-filled Hollow-core Photonic Crystal Fibres
Ben M. Sparkes (*The University of Adelaide*); *Jed A. Rowland* (*The University of Adelaide*); *Ashby P. Hilton* (*The University of Adelaide*); *Philip S. Light* (*The University of Adelaide*); *Andre N. Luiten* (*The University of Adelaide*); *Chris Perrella* (*The University of Adelaide*);

15:40 **Coffee Break**

16:00 Invited — Enhancement of Spontaneous Emission of Quantum Emitters near Metallic Thin Films
Shaimaa I. Azzam (*Purdue University*); *Motoharu Saito* (*Kyoto University*); *Shunsuke Murai* (*Kyoto University*); *Satoshi Ishii* (*National Institute for Materials Science (NIMS)*); *Katsuhisa Tanaka* (*Kyoto University*); *Alexander V. Kildishev* (*Purdue University*);

16:20 Invited — Towards Scatter-free Optical Levitation of a Macroscopic Mirror
Jiayi Qin (*The Australian National University*); *Jinyong Ma* (*The Australian National University*); *Giovanni Guccione* (*Sorbonne Universite, CNRS*); *Ming Gui* (*The Australian National University*); *Kabilan Sripathy* (*The Australian National University*); *Ruvi L. Lecamwasam* (*The Australian National University*); *Alistair Graham* (*The Australian National University*); *Maria Fuwa* (*The Australian National University*); *Geoff T. Campbell* (*The Australian National University*); *Ben C. Buchler* (*The Australian National University*); *Craig M. Savage* (*The Australian National University*); *Joseph J. Hope* (*The Australian National University*); *Ping Koy Lam* (*The Australian National University*);

16:40 Invited — Ti:$LiNbO_3$ OpticalWaveguide Resonators for Highly Efficient SHG and Optical Squeezing
Michael Steve Stefszky (*University of Paderborn*); *Raimund Ricken* (*University of Paderborn*); *Christof Eigner* (*University of Paderborn*); *Viktor Quiring* (*University of Paderborn*); *Harald Herrmann* (*University of Paderborn*); *Christine Silberhorn* (*University of Paderborn*);

17:00 Optical Hybrid Entanglement: A Resource for Quantum Networks
Invited
Giovanni Guccione (*Sorbonne Universite, CNRS*); *Adrien Cavailles* (*Sorbonne Universite, CNRS*); *Tom Darras* (*Sorbonne Universite, CNRS*); *Hanna Le Jeannic* (*Sorbonne Universite, CNRS*); *Jeremy Raskop* (*Sorbonne Universite, CNRS*); *Kun Huang* (*Sorbonne Universite, CNRS*); *Julien Laurat* (*Sorbonne Universite, CNRS*);

17:20 Commutators and Energy Conservation
Invited
Weng Cho Chew (*University of Illinois*);

17:40 Photon Statistics of the Dipole Hamiltonian
Aiyin Y. Liu (*University of Illinois*); *Weng Cho Chew* (*University of Illinois*);

Session 4P10a
SC2: Meta-X: Beyond Metamaterials 2

Saturday PM, August 4, 2018

Room A2

Organized by Osamu Sakai, Satoshi Tomita

Chaired by Osamu Sakai, Satoshi Tomita

13:00 Extraordinary Acoustic Transmission in Human Hearing System
Invited
Yasushi Horii (*Kansai University*); *Wenjia Hong* (*Kansai University*); *Airi Tamaki* (*Kansai University*); *Toshiaki Kitamura* (*Kansai University*);

13:20 Experimental Realization of Unidirectional Zero Reflection from Microwave to Elastic Metamaterials
Invited
Yongquan Liu (*Hong Kong University of Science and Technology*); *Jensen Li* (*Hong Kong University of Science and Technology*);

13:40 Bloch Oscillations in Mechanical Vibrations
Invited
A. Arreola-Lucas (*Universidad Autonoma Metropolitana-Iztapalapa*); *G. Baez* (*Universidad Autonoma Metropolitana Azcapotzalco*); *Rafael A. Mendez-Sanchez* (*Universidad Nacional Autonoma de Mexico*); *A. Climente* (*Universitat Politecnica de Valencia*); *F. Cervera* (*Universitat Politecnica de Valencia*); *Jose Sanchez-Dehesa* (*Universitat Politecnica de Valencia*);

14:00 Design of Metamaterial Effects for Transverse and Longitudinal Waves in Plasma
Osamu Sakai (*The University of Shiga Prefecture*); *Akinori Iwai* (*Kyoto University*); *Shinichi Sakamoto* (*The University of Shiga Prefecture*);

Session 4P10b
SC5: Measurement Technology of Electromagnetic Waves in Space Plasma, and Its Application to Space Plasma Physics

Saturday PM, August 4, 2018

Room A2

Organized by Yoshiya Kasahara, Keigo Ishisaka

Chaired by Yoshiya Kasahara, Keigo Ishisaka

14:20 Experimental Validation of Ionospheric Influences in Full-wave Simulation for a HF Radar
Takuya Kakumoto (*Kanazawa University*); *Y. Goto* (*Kanazawa University*); *N. Hanada* (*Kanazawa University*); *Yoshiya Kasahara* (*Kanazawa University*);

14:40 Analysis of Natural Electric Field and Plasma Density from the Sounding-rocket S-520-27
Mamoru Yamamoto (*Kyoto University*); *Keigo Nishida* (*Kyoto University*); *Keigo Ishisaka* (*Toyama Prefectural University*); *Makoto Tanaka* (*Tokai University*);

15:00 Analysis of Propagation Characteristics of MF Band Radio Waves in the Ionosphere Observed by S-310-40 Sounding Rocket
Daiki Oka (*Toyama Prefectural University*); *Keigo Ishisaka* (*Toyama Prefectural University*); *Takumi Abe* (*JAXA/ISAS*); *Atsushi Kumamoto* (*Tohoku University*);

15:20 Full-wave Simulations of a Combined Plasma Impedance Probe — Plasma Wave Receiver System for Plasma Measurements in the Ionosphere
Edmund Spencer (*University of South Alabama*); *Robert Arslanbekov* (*CFDRC Corporation*); *Vladimir Kolobov* (*University of Alabama In Huntsville*); *Saikrishna Vadepu* (*University of South Alabama*); *Riley Mayes* (*University of South Alabama*);

15:40 **Coffee Break**

16:00 Onboard Processing on Plasma Wave Experiment (PWE) aboard the Arase Satellite
Shoya Matsuda (*ISEE, Nagoya University*); *Yoshiya Kasahara* (*Kanazawa University*); *Hirotsugu Kojima* (*Kyoto University*); *Yasumasa Kasaba* (*Tohoku University*); *Satoshi Yagitani* (*Kanazawa University*); *Mitsunori Ozaki* (*Kanazawa University*); *Tomohiko Imachi* (*Kanazawa University*); *Keigo Ishisaka* (*Toyama Prefectural University*); *Atsushi Kumamoto* (*Tohoku University*); *Fuminori Tsuchiya* (*Tohoku University*); *Mamoru Ota* (*Kanazawa University*); *Satoshi Kurita* (*Nagoya University*); *Yoshizumi Miyoshi* (*Nagoya University*); *Mitsuru Hikishima* (*ISAS/JAXA*); *Ayako Matsuoka* (*ISAS/JAXA*); *Iku Shinohara* (*ISAS/JAXA*);

16:20 Study on Direction Finding of Plasma Waves Measured by the Waveform Capture (WFC) on Board the Arase Satellite
Satoshi Ikarashi (*Graduate School of Natural Science and Technology*); *Yoshiya Kasahara* (*Kanazawa University*); *S. Matsuda* (*ISEE, Nagoya University*); *M. Ota* (*Kanazawa University*);

16:40 Software-type Wave-particle Interaction Analyzer on Board the Arase Satellite: Implementation and Data Processing
Yuto Katoh (*Tohoku University*); *H. Kojima* (*Kyoto University*); *Mitsuru Hikishima* (*ISAS/JAXA*); *T. Takashima* (*ISAS/JAXA*); *K. Asamura* (*ISAS/JAXA*); *Y. Miyoshi* (*Nagoya University*); *Yoshiya Kasahara* (*Kanazawa University*); *S. Kasahara* (*The University of Tokyo*); *T. Mitani* (*ISAS/JAXA*); *N. Higashio* (*JAXA*); *Ayako Matsuoka* (*Japan Aerospace Exploration Agency*); *Mitsunori Ozaki* (*Kanazawa University*); *Satoshi Yagitani* (*Kanazawa University*); *S. Yokota* (*Osaka University*); *S. Matsuda* (*ISEE, Nagoya University*); *Masahiro Kitahara* (*Tohoku University*); *I. Shinohara* (*ISAS/JAXA*);

17:00 Development of Signal Processing Modules for Plasma Waveform Measurements in Space Plasma
Yoshiya Kasahara (*Kanazawa University*); *T. Takahashi* (*Kanazawa University*); *Y. Ogawa* (*Kanazawa University*); *T. Hamano* (*Kanazawa University*); *Shoya Matsuda* (*ISEE, Nagoya University*); *Mamoru Ota* (*Kanazawa University*); *Hirotsugu Kojima* (*Kyoto University*);

17:20 Can We Use an Optical Electric Field Sensor in Space Missions to Investigate Space Environments?
Hirotsugu Kojima (*Kyoto University*);

17:40 High Frequency Receiver of Radio and Plasma Waves Investigation Onboard the JUICE Spacecraft
Fuminori Tsuchiya (*Tohoku University*); *Yasumasa Kasaba* (*Tohoku University*); *Cecconi Baptiste* (*Lab Etud Spatiales & Instrumentat Astrophys*); *Hajime Kita* (*ISAS/JAXA*); *Tomoki Kimura* (*Tohoku University*); *Atsushi Kumamoto* (*Tohoku University*); *Hiroaki Misawa* (*Tohoku University*); *Yuto Katoh* (*Tohoku University*); *Yoshiya Kasahara* (*Kanazawa University*); *Tomohiko Imachi* (*Kanazawa University*); *Hirotsugu Kojima* (*Kyoto University*); *Satoshi Yagitani* (*Kanazawa University*); *Mitsunori Ozaki* (*Kanazawa University*); *Keigo Ishisaka* (*Toyama Prefectural University*); *Yoshizumi Miyoshi* (*Nagoya University*); *Jan E. S. Bergman* (*Swedish Institute of Space Physics*); *Walter Puccio* (*Swedish Institute of Space Physics*); *Reine Gill* (*Swedish Institute of Space Physics*); *Jan-Erik Wahlund* (*Swedish Institute of Space Physics*);

18:00 The Preamplifier of Radio & Plasma Wave Investigation (RPWI) for the ESA JUICE Mission
Hiroaki Misawa (*Tohoku University*); *Yasumasa Kasaba* (*Tohoku University*); *Fuminori Tsuchiya* (*Tohoku University*); *Yoshiya Kasahara* (*Kanazawa University*); *Tomohiko Imachi* (*Kanazawa University*); *Tomoki Kimura* (*RIKEN*); *Yuto Katoh* (*Tohoku University*); *Atsushi Kumamoto* (*Tohoku University*); *Hirotsugu Kojima* (*Kyoto University*); *Satoshi Yagitani* (*Kanazawa University*); *Mitsunori Ozaki* (*Kanazawa University*); *Keigo Ishisaka* (*Toyama Prefectural University*); *Yoshizumi Miyoshi* (*Nagoya University*);

Session 4P11
FocusSession.SC3: Advanced Photonic Technologies for Spectroscopic Applications: Devoted to Prof. Frank K. Tittel 2

Saturday PM, August 4, 2018

Room A3

Organized by Wei Dong Chen, Vincenzo Spagnolo

Chaired by Wei Dong Chen, Vincenzo Spagnolo

13:00 Trace Gas Sensing at the Limits
Invited
Simone Borri (*CNR-INO, Istituto Nazionale di Ottica*); *Saverio Bartalini* (*CNR-INO, Istituto Nazionale di Ottica*); *Francesco Cappelli* (*CNR-INO, Istituto Nazionale di Ottica*); *Iacopo Galli* (*CNR-INO, Istituto Nazionale di Ottica*); *Davide Mazzotti* (*CNR-INO, Istituto Nazionale di Ottica*); *Pablo Cancio* (*CNR-INO, Istituto Nazionale di Ottica*); *Pasquale Maddaloni* (*CNR-INO, Istituto Nazionale di Ottica*); *Iolanda Ricciardi* (*CNR-INO, Istituto Nazionale di Ottica*); *Maurizio De Rosa* (*CNR-INO, Istituto Nazionale di Ottica*); *Paolo De Natale* (*CNR-INO, Istituto Nazionale di Ottica*);

13:20 Comb-calibrated Spectroscopy of Weakly-absorbing
Invited Molecules in the Near-IR
Livio Gianfrani (*Universita degli Studi della Campania "Luigi Vanvitelli"*);

13:40 Quartz-enhanced Photoacoustic Spectroscopy Ex-
Invited ploiting the First Overtone Mode of Quartz Tuning Forks
Pietro Patimisco (*Universita degli Studi di Bari and Politecnico di Bari*); *Angelo Sampaolo* (*Universita degli Studi di Bari and Politecnico di Bari*); *Marilena Giglio* (*Politecnico and University of Bari*); *Stefano Dello Russo* (*Universita degli Studi di Bari and Politecnico di Bari*); *Giansergio Menduni* (*Politecnico and University of Bari*); *Andrea Zifarelli* (*Universita degli Studi di Bari and Politecnico di Bari*); *Huadan Zheng* (*Shanxi University*); *Lei Dong* (*Shanxi University*); *Vittorio Passaro* (*Politecnico di Bari*); *Frank K. Tittel* (*Rice University*); *Vincenzo Spagnolo* (*Technical University of Bari*);

14:00 Using QEPAS in Gas Mixtures — Challenges and
Invited Strategies
Ulrike Willer (*Clausthal University of Technology*); *Mario Mordmuller* (*Clausthal University of Technology*); *Wolfgang Schade* (*Clausthal University of Technology*);

14:20 Photoacoustic Spectroscopy with Resonant Devices:
Invited From QEPAS to Silicon Resonant Detection
Aurore Vicet (*Université de Montpellier*); *Michael Bahriz* (*Université de Montpellier*); *Kaim Chamassi* (*Université de Montpellier*); *Roman Rousseau* (*Université de Montpellier*); *Zeineb Loghmari* (*Université de Montpellier*); *Dalil Oussalah* (*Université de Montpellier*);

14:40 Compact QEPAS Sensor for Multi-gas Detection
Invited
Yufei Ma (*Harbin Institute of Technology*); *Ying He* (*Harbin Institute of Technology*); *Yao Tong* (*Harbin Institute of Technology*);

15:00 From Lab to Market: Making a New Technology Ac-
Invited cessible for a Broad Community
Verena Mackowiak (*Thorlabs GmbH*); *Bruno Gross* (*Thorlabs GmbH*); *Hubert Rossmadl* (*Thorlabs GmbH*); *Christian Kipplinger* (*Thorlabs GmbH*);

15:20 New Silicon Micro-electromechanical Resonator for Enhanced Photoacoustic Spectroscopy Applications
Kaim Chamassi (*Universite de Montpellier*); *Aurore Vicet* (*Universite de Montpellier*); *Roman Rousseau* (*Universite de Montpellier*); *Dalil Oussalah* (*Universite de Montpellier*); *Michael Bahriz* (*Universite de Montpellier*);

15:40 **Coffee Break**

16:00 Non-invasive Quantum Cascade Laser Photoacoustic
Invited Glucose Sensing
Markus W. Sigrist (*ETH Zurich*); *Jonas Kottmann* (*BIOTRONIK AG*); *Julien M. Rey* (*IQE-ETH Zurich*);

16:20 Suppression of Flicker-noise in Free-running
Invited Quantum-cascade Lasers
Masamichi Yamanishi (*Hamamatsu Photonics KK*); *Toru Hirohata* (*Hamamatsu Photonics KK*);

16:40 Filter-free Direct Measurements of Light Absorption
Invited by Aerosols Using Photoacoustic Spectroscopy (PAS)
Gaoxuan Wang (*Universite du Littoral Cote d'Opale*); *Hongming Yi* (*Universite du Littoral Cote d'Opale*); *Patrice Hubert* (*Universite de Lille1*); *Alexandre Deguine* (*Universite de Lille1*); *Denis Petitprez* (*Universite de Lille1*); *Eric Fertein* (*University of the Littoral Opal Coast*); *Julien M. Rey* (*IQE-ETH Zurich*); *Markus W. Sigrist* (*ETH Zurich*); *Dean S. Venables* (*University College Cork*); *Wei Dong Chen* (*Universite du Littoral Cote d'Opale*);

17:00 Trace Gases Sensing with Laser Absorption Spec-
Invited troscopy and Photoacoustic Spectroscopy
Kun Liu (*Anhui Institute of Optics & Fine Mechanics, Chinese Academy of Sciences*); *Tu Tan* (*Anhui Institute of Optics & Fine Mechanics, Chinese Academy of Sciences*); *Guishi Wang* (*Anhui Institute of Optics & Fine Mechanics, Chinese Academy of Sciences*); *Weidong Chen* (*Universite du Littoral Cote d'Opale*); *Xiaoming Gao* (*Anhui Institute of Optics and Fine Mechanics, Chinese Academy of Sciences*);

17:20 Dual-comb-spectroscopic Single-pixel Imaging with
Invited High Frequency Resolution and Accuracy
Kyuki Shibuya (*Tokushima University*); *Takeo Minamikawa* (*Tokushima University*); *Yasuhiro Mizutani* (*Osaka University*); *Hirotsugu Yamamoto* (*Utsunomiya University*); *Takeshi Yasui* (*Tokushima University*); *Tetsuo Iwata* (*Tokushima University*);

17:40 Dual-comb Spectroscopy in the Mid-infrared and Terahertz Using Quantum and Interband Cascade Lasers
Invited
Jonas Westberg (*Princeton University*); *L. A. Sterczewski* (*Princeton University*); *Gerard Wysocki* (*Princeton University*);

18:00 Application of Spectroscopic Techniques for the Characterization of Atmospheric Particulate Matter
Invited
Tomoki Nakayama (*Nagoya University*);

18:20 Hyperspectral and Ultraspectral Imaging by Compressive Sensing
August Issac (*Ben-Gurion University of the Negev*); *Yaniv Oiknine* (*Ben-Gurion University of the Negev*); *Adrian Stern* (*Ben-Gurion University of the Negev*);

Session 4P12a
FocusSession.SC3&SC4: Recent Advances in Devices and System Technologies for Terahertz Wireless Communications 2

Saturday PM, August 4, 2018

Room A4

Organized by Tadao Nagatsuma, Guillaume Ducournau

Chaired by Tadao Nagatsuma, Guillaume Ducournau

13:00 Terahertz Package Technologies for Practical Applications
Invited
Ho-Jin Song (*Pohang University of Science and Technology (POSTECH)*);

13:20 The Applications of Ultra-fast Type-II Hybrid-absorber Uni-traveling Carrier Photodiodes for Extremely Wide Band Photonic THz Transmitters
Invited
Jinwei Shi (*National Central University*);

13:40 Photonics Integrated Circuit for High-power Coherent THz Generation
Invited
Kazutoshi Kato (*Kyushu University*);

14:00 Towards 100 Gbps in the 300 GHz Band Using Linear Uni-travelling Carrier Photodiodes
Invited
V. K. Chinni (*Université Lille, CNRS, Centrale Lille, ISEN, Université Valenciennes*); *S. Bretin* (*Université Lille, CNRS, Centrale Lille, ISEN, Université Valenciennes*); *P. Latzel* (*Université Lille, CNRS, Centrale Lille, ISEN, Université Valenciennes*); *M. Zegaoui* (*Université Lille, CNRS, Centrale Lille, ISEN, Université Valenciennes*); *C. Coinon* (*Université Lille, CNRS, Centrale Lille, ISEN, Université Valenciennes*); *X. Wallart* (*Université Lille, CNRS, Centrale Lille, ISEN, Université Valenciennes*); *E. Peytavit* (*Université Lille, CNRS, Centrale Lille, ISEN, Université Valenciennes*); *J. F. Lampin* (*Université Lille, CNRS, Centrale Lille, ISEN, Université Valenciennes*); *K. Engenhardt* (*Tektronix GmbH*); *P. Szriftgiser* (*Université Lille 1*); *M. Zaknoune* (*Université Lille, CNRS, Centrale Lille, ISEN, Université Valenciennes*); *Guillaume Ducournau* (*Institute of Electronics, Microelectronics and Nanotechnology (IEMN), CNRS/University of Lille*);

14:20 Photonic Integrated Circuits for Ultrawide Frequency Range Generation, from Microwaves to Terahertz
Keynote
Guillermo Carpintero del Barrio (*Universidad Carlos III de Madrid*); *Robinson Cruzoe Guzman Martinez* (*Universidad Carlos III de Madrid*); *Mu-Chieh Lo* (*Universidad Carlos III de Madrid*); *Muhsin Ali* (*Universidad Carlos III de Madrid*); *Alberto Zarzuelo* (*Universidad Carlos III de Madrid*); *Luis-Enrique Garcia Munoz* (*Universidad Carlos III de Madrid*); *Daniel Segovia-Vargas* (*Universidad Carlos III de Madrid*); *David De Felipe* (*Fraunhofer Heinrich Hertz Institute*); *Norbert Keil* (*Fraunhofer Heinrich Hertz Institute*);

14:50 A 600-GHz-band Photodiode with Rectangular Waveguide Output and Its Application to Communication
Invited
Tadao Nagatsuma (*Osaka University*);

15:10 Wireless Terahertz Communications Using Optoelectronic Techniques
Invited
T. Harter (*Karlsruhe Institute of Technology*); *S. Ummethala* (*Karlsruhe Institute of Technology*); *S. Muehlbrandt* (*Karlsruhe Institute of Technology*); *M. Blaicher* (*Karlsruhe Institute of Technology*); *K. Koehnle* (*Karlsruhe Institute of Technology*); *M. M. H. Adib* (*Karlsruhe Institute of Technology*); *M. Weber* (*Karlsruhe Institute of Technology*); *S. Wolf* (*Karlsruhe Institute of Technology*); *Y. Kutuvantavida* (*Karlsruhe Institute of Technology*); *J. N. Kemal* (*Karlsruhe Institute of Technology*); *S. Nellen* (*Fraunhofer Heinrich Hertz Institute*); *L. Hahn* (*Karlsruhe Institute of Technology*); *A. Tessmann* (*Fraunhofer Institute for Applied Solid State Physics*); *M. Walther* (*Fraunhofer Institute for Applied Solid State Physics*); *T. Zwick* (*Karlsruhe Institute of Technology*); *S. Randel* (*Karlsruhe Institute of Technology*); *W. Freude* (*Karlsruhe Institute of Technology*); *C. Koos* (*Karlsruhe Institute of Technology*);

15:40 **Coffee Break**

16:00 Spectral-efficient Terahertz-wave Communication Assisted by Photonics
Invited
Koichi Takiguchi (*Ritsumeikan University*);

16:20 Coherent THz Wireless Signals for Distributed Remote Antenna Units
Invited
Haymen Shams (*University College London*); *Katarzyna Balakier* (*University College London*); *Luis Gonzalez-Guerrero* (*University College London*); *Martyn J. Fice* (*University College London*); *Cyril C. Renaud* (*University College London*); *Alwyn J. Seeds* (*University College London*);

16:40 Terahertz-wave Communication System Using a Traveling-wave Tube Amplifier
Invited
Atsushi Kanno (*National Institute of Information and Communications Technology*); *Norihiko Sekine* (*National Institute of Information and Communications Technology*); *Akifumi Kasamatsu* (*National Institute of Information and Communications Technology*); *Naokatsu Yamamoto* (*National Institute of Information and Communications Technology*); *Mitsuru Yoshida* (*NEC Network and Sensor Systems, Ltd*); *Norio Masuda* (*National Institute of Information and Communications Technology*);

Session 4P12b
SC5&SC4: On Earth's Electromagnetic Environment, Space Weather Phenomena, and Global Climate Variability

Saturday PM, August 4, 2018

Room A4

Organized by Rachid Talhi

Chaired by Rachid Talhi

17:00 Study on Seasonal Variability of Ionospheric TEC Estimated Using Signals of Compass/BeiDou Geostationary Satellites
Ekaterina Anatolyevna Kozlovtseva (*Lomonosov Moscow State University*); *Nikita Alekseyevich Tereshin* (*Lomonosov Moscow State University*); *Artem M. Padokhin* (*M. V. Lomonosov Moscow State University*); *Gregory A. Kurbatov* (*M. V. Lomonosov Moscow State University*);

17:20 Monitoring Traveling Ionospheric Disturbances Using GNSS Interferometry with Geostationary Satellites
Nikita Alekseyevich Tereshin (*Lomonosov Moscow State University*); *Ekaterina Anatolyevna Kozlovtseva* (*Lomonosov Moscow State University*); *Artem M. Padokhin* (*M. V. Lomonosov Moscow State University*); *Gregory A. Kurbatov* (*M. V. Lomonosov Moscow State University*);

17:40 Tool for Creating Maps of GNSS Total Electron Content Variations
Yury Vladimirovich Yasyukevich (*Institute of Solar-Terrestrial Physics (ISTP), Siberian Branch of Russian Academy of Sciences*); *Ilya V. Zhivetiev* (*Institute of Solar-Terrestrial Physics SB RAS*); *Alexander V. Kiselev* (*Institute of Solar-Terrestrial Physics SB RAS*); *Ilya K. Edemskiy* (*Institute of Solar-Terrestrial Physics (ISTP), Siberian Branch of Russian Academy of Sciences*); *S. V. Syrovatsky* (*Institute of Solar-Terrestrial Physics (ISTP), Siberian Branch of Russian Academy of Sciences*); *Alexei S. Shabalin* (*Institute of Solar-Terrestrial Physics SB RAS*); *Artem M. Vesnin* (*Institute of Solar-Terrestrial Physics SB RAS*);

18:00 Global Electron Content in the 23rd and 24th Solar Cycles
Yury Vladimirovich Yasyukevich (*Institute of Solar-Terrestrial Physics (ISTP), Siberian Branch of Russian Academy of Sciences*); *Anna S. Yasyukevich* (*Institute of Solar-Terrestrial Physics of Siberian Branch of Russian Academy of Sciences*); *Ilya V. Zhivetiev* (*Institute of Solar-terrestrial Physics SB RAS*);

18:20 Anthropogenic Electromagnetic Pollution: Is It a Contribution to Global Climate Variability?
Rachid Talhi (*University of Tours and CNRS/LPCEE*);

Session 4P13
SC3: Progresses in the Study of Topological Waves 2

Saturday PM, August 4, 2018

Room A5

Organized by Jian-Hua Jiang, Xiao Hu

Chaired by Xiao Hu, Jie Ren

13:00 Topological Localized State in Photonic Crystal Nanobeam (Invited)
Satoshi Iwamoto (*The University of Tokyo*); *Yasutomo Ota* (*The University of Tokyo*); *Ryota Katsumi* (*The University of Tokyo*); *Katsuyuki Watanabe* (*The University of Tokyo*); *Yasuhiko Arakawa* (*The University of Tokyo*);

13:20 Deterministic Interface States and Unidirectional Electromagnetic Propagations in Two Dimensional Photonic Crystals (Invited)
Yu Ting Yang (*Soochow University*); *Zhi Hong Hang* (*Soochow University*);

13:40 Experimental Observation of Valley-locked Topological Edge States in Designer Surface Plasmon Crystals
Xiaoxiao Wu (*The Hong Kong University of Science & Technology*); *Yan Meng* (*Chongqing University*); *Jingxuan Tian* (*The Hong Kong University of Science & Technology*); *Yingzhou Huang* (*Chongqing University*); *Hong Xiang* (*Chongqing University*); *Dezhuan Han* (*Chongqing University*); *Weijia Wen* (*The Hong Kong University of Science and Technology*);

14:00 Acoustic Topological States (Invited)
Ming-Hui Lu (*Nanjing University*); *Cheng He* (*Nanjing University*); *Hao Ge* (*Nanjing University*); *Xu Ni* (*Nanjing University*); *Si-Yuan Yu* (*Nanjing University*); *Yan-Feng Chen* (*Nanjing University*);

14:20 Tuning Topological Phase Transitions in Hexagonal Photonic Lattices Made of Triangular Rods (Invited)
Guang-Yu Guo (*National Taiwan University*); *Hsun-Chi Chan* (*National Taiwan University*);

14:40 Experimental Studies of All-dielectric Topologically Nontrivial Structures (Invited)
Alexey P. Slobozhanyuk (*ITMO University*); *Yuri S. Kivshar* (*Australian National University*); *Alexander B. Khanikaev* (*ITMO University*);

15:00 Experimental Discovery of Nodal Chains in Photonic Crystals (Invited)
Rong-Juan Liu (*Institute of Physics, Chinese Academy of Sciences*);

15:20 Dirac Photonics and Topological Light-trapping (Invited)
Jian-Hua Jiang (*Soochow University*);

15:40 **Coffee Break**

16:00 Type-II Dirac Photons at the Metasurfaces (Invited)
Chuandeng Hu (*The Hong Kong University of Science and Technology*); *Bo Hou* (*Soochow University*); *Weijia Wen* (*The Hong Kong University of Science and Technology*);

16:20 Topological Nodal-line Semimetals in FCC Photonic Crystals (Invited)
Takuto Kawakami (*Kyoto University*); *Xiao Hu* (*National Institute for Materials Science*);

16:40 Transitional Weyl and Dirac Points in Photonics (Keynote)
Shuang Zhang (*University of Birmingham*);

17:10 Topological Phonon and Chiral Phonon (Invited)
Lifa Zhang (*Nanjing Normal University*);

17:30 Topological Classification of Linear and Weakly Nonlinear Electromagnetic Media (Invited)
Giuseppe De Nittis (*Pontificia Universidad Catolica de Chile*); *Max Lein* (*Tohoku University*);

Session 4P14a
Emerging Electromagnetic Functionalization of Graphene and 2D Materials for Terahertz Device Applications 2

Saturday PM, August 4, 2018

Room A6

Organized by Taiichi Otsuji

Chaired by Victor Ryzhii, Taiichi Otsuji

13:20 Cyclotron Resonance in Graphene/h-BN van der Waals Heterostructures (Invited)
Tomoki Machida (*Institute of Industrial Science (IIS), University of Tokyo*);

13:40 Comparison of Infrared and Terahertz Photodetectors Based on Graphene, CdHgTe, and A_3B_5 Quantum-well Heterostructures
Invited
Victor Ryzhii (*Tohoku University*); *Taiichi Otsuji* (*Tohoku University*); *Maxim Ryzhii* (*The University of Aizu*); *Valeriy E. Karasik* (*Bauman Moscow State Technical University*); *Vladimir G. Leiman* (*Moscow Institute of Physics and Technology (State University)*); *Vladimir Mitin* (*University at Buffalo, The State University of New York*); *Michael S. Shur* (*Rensselaer Polytechnic Institute*); *V. Ya. Aleshkin* (*Institute for Physics of Microstructures*); *A. A. Dubinov* (*University of Aizu*); *S. V. Morozov* (*Institute for Physics of Microstructures*);

Session 4P14b
Metamaterials and Plasmonics 2

Saturday PM, August 4, 2018

Room A6

Chaired by Jianhua Zhou

14:20 Surface Plasmon Infrared Spectrum Transmission Enhancement Broadening by Introducing Distance-varying Metallic Holes
Xiumin Xie (*Southwest Institute of Technical Physics*); *Qiang Xu* (*Southwest Institute of Technical Physics*); *Jian Chen* (*Southwest Institute of Technical Physics*); *Qian Dai* (*Southwest Institute of Technical Physics*); *Zhu Shi* (*Southwest Institute of Technical Physics*); *Libo Yu* (*Southwest Institute of Technical Physics*); *Qiang Zhou* (*University of Electronic Science and Technology of China*); *Hai-Zhi Song* (*Southwest Institute of Technical Physics*);

14:40 1D and 2D Left-handed Materials Loaded with Circularly Coupled Ring-circular
Baiqiang You (*Xiamen University*); *Tao Huang* (*Xiamen University*); *Jianhua Zhou* (*Xiamen University*); *Yun Peng Shang* (*Xinghai Communication Science and Technology Co., Ltd.*); *Haike Xu* (*Xiamen University*);

15:00 Plasmonically Enhanced Spectrally-sensitive Coatings for Gradient Heat Flux Sensors
Kevin Conley (*Aalto University*); *Vaibhav Thakore* (*University of Western Ontario*); *Tapio Ala-Nissila* (*Aalto University*);

15:40 **Coffee Break**

Session 4P14c
SC1: Researches of Electromagnetic Field Problem in KOSEN

Saturday PM, August 4, 2018

Room A6

Organized by Toshihiko Shibazaki, Toshihisa Kamei

Chaired by Toshihisa Kamei

16:00 A Study on Highly Resonant Wireless Power Transfer Scheme Using Planar Coils
Kei Asahi (*Tokyo Metropolitan College of Industrial Technology*); *Kazuyuki Takasaki* (*Tokyo Metropolitan College of Industrial Technology*); *Ryoji Wakabayashi* (*Tokyo Metropolitan College of Industrial Technology*);

16:20 Development of Optics Simulator Using Efficient Laguerre-based FDTD Method
Ryota Ikazaki (*Tokuyama College*); *Norihiko Harada* (*Tokuyama College*);

16:40 FDTD Analysis of the Complex Current Distribution on a Circular Disk Exposed to a Plane EM Wave with Oblique Incident Angle
Takuto Muto (*Science and Technology Inst., Co.*); *Teppei Misumi* (*Science and Technology Inst., Co.*);

17:00 Development of a Simple Ground-based Synthetic Aperture Radar System for Monitoring Fault Creep
Yuya Akiyama (*Tokyo Metropolitan College of Industrial Technology*); *Naoki Miyata* (*Tokyo Metropolitan College of Industrial Technology*); *Masahiro Yoshida* (*Tokyo Metropolitan College of Industrial Technology*); *Katsumi Kurita* (*Tokyo Metropolitan College of Industrial Technology*); *Motoyuki Sato* (*Tohoku University*);

17:20 Diffracted Field Calculation Using Multiple Precision Arithmetic and Parallel Computing
Takashi Kuroki (*Tokyo Metropolitan College of Industrial Technology*); *Toshihiko Shibazaki* (*Tokyo Metropolitan College of Industrial Technology*); *Teruhiro Kinoshita* (*Tokyo Polytechnic University*);

17:40 Numerical Analysis Using FDTD Method in Periodic Structure of Capacitive Iris
Chihiro Osawa (*Tokyo Metropolitan College of Technology*); *Shota Arai* (*Science & Technology Inst., Co.*); *Toshihiko Shibazaki* (*Tokyo Metropolitan College of Industrial Technology*); *Teruhiro Kinoshita* (*Tokyo Institute of Polytechnics*);

18:00 Analysis of Phase Mode Variation Due to Bias Voltage in Arrayed Oscillators Using Resonant Tunneling Diodes Integrated with Bow-tie Antennas
Masahiro Fukuoka (*Tokyo Metropolitan College of Industrial Technology*); *Kiyoto Asakawa* (*Tokyo Metropolitan College of Industrial Technology*); *Michihiko Suhara* (*Tokyo Metropolitan University*);

18:20 An Examination of Simulation for PAPR Reduction in OFDM Wave
Yu Kobari (*Tokyo Metropolitan College of Industrial Technology*); *Kazuyuki Takasaki* (*Tokyo Metropolitan College of Industrial Technology*); *Ryoji Wakabayashi* (*Tokyo Metropolitan College of Industrial Technology*);

Session 4P15
SC4: Wireless Power Transfer and Energy Harvesting

Saturday PM, August 4, 2018

Room A7

Organized by Ning Li, Qiaowei Yuan

Chaired by Ning Li, Jiafeng Zhou

13:20 Wireless Power Transfer System with Constant Inductive Coupling over a Wide Range of Distances
Y. Zhuang (*University of Liverpool*); *A. Chen* (*University of Liverpool*); *C. Xu* (*University of Liverpool*); *Y. Huang* (*University of Liverpool*); *Jiafeng Zhou* (*University of Liverpool*);

13:40 Design of Inductive Powering Unit for Battery-less Implantable Medical Devices
Arseny Anatolevich Danilov (*Joint Stock Company "Zelenograd Innovative Technology Centre"*); *Eduard Adipovich Mindubaev* (*Joint Stock Company "Zelenograd Innovative Technology Centre"*); *Konstantin Olegovich Gurov* (*National Research University of Electronic Technology*); *Rafael Rafaelievich Aubakirov* (*Joint Stock Company "Zelenograd Innovative Technology Centre"*); *Oleg Alekseevich Surkov* (*Joint Stock Company "Zelenograd Innovative Technology Centre"*); *Sergey Vasilyevich Selishchev* (*National Research University of Electronic Technology "MIET"*);

14:00 Universal Output Characteristics of the Two-coil Resonant Wireless Energy Transfer System
Arseny Anatolevich Danilov (*Joint Stock Company "Zelenograd Innovative Technology Centre"*); *Eduard Adipovich Mindubaev* (*Joint Stock Company "Zelenograd Innovative Technology Centre"*); *Sergey Vasilyevich Selishchev* (*National Research University of Electronic Technology "MIET"*);

14:20 An Optimal Design Method of Coils for Magnetic Coupled Wireless Power Transfer System
Peiyue Wang (*Chongqing University*); *Yue Sun* (*Chongqing University*); *Zhao-Hong Ye* (*Chongqing University*); *Xin Dai* (*Chongqing University*); *Chunsen Tang* (*Chongqing University*); *Zhi-Juan Liao* (*Chongqing University*);

14:40 A Comprehensive Electromagnetic Design, Simulation and Analysis of Wireless Charging Coils for Large Power Applications
Haris Gulzar (*UET Lahore*); *Noor Ul Ain* (*UET Lahore*); *Talha Zahid* (*UET Lahore*); *Muhammad Farhan Yaseen* (*UET Lahore*); *Ali Hussain* (*UET Lahore*); *Syed Abdul Rahman Kashif* (*UET Lahore*);

15:00 Investigation of Multi-layer Metamaterial for Enhancing Efficiency of Near-field Wireless Power Transfer Systems
Ming-Lung Kung (*R.O.C. Air Force Academy*); *Ken-Huang Lin* (*National Sun Yat-Sen University*);

15:40 **Coffee Break**

16:00 Enhanced RF Energy Harvesting by Using Resonant Cavities
Guillem Martinez De Arriba (*Universidad Autonoma de Barcelona*); *Ertugrul Coskuner* (*Universidad Autonoma de Barcelona*); *Joan Jose Garcia-Garcia* (*Universitat Autonoma de Barcelona*);

16:20 Opportunities and Challenges for Smart LED Light Bulbs: Illumination, Communication, Indoor Positioning and Energy Harvesting
Ming Che (*Kyushu University*); *Takeshi Kuboki* (*Kyushu University*); *Kazutoshi Kato* (*Kyushu University*);

16:40 Efficiency of Multi-loop Wireless Power Transfer System Depending on Switch and Tunable Matching Network Configurations
Kyeongmok Ryu (*Sogang University*); *Jinho Jeong* (*Sogang University*);

Session 4P16a
Optical Nonreciprocity and Its Applications

Saturday PM, August 4, 2018

Room A8

Organized by Lei Shi

Chaired by Lei Shi

13:20 Monolithic Integration of Low Loss Magneto-optical Ce:YIG Thin Films and a Broadband Optical Isolator on Silicon
Yan Zhang (*University of Electronic Science and Technology of China*); *Chuangtang Wang* (*University of Electronic Science and Technology of China*); *Qingyang Du* (*MIT*); *Shuyuan Liu* (*University of Electronic Science and Technology of China*); *Takian Fakhrul* (*MIT*); *Caroline A. Ross* (*MIT*); *Juejun Hu* (*Massachusetts Institute of Technology*); *Lei Bi* (*University of Electronic Science and Engineering of China*);

13:40 Heterogeneously Integrated Optical Isolators and Circulators for Silicon Photonics
Duanni Huang (*University of California*); *Paolo Pintus* (*University of California*); *Jonathan Peters* (*University of California*); *Yuya Shoji* (*Tokyo Institute of Technology*); *Tetsuya Mizumoto* (*Tokyo Institute of Technology*); *John E. Bowers* (*University of California*);

14:00 Forward Stimulated Brillouin Scattering in Silicon-based Chips
Junqiang Sun (*Huazhong University of Science and Technology*);

14:20 All-optically Controlled Non-reciprocal Photonic Devices Based on Optomechanical Microresonator
Zhen Shen (*University of Science and Technology of China*); *Yan-Lei Zhang* (*University of Science and Technology of China*); *Yuan Chen* (*University of Science and Technology of China*); *Fangwen Sun* (*University of Science and Technology of China*); *Xubo Zou* (*University of Science and Technology of China*); *Guangcan Guo* (*University of Science and Technology of China*); *Changling Zou* (*University of Science and Technology of China*); *Chun-Hua Dong* (*University of Science and Technology of China*);

14:40 Optical Nonreciprocity in Integrated Optomechanical Devices
Linhao Ren (*Huazhong University of Science and Technology*); *Xinbiao Xu* (*Huazhong University of Science and Technology*); *Lei Shi* (*Huazhong University of Science and Technology*); *Xinliang Zhang* (*Huazhong University of Science and Technology*);

15:00 Brillouin-based Non-reciprocal Light Storage
Moritz Merklein (*The University of Sydney*); *Birgit Stiller* (*The University of Sydney*); *Benjamin J. Eggleton* (*University of Sydney*);

15:40 **Coffee Break**

Session 4P16b
Laser, Optical Sensors and Environmental Monitoring

Saturday PM, August 4, 2018

Room A8

Chaired by Ibrahim H. Giden, Kaiyu Cui

16:00 Novel Photonic Crystal Based Interferometric Design for All-optical Sensing Applications
Ibrahim H. Giden (*TOBB University of Economics and Technology*); *Utku G. Yasa* (*TOBB University of Economics and Technology*); *Hamza Kurt* (*TOBB University of Economics and Technology*);

16:20 Piezoelectric Sensors' Electric Response When Used as Detectors for Short Time Photo Acoustic Pulses with Heat Transport Included
Edahi-Antonio Gutierrrez-Reyes (*CONACYT — Centro de Investigación Cientfica y de Educación Superior de Ensenada*); *C. Garcia-Segundo* (*Universidad Nacional Autónoma de México*); *Augusto Garcia-Valenzuela* (*Universidad Nacional Autónoma de México*); *B. Reyes-Ramirez* (*Universidad de Guanajuato Campus León*); *Roberto Ortega* (*CONACYT — Centro de Investigación Cientfica y de Educación Superior de Ensenada*);

16:40 Investigation of Distributed Fibre Optic Sensing for Coal Burst Prediction — A Laboratory Experiment
Xun Luo (*CSIRO Energy*);

17:00 All-optical Fiber Power-frequency Electric Field Sensor Using a Twin-FBG Based Fiber-optic Accelerometer with Charged Polyimide
Lutang Wang (*Shanghai University*); *Nian Fang* (*Shanghai University*);

17:20 Phonon Laser with Hetero Optomechanical Crystals
Kaiyu Cui (*Tsinghua University*); *Zhilei Huang* (*Tsinghua University*); *Yidong Huang* (*Tsinghua University*);

17:40 Tunable Extremely Ultra-violet Emitter Based on Threshold-less Cherenkov Radiation
Long Xiao (*China Ship Development and Design Center*); *Jun-Feng Chen* (*Huazhong University of Science and Technology*); *Qi Zhang* (*China Ship Development and Design Center*); *Longying Guo* (*China Ship Development and Design Center*);

Session 4P17a
SC3: Photonics-based Signal Source and Its Application 2

Saturday PM, August 4, 2018

Room A9

Organized by Fangzheng Zhang, Jianqiang Li

Chaired by Fangzheng Zhang

13:20 Microwave Photonics for Integrated Multi-band RF Receiving and Emitting
Dan Zhu (*Nanjing University of Aeronautics and Astronautics*); *Shilong Pan* (*Nanjing University of Aeronautics and Astronautics*);

13:40 Frequency Stabilization and Spurious Suppression for the Optoelectronic Oscillator
Jian Dai (*Beijing University of Posts and Telecommunications*); *Kun Xu* (*Beijing University of Posts and Telecommunications*);

14:00 Photonic Generation of Microwave Signals with Tunable Modulation Formats
Jia Ye (*Southwest Jiaotong University*); *Lianshan Yan* (*Southwest Jiaotong University*); *Hengyun Jiang* (*Southwest Jiaotong University*); *Xihua Zou* (*Southwest Jiaotong University*); *Wei Pan* (*Southwest Jiaotong University*); *Bin Luo* (*Southwest Jiaotong University*);

14:20 A Multi-antenna and Clock-synchronized GNSS-over-fiber System with High Vertical Accuracy
Xiangchuan Wang (*Nanjing University of Aeronautics and Astronautics*); *Xin Jiang* (*Nanjing University of Aeronautics and Astronautics*); *Shilong Pan* (*Nanjing University of Aeronautics and Astronautics*);

Session 4P17b
SC3: Electromagnetic and Optical Properties of Photonic Materials, Structures, and Crystals

Saturday PM, August 4, 2018

Room A9

Organized by Tzong-Jer Yang

Chaired by Szu-Cheng Cheng, Wen-Kai Kuo

14:40 Group Velocities and Resonance State in Metallic Photonic Crystals
Khee Lam Low (*KDU Penang University College*); *Mohd Zubir Mat Jafri* (*Universiti Sains Malaysia*); *Sohail A. Khan* (*Universiti Sains Malaysia*);

15:00 Optical Properties of Spinor Exciton-polariton Condensates in a Magnetic Field
Ting-Wei Chen (*National Chiayi University*); *Szu-Cheng Cheng* (*Chinese Culture University*);

15:20 The Optical Properties of Oblique Incident on One Dimensional Photonic Crystal with Defect Layer Surrounded by Graphene
Hua-Cian Huang (*National Taiwan Normal University*); *Chien-Jang Wu* (*National Taiwan Normal University*); *Tzong-Jer Yang* (*National Chiao Tung University*);

15:40 **Coffee Break**

16:00 Equivalent Circuit Analysis of Subwavelength Periodic Microstrip Structures for Transmission of Low Frequency Surface Plasmon Polaritons
Po Wei Wang (*Chung Hua University*); *Jin-Jei Wu* (*Chung Hua University*); *Tzong-Jer Yang* (*National Chiao Tung University*); *Jian Qi Shen* (*Zhejiang University*); *Li-Yi Cheng* (*Chung Hua University*); *Chin-Chih Chang* (*Chung Hua University*);

16:20 Implementation of Narrowband and Tunable Guided-mode Resonance Filters Using Nanoimprinting Process
Wen-Kai Kuo (*National Formosa University*); *Che-Jung Hsu* (*National Formosa University*); *Yu-Ming Chang* (*National Formosa University*);

16:40 High-$\boldsymbol{Q}$ Nodes-free Mode for Lasing
Natalya Victorovna Rudakova (*Siberian Federal University*); *Ivan Vladimirovich Timofeev* (*Siberian Federal University*); *Stepan Yakovlevich Vetrov* (*Siberian Federal University*); *Wei Lee* (*National Chiao Tung University*);

17:00 Quasi-bound States in the Continuum in a Finite Chain of Dielectric Scatterers: Theory and Experiment
M. Balyzin (*ITMO University*); *Z. Sadrieva* (*ITMO University*); *M. Belyakov* (*ITMO University*); *P. Kapitanova* (*ITMO University*); *A. Sadreev* (*Federal Research Center KSC SB RAS*); *Andrey A. Bogdanov* (*ITMO University*);

Session 4P18a
Novel Approach to Electromagentics

Saturday PM, August 4, 2018
Room A10
Organized by Simin Feng
Chaired by Sahin Kaya Ozdemir

13:00 Analytical Method for the Wave Propagation in Random Media
Hichem Eleuch (*Abu Dhabi University*);

13:20 Coalescence of Exceptional Points in PT-symmetric Conductive/Magnetic Waveguides
Jin Wang (*Southeast University*); *Kin Hung Fung* (*The Hong Kong Polytechnic University*);

13:40 Reflecting on an Alternative (Parity-time-symmetric) Quantum Theory, and Its Analog in Optics
Ray-Kuang Lee (*National Tsing-Hua University*);

14:00 Electromagnetic Fields in Lossy Open Dielectric Spheres
Invited
Ingo Wolff (*IMST GmbH*);

14:20 Novel Fractional-dimensional Approach to Electromagnetics
Muhammad Zubair (*Information Technology University (ITU)*); *Yee Sin Ang* (*Singapore University of Technology and Design (SUTD)*); *Lay Kee Ang* (*Singapore University of Technology and Design (SUTD)*);

14:40 Exceptional Points in Optics and Optomechanics
Invited
Sahin Kaya Ozdemir (*The Pennsylvania State University*);

15:00 Data Analytics for Electromagnetic Signals of Opportunities in Ambient of Objects over Heterogeneous Surface
Kun-Shan Chen (*University of California at Santa Barbara*); *Hirokazu Kobayashi* (*Osaka Institute of Technology*); *Chih-Yuan Chu* (*Xuchang University*);

15:20 Extension of Maxwell's Equations for Charge Creation-annihilation and Its Applications
Hideki Mutoh (*Link Research Corporation*);

15:40 **Coffee Break**

Session 4P18b
Microwave and Millimeter Wave Circuits and Devices, CAD

Saturday PM, August 4, 2018
Room A10
Chaired by Baruch Levush, Jinho Jeong

16:00 Improvement of Transmission Characteristics of Composite Right/Left Handed Transmission Lines by Using Impedance Matching
Akikazu Mishiro (*Doshisha University*); *Hiroyuki Deguchi* (*Doshisha University*); *Mikio Tsuji* (*Doshisha University*);

16:20 Generalized Large-signal Modeling of Vacuum Electronic Devices Based on Impedance Matrix Approach
I. A. Chernyavskiy (*Naval Research Laboratory*); *Baruch Levush* (*Naval Research Laboratory*); *J. C. Rodgers* (*Naval Research Laboratory*); *A. N. Vlasov* (*Naval Research Laboratory*); *D. Chernin* (*Leidos, Inc.*); *T. M. Antonsen, Jr.* (*Leidos, Inc.*);

16:40 Improvement of Output Performance in G-band Extended Interaction Klystron
Renjie Li (*Beihang University*); *Cun-Jun Ruan* (*Beihang University*); *Hua-Feng Zhang* (*Beihang University*);

17:00 Design of Broadband InP HBT Power Amplifier Integrated Circuit Operating at Full H-band (220–320 GHz)
Jisu Choi (*Sogang University*); *Jungsik Kim* (*Sogang University*); *Won-Seok Choe* (*Sogang University*); *Jinho Jeong* (*Sogang University*);

17:20 Analysis of SiGe Heterojunction Tunneling Field-effect Transistor in the Microwave Regime through Its Small-signal Equivalent Circuit
Yung Hun Jung (*Gachon University*); *In Man Kang* (*Kyungpook National University*); *Seongjae Cho* (*Gachon University*);

17:40 Design of a 3rd-order Single-loop 1-bit Discrete Time Σ-Δ Modulator
Xiao Chen (*Southeast University*); *Zhigong Wang* (*Southeast University*); *Fei Li* (*Southeast University*);

Session 4P0
Poster Session 6

Saturday PM, August 4, 2018
14:00 PM - 17:00 PM
Room Foyer

1 The Use of a Multi-position Radar System with a Limited Number of Receiving Positions for Operational Control of Small-sized Space Debris
A. I. Baskakov (*National Research University "Moscow Power Engineering Institute"*); *V. G. Grachyov* (*National Research University "Moscow Power Engineering Institute"*); *Vladlen Ilych Gusevsky* (*National Research University "Moscow Power Engineering Institute"*); *Aleksey Aleksandrovich Komarov* (*National Research University "Moscow Power Engineering Institute"*);

2 Airborne Communication Antenna Protection and Stealth
Yanpeng Sun (*Shenyang Aerospace University*); *Fei Li* (*Shenyang Aerospace University*); *Hongpeng Sun* (*Shenyang Aerospace University*); *Lele Qu* (*Shenyang Aerospace University*); *Tao Zhang* (*Shenyang Aircraft Design & Research Institute*);

3 A Dynamic Detection Method for RFID Strain Sensor Tag Antenna Based on USRP X300
Ling Yi Tang (*Tongji University*); *Zi Wei Xia* (*Tongji University*); *Guo Chun Wan* (*Tongji University*); *Mei Song Tong* (*Tongji University*);

4 Multipath Interference Suppression Based on a Stable and Effective Neural Network
Jianhua Zhou (*Xiamen University*); *Hui Zhou* (*Xiamen University*); *Baiqiang You* (*Xiamen University*); *Hsi-Tseng Chou* (*National Taiwan University*); *Yu Tang* (*Xiamen University*);

5 An Improved Algorithm for Fingerprint Identification Based on Line Tracking and Mirror-assisted Method
Lan Chen (*Shanghai Institute of Technology*); *Tao Wang* (*Shanghai Institute of Technology*); *Haiyang Yin* (*Shanghai Institute of Technology*); *He Xu* (*Tongji University*); *Mei Song Tong* (*Tongji University*);

6 Precession Period Extraction of Axisymmetric Space Target from RCS Sequence via Convolutional Neural Network
Jian Chen (*National University of Defense Technology*); *Shiyou Xu* (*National University of Defense Technology*); *Pengjiang Hu* (*National University of Defense Technology*); *Wenzhen Wu* (*National University of Defense Technology*); *Jiangwei Zou* (*National University of Defense Technology*); *Zengping Chen* (*National University of Defense Technology*);

7 The Progress of VLBI Digital Backend Development Based on ROACH2
Jiyun Li (*Shanghai Astronomical Observatory, Chinese Academy of Science*); *Renjie Zhu* (*Shanghai Astronomical Observatory, Chinese Academy of Science*); *Shaoguang Guo* (*Shanghai Astronomical Observatory, Chinese Academy of Science*);

8 An Efficient Systematic Scheme for Antenna Design
Ching-Lieh Li (*Tamkang University*); *Cha-Lin Ni* (*Tamkang University*);

9 The Research of FPGA Acceleration for VLBI Hardware Correlator
Jiangying Gan (*Shanghai Astronomical Observatory, Chinese Academy of Science*); *Zhijun Xu* (*Shanghai Astronomical Observatory, Chinese Academy of Science*);

10 Magnetic Field Stimulation on Cell Line HEK-293T Line with Gadolinium
Teodoro Cordova (*Universidad de Guanajuato*); *Gloria Barbosa* (*University of Guanajuato Campus León*); *Carlos Adrian Gonzalez* (*University of Guanajuato Campus León*); *Luis Fernando Gomez* (*Universidad de Guanajuato*); *David Ramirez* (*Universidad de Guanajuato*);

11 Dual-polarized Broadband Capped Bow-tie Antenna Subarray for 5G Communication
Yan Zheng (*Hunan Univesity*); *Jungang Yin* (*Hunan University*); *Xiaofei Wang* (*State Grid Hunan Electric Power Company*); *Xun Wan* (*State Grid Hunan Electric Power Company*); *Runqi Wu* (*Hunan University*); *Zhengting Liu* (*Hunan Univesity*); *Jian Yang* (*Chalmers University of Technology*);

12 A 10 GHz Oscillator Based on the Principle of Negative Resistance
Seyi Stephen Olokede (*University of Johannesburg*); *Chuckwuemeka Joshua Okonkwo* (*National Open University of Nigeria*); *Clement Anowe Adamariko* (*University of Ilorin*); *Oladimeji O. Oniyide* (*University of Ilorin*); *Mohd Fazil Ain* (*Universiti Sains Malaysia*);

13 A Ka Band Multi-channel Integrated Receiver for Passive Millimeter Wave Imaging System
Xi Chen (*Beihang University*); *Xiuzhu Ye* (*Beihang University*); *Chao Wang* (*Beihang University*); *Anyong Hu* (*Beihang University*); *Jungang Miao* (*Beihang University*);

14 Infinite Speed of Energy Transport
Namik Yener (*Kocaeli University*);

15 Directional Backlight Generator for Larger Field Angle Autostereoscopic Display
Wentao Yu (*Zhejiang University*); *Phil Surman* (*Nanyang Technological University*); *Sailing He* (*Zhejiang University*);

16 Relaxation Sounding Technique for Electron Density Measurement in Space Plasma, Interpretation of the Electrostatic Signatures in the Magnetosphere Regions: The WHISPER Instrument on Board ESA/CLUSTER Mission
Jean Louis Rauch (*Centre National de la Recherche Scientifique, CNRS*); *X. Vallieres* (*LPC2E, 3A av. de la Recherche Scientifique*); *K. Jegou* (*Centre National de la Recherche Scientifique, CNRS*); *P. M. E. Decreau* (*Centre National de la Recherche Scientifique, CNRS*); *P. Canu* (*LPP/CNRS*);

17 Impact from JFET Region Doping on Characteristics of Power MOSFETs
Tao Jin (*Southwest Jiaotong University*); *Quanyuan Feng* (*Southwest Jiaotong University*); *Xiaopei Chen* (*Southwest Jiaotong University*);

18 Pollution Detection for Insulators of Power System Based on Image Processing
Shu Jia Yan (*Shanghai University of Engineering Science*); *Qing Xu* (*Tongji University*); *Mei Song Tong* (*Tongji University*);

19 Implementation of a High PSRR Low Power CMOS Bandgap Voltage Reference Circuit
Min-Chin Lee (*Orient Institute of Technology*); *Shu-Zhe Chang* (*Orient Institute of Technology*);

20 Young's Double-slit Experiment Based on Room-temperature Single Photon Source
Luqing Shao (*Zhejiang University*); *Qianqian Qiao* (*Zhejiang University*); *Xing Lin* (*Zhejiang University*); *Jianhai Zhou* (*Zhejiang University*); *Wei Fang* (*Zhejiang University*);

21 Estimation of Electron Density Profile in the Lower Ionosphere from Ionogram Data by the Full Wave Method
Tetsuo Fukami (*National Institute of Technology, Ishikawa College*); *Isamu Nagano* (*Kanazawa University*); *Ryoichi Higashi* (*National Institute of Technology*);

22 Automatic Target Recognition by Multi-spectral Imaging
Kai-Hsiang Ke (*National Chung Cheng University*); *Kai-Chun Li* (*National Chung Cheng University*); *Wen-Nung Lie* (*National Chung Cheng University*); *Wei-Min Liu* (*National Chung Cheng University*); *You-Fu Zhang* (*National Chung-Shan Institute of Science and Technology*); *Hsiang-Chen Wang* (*National Chung Cheng University*);

23 Automatic Dehazing and Color Restoration for Satellite Remote Sensing Imagery in a Variety of Weather Conditions
Baipeng Li (*Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences*); *Zhengchao Chen* (*Institute of Remote Sensing and Digital Earth, CAS*); *Dakai Xu* (*Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences*); *Chao Yan* (*Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences*); *Jianwei Gao* (*Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences*);

24 GNSS Phase Altimetry of the Sea Level: Mitigation of Effects of Sea Surface Waves
Yaroslaw A. Ilyushin (*Moscow State University*); *Artem M. Padokhin* (*M. V. Lomonosov Moscow State University*);

25 One-minute Rain Rate Distribution in Indonesia Derived from TRMM, GPM and GSMAP Data
Marzuki (*Andalas University*); *Rini Oktaviani* (*Andalas University*); *L. Meylani* (*Kyoto University*); *Hiroyuki Hashiguchi* (*Kyoto University*); *Mutya Vonnisa* (*Andalas University*); *Harmadi* (*Andalas University*);

26 Passive Compensation Design for Inductive Noncontact Interfaces in Modular Mobile Devices
Ting-Yi Huang (*Feng Chia University*); *Hong-Wei Chou* (*Feng Chia University*); *Chih-Heng Lin* (*Feng Chia University*);

27 LTE Area Coverage Probability for All MCS Weighted and Multi-EnodeB Averaged Cell Range in Urban Area
Yi Hua Chen (*Oriental Institute of Technology*); *Mei-Lin Su* (*Oriental Institute of Technology*); *Kai Jen Chen* (*Oriental Institute of Technology*);

28 Development of a Climber Location Information Sharing System in Mountainous Areas
Keigo Ishisaka (*Toyama Prefectural University*); *Yoshihiro Honma* (*Hokuriku Electric Industry Co., Ltd*); *Yuhei Oguri* (*Toyama Prefectural University*);

29 Monitoring of Continental and Ocean Crust Subduction Patterns in the Magma Covered by the Philippine Plate as a Young Drifting Crust
Shigehisa Nakamura (*Kyoto University*);

30 Direct Determination of Laguerre-Gauss Vortex Beams' Topological Charges by Aperture Diffraction Pattern
Jiao Wang (*Xi'an University of Technology*); *Ming-Jun Wang* (*Xianyang Normal College*); *Xi-Zheng Ke* (*Xi'an University of Technology*); *Zhen-Kun Tan* (*Xi'an University of Technology*); *Ting Wu* (*Xi'an University of Technology*);

31 The Asset Administration Shell as a Framework of Industry 4.0
Petr Marcon (*Brno University of Technology*); *Frantisek Zezulka* (*Brno University of Technology*); *Ivo Vesely* (*Brno University of Technology*); *Zdenek Bradac* (*Brno University of Technology*); *Jakub Arm* (*Brno University of Technology*); *Tomas Benesl* (*Brno University of Technology*); *Premysl Dohnal* (*Brno University of Technology*);

32 Empirical Identification of Narrowband Interference in Broadband PLC Networks at the Receiver
Steven O. Awino (*University of KwaZulu Natal*); *Thomas Joachim Odhiambo Afullo* (*University of KwaZulu-Natal (UKZN)*); *Modisa Mosalaosi* (*University of KwaZulu-Natal*); *Peter O. Akuon* (*University of Kwa-Zulu Natal (UKZN)*);

33 Impedance Modelling, Profiling and Characterisation of the Powerline Communication Channel
Florence Chelangat (*University of KwaZulu-Natal*); *Thomas Joachim Odhiambo Afullo* (*University of KwaZulu-Natal (UKZN)*); *Modisa Mosalaosi* (*University of KwaZulu-Natal*);

34 A Study of Hand Motion Trajectory Tracking by Utilizing Channel State Information of off-the-shelf Wi-Fi Devices
Nopphon Keerativoranan (*Tokyo Institute of Technology*); *Kentaro Saito* (*Tokyo Institute of Technology*); *Jun-Ichi Takada* (*Tokyo Institute of Technology*);

35 Gyrotron-based Microwave Systems for Technological Applications: Recent Experiments and New Designs
Alexander I. Tsvetkov (*Federal State Budgetary Scientific Institution "Federal Research Center The Institute of Applied Physics of the Russian Academy of Sciences"*); *Yu. V. Bykov* (*Institute of Applied Physics of the Russian Academy of Sciences (IAP RAS)*); *A. G. Eremeev* (*Institute of Applied Physics of the Russian Academy of Sciences (IAP RAS)*); *Alexander G. Luchinin* (*Institute of Applied Physics of the Russian Academy of Sciences (IAP RAS)*); *Vladimir N. Manuilov* (*Institute of Applied Physics RAS*); *Ivan V. Plotnikov* (*Institute of Applied Physics RAS*); *M. V. Morozkin* (*Institute of Applied Physics of the Russian Academy of Sciences (IAP RAS)*); *M. D. Proyavin* (*Institute of Applied Physics of the Russian Academy of Sciences (IAP RAS)*); *V. V. Holoptsev* (*Institute of Applied Physics of the Russian Academy of Sciences (IAP RAS)*); *Mikhail Yu. Glyavin* (*Federal State Budgetary Scientific Institution "Federal Research Center The Institute of Applied Physics of the Russian Academy of Sciences"*);

36 The Electromagnetic Properties of a Multilayered Resonant Structure Formed from Inorganic Elements
Petr Drexler (*Brno University of Technology*); *Pavel Fiala* (*Brno University of Technology*); *Premysl Dohnal* (*Brno University of Technology*); *Petr Marcon* (*Brno University of Technology*);

37 Nanoparticles of RGD-functionalized Magnetite for Magnetic Hyperthermia of Colon Cancer
Teodoro Cordova (*Universidad de Guanajuato*); *Luis Fernando Gomez* (*Universidad de Guanajuato*); *Juan Luis Pichardo* (*Centro de Investigaciones en Óptica*); *Gustavo Basurto* (*Universidad de Guanajuato*);

38 Measurement of Surface Temperature of Metal under Laser Ablation
Oleg A. Ryabushkin (*State University*); *Dmitrii V. Protasenya* (*Moscow Institute of Physics and Technology (State University)*);

39 Study for the Optical Properties of $BaTiO_3$ Crystal Thin-film Waveguides
Xiangyu Sun (*Changchun University of Science and Technology*); *De Gui Sun* (*Changchun University of Science & Technology; University of Ottawa*); *Ben Niu* (*Nanjing University*); *Kaiping Zhang* (*Institute of Microelectronics of the Chinese Academy of Sciences*); *Mengxi Luo* (*Changchun University of Science & Technology*); *Na Sun* (*Changchun University of Science and Technology*); *Di Wu* (*Nanjing University*); *Yuan Hu* (*Institute of Microelectronics of the Chinese Academy of Sciences*);

40 A Novel M-Z Modulator Based on Photonic Crystal and Nanowire Waveguide
Yuchen Hu (*Nanjing University of Posts and Telecommunications*); *Heming Chen* (*Nanjing University of Posts and Telecommunications*); *Haotian Zhou* (*Nanjing University of Posts and Telecommunications*);

41 Development of Light-emitting Diode Array-based Optical Communications
Chia-Lung Tsai (*National Tsing Hua University*); *Yi-Chen Lu* (*Chang Gung University*); *Chih-Min Yu* (*Chang Gung University*); *Yen-Chen Tu* (*Chang Gung University*);

42 Observation of EM Nonreciprocal Transmission under Very Low Magnetic Field
Yin Poo (*Nanjing University*); *Qun Lou* (*Nanjing University*); *Fei-Fei Li* (*Nanjing University*); *Weijin Pei* (*Nanjing University*); *Rui-Xin Wu* (*Nanjing University*);

43 A Multi-function Device Realized Based on Plasma Metamaterial: Ultra-wide Band Absorber and Reflector
Jing Yang (*Nanjing University of Posts and Telecommunications*); *Hai Feng Zhang* (*Nanjing University of Aeronautics and Astronautics*); *Hao Zhang* (*Nanjing University of Posts and Telecommunications*); *Jia-Xuan Liu* (*Nanjing University of Posts and Telecommunications*);

44 Exciting Resonant Acoustic Phonons by Optical Forces in a Photonic Crystal Nanobeam Cavity
Jin-Chen Hsu (*National Yunlin University of Science and Technology*); *Chieh-Chun Chang* (*National Taiwan Ocean University*); *Tzy-Rong Lin* (*National Taiwan Ocean University*);

45 Biofunctionalized γ-Fe_2O_3@Au Core-shell Magnetoplasmonic Nanoparticles for Alzheimer's Disease Assay
Kuen-Lin Chen (*National Chung Hsing University*); *Jian-Ming Chen* (*National Chung Hsing University*); *Yi-Hsin Lin* (*National Chung Hsing University*); *Lin-Wei Chou* (*National Chung Hsing University*); *Chien-Chung Jeng* (*National Chung Hsing University*); *Chiu-Hsien Wu* (*National Chung Hsing University*);

46 AGILD EM Modeling For GPR Radar Imaging Data Analysis
Jianhua Li (*GL Geophysical Laboratory*); *Qing Xie* (*Hunan Super Computational Science Center*); *Zhongchu Tian* (*Changsha University of Science and Technology*); *Shigu Cao* (*Shenzhen Inequation Technology Co. Ltd.*); *Ganquan Xie* (*GL Geophysical Laboratory*);

47 Photonic Crystal Fabry-Perot Filter Based on Si/SiO_2 for Visible-laser Spectral Selectivity
Dong Qi (*Huazhong University of Science and Technology*); *Xian Wang* (*Huazhong University of Science and Technology*); *Fu Chen* (*Huazhong University of Science and Technology*); *Lei Liu* (*Huazhong University of Science and Technology*); *Rong Zhou Gong* (*Huazhong University of Science and Technology*);

48 Power-efficient Excitation of Optical Surface Waves Using Principles of Holography
Anton I. Ignatov (*All-Russia Research Institute of Automatics*); *Alexander M. Merzlikin* (*Institute for Theoretical and Applied Electromagnetics of the Russian Academy of Sciences*);

49 Humidity and NO_2 Optical Gas Sensors
I. A. Nechepurenko (*Dukhov Research Institute of Automatics*); *Alexander V. Dorofeenko* (*Institute for Theoretical and Applied Electromagnetics, RAS*); *V. V. Kornienko* (*Dukhov Research Institute of Automatics*); *P. N. Tananaev* (*Dukhov Research Institute of Automatics*); *A. V. Baryshev* (*Dukhov Research Institute of Automatics*); *A. S. Baburin* (*Bauman Moscow Technical State University*); *I. A. Rodionov* (*Dukhov Research Institute of Automatics*);

50 Investigation of Low-profile RFID Antenna Using AMC Substrate for Anti-metallic Application
Wang He (*Zhejiang University*); *Bo Xu* (*Ericsson AB*);

51 Full Color Hologram of Single Neuron Using Spatial Frequency Multiplexing
Behnam Tayebi (*Korea University*); *Davood Khodadad* (*Linnaeus University*);

52 Generating of $\mathbf{2} \times \mathbf{1}$ Outputs for Cylindrical Vector Beams
Jingheng Chen (*Feng Chia University*); *Wei-Xuan Wu* (*Feng Chia University*); *Chien-Yuan Han* (*National United University*); *Kun-Huang Chen* (*Feng Chia University*); *Chien-Hung Yeh* (*Feng Chia University*);

53 Design of a Novel and Compact LTE/WWAN Antenna for Mobile Phone Applications
Ming Yang (*Anhui University*); *Yufa Sun* (*Anhui University*); *Zuming Li* (*Anhui University*);

54 Inorganic Perovskite $CsPbBr_{\mathbf{3}-\boldsymbol{x}}I_{\boldsymbol{x}}$ Quantum Dots: Enhancing Optical Stability
Yun-Hyuk Ko (*Hannam University*); *Sinil Choi* (*Hannam University*); *Prem Prabhakaran* (*Hannam University*); *Jea-Gun Park* (*Hanyang University*); *Kwang-Sup Lee* (*Hannam University*);

55 Improving the Response of THz Metamaterials Biosensor Using Gold Nanoparticles
Chin-Wei Lin (*National Taiwan University*); *Tsung-Hao Chang* (*National Chung Hsing University*); *Zu-Yin Deng* (*National Chung Hsing University*); *Kuen-Lin Chen* (*National Chung Hsing University*); *Chiu-Hsien Wu* (*National Chung Hsing University*); *Li-Min Wang* (*National Taiwan University*);

56 Metamaterial Inspried Long Read Range UHF RFID Tag Antenna
Kewen Pan (*University of Manchester*); *Ting Leng* (*University of Manchester*); *Xinyao Zhou* (*University of Manchester*); *Habiba Hafdallah-Ouslimani* (*Universite Paris Ouest Nanterre La Defense*); *Zhirun Hu* (*University of Manchester*);

57 A Practical Application of Using a Microwave Technique to Determine the Blood Glucose Level
Ayodunni Ayodele Oloyo (*The University of Manchester*); *Zhirun Hu* (*University of Manchester*);

58 Super-Resolution in Miniature Spectrometer by Combination of Hadamard Transform and Sub-pixel Reconstruction Technology
Mingbo Chi (*Changchun Institute of Optics, Fine Mechanics and Physics, Chinese Academy of Sciences*); *Yihui Wu* (*Changchun Institute of Optics, Fine Mechanics and Physics, Chinese Academy of Sciences*);

	WEDNESDAY AM 8:30 August 1	WEDNESDAY PM 13:00 August 1	THURSDAY AM 8:30 August 2	THURSDAY PM 13:00 August 2		
ROOM T1	1A1 - Remote Sensing for Hydrological Applications 1	1P1 - Remote Sensing of Soil Moisture	2A1 - Remote Sensing for Hydrological Applications 2	2P1 - Innovative Microwave Remote Sensing		
ROOM T2	1A2 - Inverse Scattering, Imaging, and Remote Sensing 1	1P2 - Inverse Scattering, Imaging, and Remote Sensing 2	2A2 - Inverse Scattering, Imaging, and Remote Sensing 3	2P2 - Light Scattering and Radiative Transfer: Basic Research and Applications 1		
ROOM T3	1A3 - Analytical Methods in Propagation, Scattering and Guiding of Waves	1P3 - Advances in Integral Equation Methods for Electromagnetic Problems	2A3 - Multiscale and Multiphysics Computation and Applications 1	2P3a - Multiscale and Multiphysics Computation and Applications 2	2P3b - Fast and Efficient Algorithms of CEM	
ROOM T4	1A4 - Advanced Computational Methods for Nano-optical Applications	1P4 - Computational Simulations and Techniques in Electromagnetics	2A4 - Design and Simulation of Electromagnetic and Optical Devices 1	2P4 - Design and Simulation of Electromagnetic and Optical Devices 2		
ROOM T5	1A5 - Radar Cross Section	1P5 - Education for Electromagnetics	2A5 - Antenna Measurement and Electromagnetic Field Application Using Photonic Technique	2P5a - Leading Design Techniques for Widebnd, Miniaturized, and CP Antenna	2P5b - Recent Progress in Antenna Analysis and Design	2P5c - Evaluation Techniques of Substrate Materials
ROOM T6	1A6 - Parabolic Equation and Related Methods in Diffraction Theory	1P6 - Computational Electromagnetics in Exposure Safety and Medical Application	2A6 - Biomedical Imaging and Sensing Involving both Light and Ultrasound 1	2P6 - Biomedical Imaging and Sensing Involving both Light and Ultrasound 2		
ROOM T7	1A7 - Recent Approaches to Periodic Structures 1	1P7 - Recent Approaches to Periodic Structures 2	2A7 - Advances in Metasurfaces 1	2P7a - Recent Approaches to Periodic Structures 3	2P7b - Wave Scattering from Random Surfaces and Periodic Structures	
ROOM T8	1A8 - Advanced Holography and Illusionary Effects by Metasurfaces, Metamaterials and Plasmonic Structures 1	1P8 - Advanced Holography and Illusionary Effects by Metasurfaces, Metamaterials and Plasmonic Structures 2	2A8 - Theory and Applications of Anisotropic and Bianisotropic Metamaterials 1	2P8a - Homogenization and Effective Medium Theories for Artificial Materials	2P8b - Metamaterials and Transformation Optics	
ROOM A1	1A9 - Novel Photonic Materials for Advanced Applications 1	1P9 - Novel Photonic Materials for Advanced Applications 2	2A9 - Novel Photonic Materials for Advanced Applications 3	2P9a - Novel Photonic Materials for Advanced Applications 4	2P9b - Short Distance Communication for Next Generation Access Networks	

	WEDNESDAY AM 8:30 August 1	WEDNESDAY PM 13:00 August 1	THURSDAY AM 8:30 August 2	THURSDAY PM 13:00 August 2
ROOM A2	1A10 - Enabling Solutions of Nano-photonics 1	1P10 - Enabling Solutions of Nano-photonics 2	2A10 - Optoelectronic Devices and Integration	2P10 - Advanced Nano/Quantum Photonic Technologies 1
ROOM A3	1A11 - 3D Integrated Photonics	1P11 - Fiber Gratings and Optical Sensors	2A11 - Mini-symposium on Microwave Photonics 1	2P11 - Mini-symposium on Microwave Photonics 2
ROOM A4	1A12 - Integrated and Fiber-based Photonic Circuits and Devices	1P12 - Ultra-high Capacity Optical Communication	2A12 - Advanced Optofluidics: Photonic Systems for Fluids and Life Science 1	2P12a - Advanced Optofluidics: Photonic Systems for Fluids and Life Science 2 / 2P12b - Advanced Nanomaterials and Nanostructures for Optical-to-Electrical Energy Conversion
ROOM A5	1A13 - Optical Tweezers and Applications	1P13 - Silicon Lasers and Integrated Silicon Photonics	2A13 - Extended/Unconventional Electromagnetic Theory, EHD/EMHD, and Electro-biology	2P13 - Advanced Optical Sensing and Imaging for Label-free Biodetection
ROOM A6	1A14 - Integrated Chip-scale Photonic Signal Processing	1P14 - Photonics and Optoelectronics Integration for Terahertz Processing	2A14 - Oral Presentations for Best Student Paper Awards --- CEM, EMC, Scattering & EM Theory	2P14 - Topology and PT Symmetry Based Optical Devices
ROOM A7	1A15 - Future Wireless Communication Systems for Railways	1P15 - Advances in the Electromagnetic Modelling of Complex, Heterogeneous and Fractal Structures	2A15 - Oral Presentations for Best Student Paper Awards --- Metamaterials, Plasmonics and Complex Media	2P15a - Photonic Microstructures/Nanostructures and Their Applications / 2P15b - Visualization of Electromagnetic Fields and Waves
ROOM A8	1A16 - Waves Propagation and Scattering in Random Media	1P16 - Noninvasive Examination Techniques in Industry and Biomedicine	2A16 - Oral Presentations for Best Student Paper Awards --- Optics and Photonics	2P16 - Recent Diagnostic and Therapeutic Applications of Microwaves
ROOM A9	1A17 - Guided-mode-resonance Devices and Applications 1	1P17a - Guided-mode-resonance Devices and Applications 2 / 1P17b - Interaction of Electromagnetic Wave with Complex Media	2A17 - Oral Presentations for Best Student Paper Awards --- Antennas and Microwave Technologies	2P17 - Kohei Hongo Memorial Session
ROOM A10	1A18 - Application of EM Field in Medical Diagnostics and Therapy	1P18 - Soft Magnetic Wires and Giant Magnetoimpedance Effect for High Sensitive Magnetic Sensors and Non-destructive Control	2A18 - Oral Presentations for Best Student Paper Awards --- Remote Sensing, Inverse Problems, Imaging, Radar and Sensing	2P18a - Biological Effects of EM Fields / 2P18b - Light Manipulation and Micro-/Nano-structured Optoelectronic Devices 1
ROOM Foyer			2A0 - Poster Session 1	2P0 - Poster Session 2

	FRIDAY AM 8:30 August 3	FRIDAY PM 13:00 August 3		SATURDAY AM 8:30 August 4	SATURDAY PM 13:00 August 4	
ROOM T1	3A1 - Advances in Quantitative Land Remote Sensing	3P1a - Microwave Remote Sensing of Ocean	3P1b - Inverse Scattering 1	4A1 - Inverse Scattering 2	4P1a - Active and Passive Remote Sensing, SAR & GPR	4P1b - Electromagnetic Modeling and Inversion and Applications
ROOM T2	3A2 - Microwave Scattering Modelling and Remote Sensing Theory	3P2a - SAR Imaging and Applications	3P2b - Light Scattering and Radiative Transfer: Basic Research and Applications 2	4A2 - Subsurface Sensing and Imaging	4P2a - Advances in PolSAR/PolInSAR Analysis and Applications	4P2b - Theoretical and Experimental Studies Related to GPR
ROOM T3	3A3 - Advanced Mathematical and Computational Methods in EM Theory and Their Applications 1	3P3a - Advanced Mathematical and Computational Methods in EM Theory and Their Applications 2	3P3b - Advanced Numerical Techniques for Solving EM Problems	4A3 - Novel Mathematical Methods in Electromagnetics 1	4P3a - Novel Mathematical Methods in Electromagnetics 2	4P3b - Computational Electromagnetics, Hybrid Methods
ROOM T4	3A4 - Modeling, Numerical Simulation and Theory in Optics and Photonics 1	3P4a - Modeling, Numerical Simulation and Theory in Optics and Photonics 2	3P4b - Computational Techniques in Electromagnetics and Applications	4A4 - Electromagnetic Simulation and Modeling Methods for Metamaterials and Plasmonics	4P4a - Advances of Numerical Methods in Computational Electromagnetics	4P4b - Fast Methods in Electromagnetic Numerical Simulation
ROOM T5	3A5 - Resonators, Filters, Transmission Lines and Waveguide	3P5 - Advanced Antenna and RF Circuits Design		4A5 - MIMO Antenna and MIMO array	4P5 - Reconfigurable Antenna, Microstrip Antenna and Array	
ROOM T6	3A6 - Analytical and Numerical Treatment in Electromagnetics and Its Application	3P6a - Radar Cross Section and Inverse Problems in Electromagnetics	3P6b - Terahertz Devices, Components, and Systems for Practical Applications	4A6 - Microwave Photonics, THz Technology	4P6a - Inverse Problems in Microwaves and Optics	4P6b - Radar Imaging, and Radar Signal Processing
ROOM T7	3A7 - Advances in Metasurfaces 2	3P7 - Novel Materials, Designs and Applications for Absorption of Electromagnetic Wave		4A7 - Metasurfaces and Metamaterials for Antenna Applications 1	4P7a - Metasurfaces and Metamaterials for Antenna Applications 2	4P7b - Recent Trends in Acoustic and Microwave Metamaterials
ROOM T8	3A8 - Theory and Applications of Anisotropic and Bianisotropic Metamaterials 2	3P8 - Recent Advances of Metamaterials for Novel Electromagnetic and Photonic Devices		4A8 - Quantum Optics with Topological Materials 1	4P8 - Casimir Effect and Heat Transfer	
ROOM A1	3A9 - Advances in Nanolasers 1	3P9 - Advances in Nanolasers 2		4A9 - Advances in Nanolasers 3	4P9a - Quantum Optics with Topological Materials 2	4P9b - Quantum Technologies

	FRIDAY AM 8:30 August 3	FRIDAY PM 13:00 August 3		SATURDAY AM 8:30 August 4	SATURDAY PM 13:00 August 4		
ROOM A2	3A10 - Advanced Nano/Quantum Photonic Technologies 2	3P10 - High-frequency Methods		4A10 - Meta-X: Beyond Metamaterials 1	4P10a - Meta-X: Beyond Metamaterials 2	4P10b - Measurement Technology of Electromagnetic Waves in Space Plasma	
ROOM A3	3A11 - New Advances in Light Scattering by Particles in the Micron and sub-Micron Regimes 1	3P11 - New Advances in Light Scattering by Particles in the Micron and Sub-Micron Regimes 2		4A11 - Advanced Photonic Technologies for Spectroscopic Applications: Devoted to Prof. Frank K. Tittel 1	4P11 - Advanced Photonic Technologies for Spectroscopic Applications: Devoted to Prof. Frank K. Tittel 2		
ROOM A4	3A12 - Photonic Nanostructures for Enhancing Light-matter Interaction 1	3P12a - Photonic Nanostructures for Enhancing Light-matter Interaction 2	3P12b - Emerging Techniques for Optical Communication and Sensing 2	4A12 - Recent Advances in Devices and System Technologies for Terahertz Wireless Communications 1	4P12a - Advances in Devices and System Technologies for THz Wireless Communications 2	4P12b - On Earth's EM Environment, Space Weather Phenomena, and Global Climate Variability	
ROOM A5	3A13 - Emerging Techniques for Optical Communication and Sensing 1	3P13 - Optical Wireless Technologies for Mobile Communications and Internet of Things		4A13 - Progresses in the Study of Topological Waves 1	4P13 - Progresses in the Study of Topological Waves 2		
ROOM A6	3A14 - Advanced Photonic Technologies for Energy Harvesting 1	3P14a - Advanced Photonic Technologies for Energy Harvesting 2	3P14b - Sensing Technique Enabled by Convergence of Radio and Optical Technologies	4A14 - Emerging Electromagnetic Functionalization of Graphene and 2D Materials for Terahertz Device Applications 1	4P14a - Emerging EM Functionalization of Graphene and 2D Materials	4P14b - Metamaterials and Plasmonics 2	4P14c - Researches of EM Field Problem in KOSEN
ROOM A7	3A15 - Light Manipulation, Propagation and Application 1	3P15a - Light Manipulation, Propagation and Application 2	3P15b - Plasmonics and Photonic Nanostructure Surfaces for Manipulation of Light	4A15 - Light Manipulation and Micro-/Nano-structured Optoelectronic Devices 2	4P15 - Wireless Power Transfer and Energy Harvesting		
ROOM A8	3A16 - Optical Metamaterials for Environment and Energy Application 1	3P16a - Optical Metamaterials for Environment and Energy Application 2	3P16b - Recent Advances on Photonic Metamaterials and Plasmonic Structures	4A16 - Metamaterials and Plasmonics 1	4P16a - Optical Nonreciprocity and Its Applications	4P16b - Laser, Optical Sensors and Environmental Monitoring	
ROOM A9	3A17 - Quantum Information Processing and Devices 1	3P17 - Quantum Information Processing and Devices 2		4A17 - Photonics-based Signal Source and Its Application 1	4P17a - Photonics-based Signal Source and Its Application 2	4P17b - EM and Optical Properties of Photonic Materials, Structures, and Crystals	
ROOM A10	3A18 - Photonics, Nanophotonics and Quantum Electrodynamics	3P18 - EMC Problems with Antennas & Wave Propagation		4A18 - RF and Wireless Communication, Multipath	4P18a - Novel Approach to Electromagentics	4P18b - Microwave and Millimeter Wave Circuits and Devices, CAD	
ROOM Foyer	3A0 - Poster Session 3	3P0 - Poster Session 4		4A0 - Poster Session 5	4P0 - Poster Session 6		

PIERS 2018 Toyama: Program at a Glance

Time	July 31 (Tuesday)	August 1 (Wednesday)	August 2 (Thursday)		August 3 (Friday)		August 4 (Saturday)	
08:30 - 08:50		8:30-10:40 Oral Session 1	8:30-10:40 Oral Session 3 BSPA Session (SC1-5)	8:30-11:30 Poster Session 1	8:30-10:40 Oral Session 6	8:30-11:30 Poster Session 3	8:30-10:40 Oral Session 9	8:30-11:30 Poster Session 5
08:50 - 09:10								
09:10 - 09:30								
09:30 - 09:50								
09:50 - 10:10								
10:10 - 10:40								
10:40 - 11:00		10:40-11:00 Coffee Break	10:40-11:00 Coffee Break / Selection of BSPA Winners		10:40-11:00 Coffee Break		10:40-11:00 Coffee Break	
11:00 - 12:00		11:00-12:00 General Lecture 1	11:00-12:00 General Lecture 2		11:00-12:00 General Lecture 3		11:00-12:00 General Lecture 4	
12:00 - 13:00		12:00-13:00 Lunch	12:00-13:00 Lunch	12:15-13:45 PIERS Business Lunch Meeting (members only)	12:00-13:00 Lunch		12:00-13:00 Lunch	
13:00 - 13:20	13:30-17:45 Pre-Conference Workshop	13:00-15:40 Oral Session 2	13:00-15:40 Oral Session 4	14:00-17:00 Poster Session 2	13:00-15:40 Oral Session 7	14:00-17:00 Poster Session 4	13:00-15:40 Oral Session 10	14:00-17:00 Poster Session 6
13:20 - 13:40								
13:40 - 14:00								
14:00 - 14:20								
14:20 - 14:40								
14:40 - 15:00								
15:00 - 15:20								
15:20 - 15:40								
15:40 - 16:00		15:40-16:00 Coffee Break	15:40-16:00 Coffee Break		15:40-16:00 Coffee Break		15:40-16:00 Coffee Break	
16:00 - 16:20		16:00-16:40 Opening Ceremony	16:00-18:40 Oral Session 5		16:00-18:40 Oral Session 8		16:00-18:40 Oral Session 11	
16:20 - 16:40								
16:40 - 17:00								
17:00 - 17:20								
17:20 - 17:40								
17:40 - 18:00		17:30-19:30 Symposium Reception						
18:00 - 18:20								
18:20 - 18:40								
18:40 - 19:00								
19:00 - 19:30			19:00-20:30 Young Scientists Reception (invited guests only)		19:00-21:30 Symposium Banquet (BPSA/YSA/CAMWA Award Ceremony)			
19:30 - 20:00								
20:00 - 20:30								
20:30 - 21:00								
21:00 - 21:30								
Registration Open Hours	12:30-18:30	8:00-18:00	8:00-18:00		8:00-18:00		8:00-17:00	

- Exhibition is scheduled from August 1 to 4.
- Toyama City Fireworks Festival: 19:45 - 20:30, August 1

BSPA: Best Student Paper Award
YSA: Young Scientist Award
CAMWA: Computers & Mathematics with Applications