

# PIERS 2017 St Petersburg

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Progress In Electromagnetics Research Symposium

Program

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May 22–25, 2017  
St Petersburg, RUSSIA

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## **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.

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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.

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## **Progress In Electromagnetics Research Symposium**

**May 22–25, 2017**

**St Petersburg, RUSSIA**

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## **SYMPOSIUM VENUE**

The 2017 Progress in Electromagnetics Research Symposium will be held in St Petersburg during May 22–25, 2017, in Park Inn by Radisson <Pribaltiyskaya> hotel (Address: 14 Korablestoiteley street, St Petersburg, Russia).

## **REGISTRATION**

The PIERS technical sessions will begin at 9:00 on Monday, May 22, 2017. You're encouraged to register during 10:00-19:00, Sunday, May 21, 2017, at the registration desk/room located in Park Inn by Radisson <Pribaltiyskaya>. Registration is also possible in Park Inn by Radisson <Pribaltiyskaya> from 08:00 to 18:00 during the Symposium, May 22–25, 2017.

The on-site registration fee is USD 680/RUB 40000, and the reduced registration fee for a student is USD 400/RUB 2-4000 (a valid student ID is required). Please be reminded that the on-site payments will be collected in Roubles. If you have pre-registered and paid, your name badge and symposium program will be ready for you to pick up at the registration desk 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 Sunday evening, May 21, 2017, 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 May 5.

### **Symposium Banquet**

On Wednesday evening, May 24, 2017, 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 70 or RUB 4000 per person. Please make reservation and pay by credit card (USD) in advance for the banquet by May 5.

## **PIERS ONLINE**

Information on PIERS 2017 St Petersburg and future PIERS is posted at [www.piers.org](http://www.piers.org).



## GUIDELINE FOR PRESENTERS

### Oral Presentations

- **Load and TEST presentation files in advance:**

Presenting authors should upload and test presentation files in the PIERS OFFICE 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 rooms.

- **Presentation files format:**

PDFs and Powerpoint files are recommended. Movies or animations in MPEG, Windows Media, etc, should be tested in PIERS computer in PIERS OFFICE no later than half day before the session. 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:**

A session Chair should 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 talk 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 indicate time slots of their presence on the panel and be present for interactive questions within the posted time slots. Each poster can be posted at 9:00–13:00 and 14:00–19:00, and all presenters are suggested to be present at least during 11:00–11:20 and 16:00–16:20.

One panel (about 76(W) x 118(H) cm) will be available for each poster.

All presenters are required to put their papers on the poster panels one hour before their sessions start and remove them at the end of their sessions.

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- ☐ JORCEP (Sino-Swedish Joint Research Center of Photonics)
- ☐ The Electromagnetics Academy at Zhejiang University, China
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## MAP OF CONFERENCE SITE



1st Floor

Plan of Halls in Pribaltiyskaya

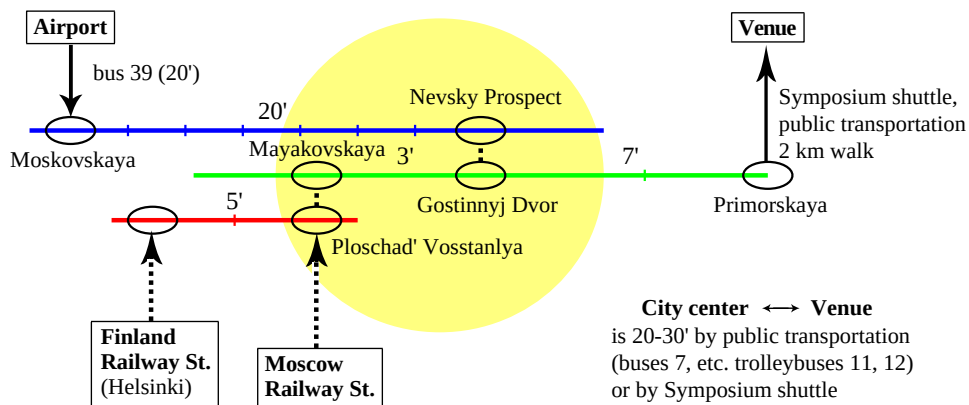
## ARRIVAL GUIDE

**By air:** The airport is located 23 km to the south of the city center and is connected to St Petersburg by bus number 39 and Minivan Taxi number K39. See local transportation scheme below.

Alternatively you can take a taxi at the airport, which should cost about 1000 rubles to the Symposium venue. You can pay either in cash to the driver or at the Taxi counter in the airport with your credit card.

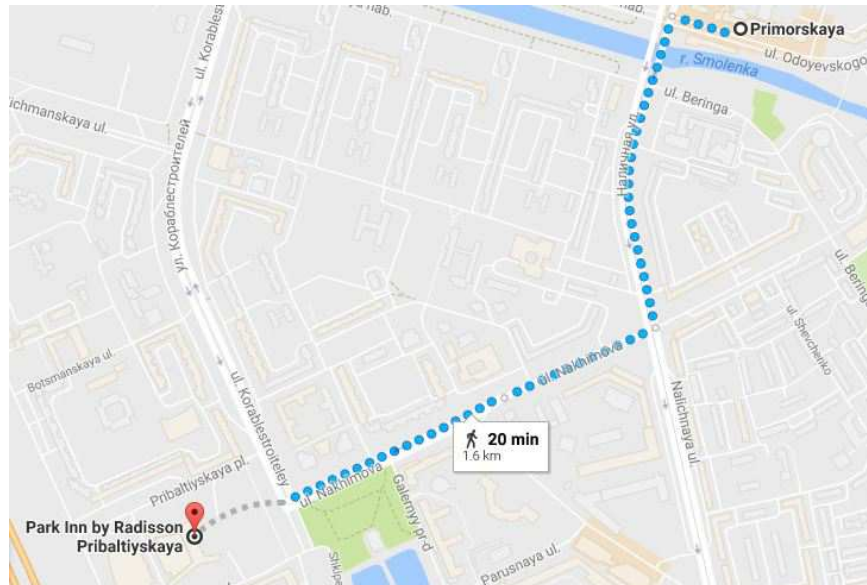
**By train:** Trains from Moscow (4 hours by fast train) and many other cities of Russia arrive to **Moscow** railway station, trains from Helsinki (3.5 hours by fast train) arrive to **Finland** railway station, where from it is easy to reach the symposium venue. See local transportation scheme.

**By Ferry:** From ferry station take bus number 152 or trolleybus 11. It takes about 10 mins and costs 40 rubles to reach the symposium venue.



Local Transportation Scheme

The path from the metro station “Primorskaya” to the hotel Park Inn by Radisson <Pribaltiyskaya> is shown. It is 1.6 km.



## GENERAL INFORMATION

### LANGUAGE

The official language for the Symposium is English.

### CURRENCY AND CREDIT CARDS

The local currency is the Russian Rouble (RUB) and the exchange rate is 1 USD for about 56–57 Roubles. Credit cards and cash are acceptable for payments. International credit cards are acceptable in almost all shops, restaurants etc..

### TAX AND TIP

All the shopping is free of tax. In Russia tips are not necessary but it is possible to tip a waiter/waitress or a taxi driver and other persons who provides regular service. Bargaining is necessary on buying merchandise especially from markets.

### TAXI

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

### BUSINESS OPENING HOURS

- **Post Office**

Opening hours: usually 8:00 – 20:00, from Monday to Friday.

May vary dependently on the office. There is 24 h service in the central post office.

- **Bank**

Opening hours: depend on the bank, usually 10:00 – 18:00, from Monday to Friday.

- **Store**

Opening hours: usually 9:00 – 21:00, but the large shopping center serves till 22:00, from Monday to Sunday. There are 24 h service shops also.

- **Public Transportation**

Operating hours: generally 5:30 – 24:00

Price: 40 RUB payable in cash inside the bus, trolleybus or tram; metro 45 RUB. Prices do not depend on the distance.

### ELECTRICITY

In Russia, the standard outlets provide AC of 220 V/50 Hz.

# PIERS 2017 ST PETERSBURG TECHNICAL PROGRAM

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## Session 1A1

### SC3: Novel Optical Fibers and Fiber-based Devices

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**Monday AM, May 22, 2017**

**Room G5**

Organized by Xinyong Dong

Chaired by Hongpu Li, Peiguang Yan

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| <p>09:20 Real-time Characterization of the Phase-shift Formed in a Helical Long-period Fiber Grating<br/> <i>Peng Wang (Shizuoka University); Ramanathan Subramanian (Shizuoka University); Chengliang Zhu (Shizuoka University); Hua Zhao (Nanjing Normal University); Hongpu Li (Shizuoka University);</i></p> <p>09:40 Optical Comb Characterization of an All-fiber Mode-locked Erbium-doped Ring Laser with a Highly-nonlinear Resonator<br/> <i>Dmitriy A. Dvoretzkiy (Bauman Moscow State Technical University); Stanislav Grigorievich Sazonkin (Bauman Moscow State Technical University); I. O. Orekhov (Bauman Moscow State Technical University); I. S. Kudelin (Bauman Moscow State Technical University); A. B. Pnev (Bauman Moscow State Technical University); V. E. Karasik (Bauman Moscow State Technical University); A. A. Krylov (Fiber Optics Research Center of the RAS); L. K. Denisov (Bauman Moscow State Technical University);</i></p> <p>10:00 Atomically Transition Metal Dichalcogenides Heterostructures for Ultrafast Photonics<br/> <i>Hao Chen (Shenzhen University); Irene Ling Li (Shenzhen University); Peiguang Yan (Shenzhen University);</i></p> | <p>10:20 Design of Optical Microresonators for Fiber-optic Sensor Networks Transparent in Mid-IR<br/> <i>Elena A. Romanova (Saratov NG Chernyshevskii State University); Daniil Sergeevich Zhivotkov (Saratov State University); Davor Ristic (Institut Ruder Boskovic); Mile Ivanda (Ruder Boskovic Institute); Vladimir S. Shiryayev (Institute of Chemistry of High Purity Substances of the RAS);</i></p> <p>11:00 <b>Coffee Break</b></p> <p>11:20 Point-by-point Inscription of Phase-shifted Fiber Bragg Gratings by Femtosecond IR Radiation in Passive and Active Rare-earth Doped Optical Fibers<br/> <i>Alexandr V. Dostovalov (Novosibirsk National Research State University); A. A. Wolf (Institute of Automation and Electroetry SB RAS); A. V. Parygin (Institute of Automation and Electroetry, SB, RAS); M. I. Skvortsov (Institute of Automation and Electroetry, SB, RAS); K. S. Raspopin (Institute of Automation and Electrometry SB RAS); S. A. Babin (Institute of Automation and Electroetry, SB, RAS);</i></p> <p>11:40 Simulation of z-dependent Dispersion Coefficients in Tapered Photonic Crystal Fibers<br/> <i>Hassan Pakarzadeh (Shiraz University of Technology); Omid Nasiri (Shiraz University of Technology);</i></p> <p>12:00 The Mechanism of Light Localization in Hollow Core Negative Curvature Fibers<br/> <i>Andrey D. Pryamikov (Fiber Optics Research Center of the Russian Academy of Sciences); Grigory K. Alagashev (Fiber Optics Research Center of the Russian Academy of Sciences); Alexander S. Biriukov (Fiber Optics Research Center of Russian Academy of Sciences);</i></p> <p>12:20 Hybrid Optofluidics and Three-dimensional Manipulation Based on Hybrid Photothermal Waveguides<br/> <i>Jiapeng Zheng (South China Normal University); Xiaobo Xing (South China Normal University); Jianxin Yang (South China Normal University); Kezhang Shi (South China Normal University); Sailing He (Zhejiang University);</i></p> |
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**Session 1A2****Electromagnetic Signal Processing, Wavelets,  
Neural Network****Monday AM, May 22, 2017****Room G6**

Organized by Zbigniew Szadkowski

Chaired by Zbigniew Szadkowski

- 09:00 Reduced-complexity ML Method for Monostatic MIMO Radar  
*Jun Tan (University of Electronic Science and Technology of China); Zai-Ping Nie (University of Electronic Science and Technology of China); Ding-bang Wen (University of Electronic Science and Technology of China); Zijian Liu (University of Electronic Science and Technology of China);*
- 09:20 Analog Optical Computing Using Resonant Nanophotonic Structures  
*Dmitry Alexandrovich Bykov (Image Processing Systems Institute of RAS and Samara State Aerospace University); Leonid Leonidovich Doskolovich (Image Processing Systems Institute of the Russian Academy of Sciences); V. A. Soifer (Image Processing Systems Institute of the Russian Academy of Sciences);*
- 09:40 An Improved Algorithm for LFM Signal Frequency Modulation Slope Estimation  
*Fuxin Qu (Harbin Engineering University); Zhiyu Qu (Harbin Engineering University); Jiawei Wang (Harbin Engineering University);*
- 10:00 Performance of Double Threshold Energy Detection in Cooperative-cognitive Network by Using AF Relaying Scheme over Rician Fading Channel  
*Muhammad Zeeshan (Beijing Institute of Technology); Saeed Ur Rahman (Nanjing University of Aeronautics and Astronautics (NUAA)); Asad Khan (Southeast University); Zhongjian Dai (Beijing Institute of Technology);*
- 10:20 Cooperative-cognitive Radio Networks: Performance Analysis of Energy Detection  
*Muhammad Zeeshan (Beijing Institute of Technology); Asad Khan (Southeast University); Zhongjian Dai (Beijing Institute of Technology);*
- 11:00 **Coffee Break**

- 11:20 A Classification Technique for Condensed Matter Phases Using a Combination of PCA and SVM  
*Waleed Kamal Badawi (Arab Academy for Science and Technology (AASTMT)); Ziad M. Osman (Arab Academy for Science and Technology (AASTMT)); Maha A. Sharkas (Arab Academy for Science and Technology (AASTMT)); Mohamed E. Tamazin (Arab Academy for Science, Technology and Maritime Transport Alexandria);*
- 11:40 RFI Filtering in AERA Radio-detection of Cosmic Rays  
*Zbigniew Szadkowski (University of Lodz);*
- 12:00 Optimization of the Neural Network Trigger for a Detection of Cosmic Rays in Surface Detectors of the Pierre Auger Observatory  
*Zbigniew Szadkowski (University of Lodz); Krzysztof Pytel (University of Lodz); Dariusz Glas (University of Lodz); M. Wiedenski (University of Lodz);*
- 12:20 Two-dimensional Multiplier-less Wavelet Trigger for a Radio-detection of Cosmic Rays  
*Zbigniew Szadkowski (University of Lodz); Anna Szadkowska (Lodz University of Technology);*

**Session 1A3****Nonlinear and Inverse Problems in  
Electromagnetics****Monday AM, May 22, 2017****Room G7**

Organized by Yury G. Smirnov, Larisa Beilina

Chaired by Yury G. Smirnov

- 09:00 The Azimuthal Symmetric Hybrid Waves in Nonlinear Cylindrical Waveguide  
*Eugene Yu. Smolkin (Penza State University);*
- 09:20 Control Approach in Inverse Problems for Time-harmonic Maxwell Equations under Mixed Boundary Conditions  
*Gennady V. Alekseev (Institute of Applied Mathematics FEB RAS); Roman V. Brizitskii (Institute of Applied Mathematics FEB RAS); Yuliya E. Spivak (Far Eastern Federal University);*
- 09:40 Inverse Problem of Reconstruction of Inhomogeneous Body Parameters  
*R. O. Evstigneev (Penza State University); Mikhail Yu. Medvedik (Penza State University); Yury G. Smirnov (Penza State University);*

- 10:00 Diffraction of TE Polarised Electromagnetic Waves by a Nonlinear Layer  
*Anna E. Demchenko (Penza State University); Dmitry V. Valovik (Penza State University);*
- 10:20 On Well-posed Formulation of Inverse Scattering Problem in Focusing Media  
*Vladimir Okhmatovski (University of Manitoba);*
- 11:00 **Coffee Break**
- 11:20 Microwave Imaging with Contrast Source Inversion Method in the Presence of Focusing Media  
*Anton Menshov (University of Manitoba); Vladimir Okhmatovski (University of Manitoba);*
- 11:40 Reliability-based Low Torque Ripple Design of Permanent Magnet Machine  
*Piotr A. Putek (Bergische Universitat Wuppertal); E. J. W. Ter Maten (Bergische Universitat Wuppertal); M. Gunther (Bergische Universitat Wuppertal);*
- 12:00 Electromagnetic Wave Propagation in Nonlinear Media with Saturation  
*Valeria Yu. Kurseeva (Penza State University); Dmitry V. Valovik (Penza State University);*
- 10:00 An Analysis of Eigenmodes Propagating on a Holey Fiber with the Multipole Method and the Sakurai-Sugiura Method  
*Yasuo Tsushima (Muroran Institute of Technology); Shingo Sato (Muroran Institute of Technology); Koji Hasegawa (Muroran Institute of Technology);*
- 10:20 Modeling of Excitation Source for Time-domain EM Solvers  
*Ishfaq Hussain (Nanjing University of Aeronautics and Astronautics); Huiping Li (Henan University); Yi Wang (Nanjing University of Aeronautics and Astronautics); Qunsheng Cao (Nanjing University of Aeronautics and Astronautics);*
- 10:40 Modeling of Light-emitting Diode with Mesh-like Top Electrode: Finite-radius Wire Approximation against Mesh Strips with Rectangular Crosssection  
*Irina Khmyrova (The University of Aizu); Y. Nishidate (University of Aizu); Julia Kholopova (IMT RAS); E. Polushkin (IMT RAS); V. Zemlyakov (NRUET); S. Shapoval (IMT RAS);*
- 11:00 **Coffee Break**
- 11:20 Modeling of Structures Using Adaptive Mesh in DGTD Method for EM Solver  
*Ishfaq Hussain (Nanjing University of Aeronautics and Astronautics); Huiping Li (Henan University); Yi Wang (Nanjing University of Aeronautics and Astronautics); Qunsheng Cao (Nanjing University of Aeronautics and Astronautics);*
- 11:40 Numerical Solution of 3D Problems of Electromagnetic Wave Diffraction on a System of Piecewise Homogeneous Objects by the Method of Hypersingular Boundary Integral Equations  
*Aleksey Viktorovich Setukha (Air Force Academy);*
- 12:00 Numerical Green's Function Based Augmented Electric Field Integral Equation for Inhomogeneous Media  
*H. U. Gan (University of Illinois at Urbana-Champaign); Q. Dai (University of Illinois at Urbana-Champaign); T. Xia (University of Illinois at Urbana-Champaign); Y. Li (University of Hong Kong); Weng Cho Chew (University of Illinois);*
- 12:20 Analysis of the Multipactor Effect by Means of the 3D BI-RME Method  
*Angel-Antonio San-Blas (University Miguel Hernandez of Elche); Benito Gimeno Martinez (Universidad de Valencia); Vicente E. Boria (Universidad Politecnica de Valencia); Enrique Bronchalo (Universidad Miguel Hernandez de Elche);*

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**Session 1A4**  
**Computational Electromagnetics 1**

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**Monday AM, May 22, 2017**

**Room G8**

Organized by Alexander B. Samokhin

Chaired by Alexander B. Samokhin

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- 09:00 Analysis of Radiated Fields of Moving Dipole Source with Lorentz-FDTD  
*Kuisong Zheng (Northwestern Polytechnical University); Xiangpeng Liu (Northwestern Polytechnical University); Zongmin Mu (Northwestern Polytechnical University); Gao Wei (Northwestern Polytechnical University);*
- 09:20 Methods and Fast Algorithms for the Solution of Volume Singular Integral Equations  
*Alexander B. Samokhin (Moscow State Institute of Radio Engineering, Electronics and Automatics); Anna S. Samokhina (Institute of Control Sciences);*
- 09:40 Design of Reconfigurable Antenna Using RF MEMS Switch for Cognitive Radio Applications  
*Ahmed A. Ibrahim (El-Minia University); Anatoliy Batmanov (University of Magdeburg); Edmund P. Burt (University of Magdeburg);*



- 12:40 Strip-line StF4 Antenna Excited by Step-like Pulsed Voltage as Radiator of Calibrated UWB Electromagnetic Delta-like Impulses  
*Vladimir M. Fedorov (Institute for High Energy Densities of JIHT of RAS); Vasily Ye. Ostashev (Joint Institute for High Temperatures of RAS); Vladimir P. Tarakanov (Joint Institute for High Temperatures of Russian Academy of Sciences (JIHT of RAS)); Aleksander V. Ul'yanov (Joint Institute for High Temperatures of Russian Academy of Sciences (JIHT of RAS));*

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### Session 1A5a

#### SC3&2: Nanostructured Photoconversion Technologies and Devices

Monday AM, May 22, 2017

Room G9

Organized by Xiaofeng Li, Liang Li

Chaired by Xiaofeng Li, Liang Li

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- 09:00 Unconventional Thermal Engineering of Photoconversion Nanomaterials  
 Invited *Hongqiang Wang (Northwestern Polytechnical University);*
- 09:20 Applications of Atomic Layer Deposition in Energy Devices  
 Invited *Liang Li (Soochow University);*
- 09:40 Conversion from Chaotic Dynamics of Semiconductor Laser to Random Numbers  
 Invited *Anbang Wang (Taiyuan University of Technology); Longsheng Wang (Ministry of Education and Shanxi Province); Yuncai Wang (Ministry of Education and Shanxi Province);*
- 10:00 Opto-electro-thermal Simulation of Photovoltaic Devices  
 Invited *Xiaofeng Li (Soochow University); Aixue Shang (Soochow University);*
- 10:20 Photoresponse in Hybrid Single Walled Carbon Nanotube — Quantum Dot Phototransistors  
*Simas Rackauskas (CCS — UNICAMP); Yulia A. Gromova (ITMO University); Tatiana Rackauskas (CCS — UNICAMP); Andrei V. Alaferdov (CCS — UNICAMP); Raluca Savu (CCS — UNICAMP); Esko I. Kauppinen (Aalto University); Albert G. Nasibulin (Aalto University); Stanislav A. Moshkalev (UNICAMP);*
- 11:00 **Coffee Break**

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### Session 1A5b

#### Lasers and Applications in Information Technology

Monday AM, May 22, 2017

Room G9

Organized by Oleg E. Nanii, Alexander P. Smirnov

Chaired by Oleg E. Nanii

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- 11:20 Second-harmonic-generation of Continuous-wave Optical Vortices in Telecommunication Wavelength  
*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); Naoukatu Yamamoto (National Institute of Information and Communications Technology); Shigeru Yamaguchi (Tokai University); Iwao Hosako (National Institute of Information and Communications Technology);*
- 11:40 A Mechanism of QML Lasing in Solid-state Laser with an Acousto-optic Travelling Wave Modulator  
*Oleg E. Nanii (M. V. Lomonosov Moscow State University); A. I. Fedoseev (M. V. Lomonosov Moscow State University); A. I. Odintsov (M. V. Lomonosov Moscow State University); Aleksander P. Smirnov (M. V. Lomonosov Moscow State University);*
- 12:00 Temporal Stability of a Multi-wavelength Fiber Laser  
*Oleg E. Nanii (M. V. Lomonosov Moscow State University); A. I. Kuzmenkov (Science-Technology Center T8); S. N. Lukinykh (M. V. Lomonosov Moscow State University); A. I. Fedoseev (M. V. Lomonosov Moscow State University); Aleksander P. Smirnov (M. V. Lomonosov Moscow State University); V. N. Treshikov (Science-Technology Center T8);*

- 12:20 High-power Narrowband Raman Fiber Laser Based on Random FBG  
*M. I. Skvortsov (Institute of Automation and Electrodynamics, SB, RAS); S. R. Abdullina (Institute of Automation and Electrodynamics SB RAS); Aleksandr A. Vlasov (Institute of Automation and Electrodynamics, SB, RAS); E. A. Zlobina (Institute of Automation and Electrodynamics, SB, RAS); Ivan A. Lobach (Institute of Automation and Electrodynamics, SB, RAS); V. S. Terentyev (Institute of Automation and Electrodynamics, SB, RAS); Sergey A. Babin (Institute of Automation and Electrodynamics SB RAS);*

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**Session 1A6**

**Theory and Methods of Digital Signal Processing in the Problems of Remote Sensing, Radar, and Radiometry 1**

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**Monday AM, May 22, 2017**

**Room G10**

Organized by Victor Filippovich Kravchenko, Boris Georgievich Kutuza

Chaired by Victor Filippovich Kravchenko, Boris Georgievich Kutuza

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- 09:00 Investigation of the Features of Long-term Global Atmospheric Circulation via Satellite Radiothermography  
*Dmitry M. Ermakov (Kotel'nikov Institute of Radioengineering and Electronics of RAS);*
- 09:20 Super-resolution SAR Imaging: Optimal Algorithm Synthesis and Simulation Results  
*Victor Filippovich Kravchenko (Kotel'nikov Institute of Radio Engineering and Electronics, Russian Academy of Sciences); Boris Georgievich Kutuza (Kotel'nikov Institute of Radio Engineering and Electronics, Russian Academy of Sciences); Valeriy K. Volosyuk (National Aerospace University Named after N. Ye. Zhukovsky ("Kharkov Aviation Institute")); Vladimir V. Pavlikov (National Aerospace University Named after N. Ye. Zhukovsky ("Kharkov Aviation Institute")); Simeon Sergiyovich Zhyla (National Aerospace University Named After N. Ye. Zhukovsky ("Kharkov Aviation Institute"));*
- 09:40 Multiantenna Radiometric Complex for High Resolution Imaging: Synthesis of Algorithm for Optimal UWB Signal Processing and Development of Functional Flow Block Diagram  
*Victor Filippovich Kravchenko (Kotel'nikov Institute of Radio Engineering and Electronics, Russian Academy of Sciences); Boris Georgievich Kutuza (Kotel'nikov Institute of Radio Engineering and Electronics, Russian Academy of Sciences); Valeriy K. Volosyuk (National Aerospace University); Vladimir V. Pavlikov (National Aerospace University); Kiem Nguyen Van (National Aerospace University Named after N. Ye. Zhukovsky ("Kharkov Aviation Institute"));*
- 10:00 Chopper Radiometer of New Type: Synthesis Algorithm and Development of Functional Flow Block Diagram  
*Victor Filippovich Kravchenko (Kotel'nikov Institute of Radio Engineering and Electronics, Russian Academy of Sciences); Boris Georgievich Kutuza (Kotel'nikov Institute of Radio Engineering and Electronics, Russian Academy of Sciences); Valeriy K. Volosyuk (National Aerospace University Named after N. Ye. Zhukovsky ("Kharkov Aviation Institute")); Vladimir V. Pavlikov (National Aerospace University Named after N. Ye. Zhukovsky ("Kharkov Aviation Institute")); Simeon S. Zhyla (National Aerospace University Named after N. Ye. Zhukovsky ("Kharkov Aviation Institute"));*
- 10:20 Digital Beamforming Based on FPGA for Phased Array Radar  
*Wenjing Shang (Harbin Engineering University); Zheng Dou (Harbin Engineering University); Wei Xue (Harbin Engineering University); Yingsong Li (Harbin Engineering University);*
- 11:00 **Coffee Break**
- 11:20 SAR Polarimetry Techniques in Remote Sensing of Arctic Region  
*Alexander Zakharov (Kotel'nikov IRE RAS); Ludmila Zakharova (Kotel'nikov IRE RAS);*
- 11:40 Development and Study of Demodulators for Frequency-hopping Spread Spectrum Signals  
*D. I. Kaplun (SPbETU "LETI"); Dmitry M. Klionskiy (Saint Petersburg Electrotechnical University "LETI"); V. V. Gulvanskiy (SPbETU "LETI"); D. V. Bogaevskiy (SPbETU "LETI"); M. S. Kupriyanov (Saint Petersburg Electrotechnical University "LETI");*

- 12:00 Data Representation in the Modular Code  
*A. V. Veligosha (Military Academy after Peter the Great); N. Yu. Bratchenko (North Caucasus Federal University); D. I. Kaplun (SPbETU "LETI"); Dmitry M. Klionskiy (Saint Petersburg Electrotechnical University "LETI"); V. V. Gulvanskiy (SPbETU "LETI"); D. V. Bogaevskiy (SPbETU "LETI");*

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**Session 1A7a**

**CEM, Spectra, Time, and Frequency Domain Techniques**

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**Monday AM, May 22, 2017**

**Room B1**

Chaired by Erkan Afacan

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- 09:00 Finite Element Modeling of Thermal Noises in Whispering-gallery Mode Cavities  
*Nikita M. Kondratyev (Russian Quantum Center); M. L. Gorodetsky (Russian Quantum Center);*
- 09:20 High Order FDTD Computations Using Mesh Thickening  
*Zhanna O. Dombrovskaya (Lomonosov Moscow State University); Alexander Nikolaevich Bogolyubov (Lomonosov Moscow State University);*
- 09:40 A New Search Method for Costas Arrays by Using Difference Triangle Analysis  
*Erkan Afacan (Gazi University);*
- 10:00 Spectral Problem in a Generalized Theory of Electromagnetic Waves  
*G. G. Islamov (Udmurt State University); Aleksandr K. Tomilin (National Research Tomsk Polytechnic University);*
- 11:00 **Coffee Break**

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**Session 1A7b**

**Computational Cubism**

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**Monday AM, May 22, 2017**

**Room B1**

Organized by Athanasios G. Polimeridis, Jacob K. White

Chaired by Athanasios G. Polimeridis

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- 11:20 Volumetric Conductive Absorbers in Volume Integral Equation Formulations for Modeling Nanophotonic Structures  
*Alexandra A. Tambova (Skolkovo Institute of Science and Technology); Jacob K. White (Massachusetts Institute of Technology); Athanasios G. Polimeridis (Skolkovo Institute of Science and Technology);*

- 11:40 VoxHenry: FFT-Accelerated Inductance Extraction for Voxelized Geometries

*Abdulkadir C. Yucel (Massachusetts Institute of Technology); Ioannis P. Georgakis (Center for Computational Data-Intensive Science and Engineering); Athanasios G. Polimeridis (Skolkovo Institute of Science and Technology); Hakan Bagci (King Abdullah University of Science and Technology (KAUST)); Jacob K. White (Massachusetts Institute of Technology);*

- 12:00 Current-based Volume Integral Equation Solver with Piecewise Linear Basis Functions for Modelling Highly Inhomogeneous Objects

*Ioannis P. Georgakis (Center for Computational Data-Intensive Science and Engineering); Jacob K. White (Massachusetts Institute of Technology); Athanasios G. Polimeridis (Skolkovo Institute of Science and Technology);*

- 12:20 Computational Photonics with the Volume Integral Equation Method

*Samuel P. Groth (University of Reading); Alexandra A. Tambova (Skolkovo Institute of Science and Technology); Athanasios G. Polimeridis (Skolkovo Institute of Science and Technology); Jacob K. White (Massachusetts Institute of Technology);*

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**Session 1A8**

**FocusSession.SC1: Casimir Effect and Heat Transfer 1**

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**Monday AM, May 22, 2017**

**Room B5**

Organized by Mauro Antezza, Brahim Guizal

Chaired by Mauro Antezza, Brahim Guizal

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- 09:00 Negative Casimir Entropies for Nanoparticles and Invited Surfaces

*Kimball A. Milton (University of Oklahoma); Li Yang (Norwegian University of Science and Technology); Pushpa Kalauni (University of Oklahoma); Prachi Parashar (University of Oklahoma);*

- 09:20 Theoretical Prediction of Levitation Due to Casimir  
Invited Force in Dielectric Plane-parallel Systems  
*Victoria Estesó Carrizo (Consejo Superior de Investigaciones Científicas — University of Seville); Sol Carretero-Palacios (Consejo Superior de Investigaciones Científicas — University of Seville); Hernan Miguez Garcia (Spanish National Research Council);*
- 09:40 Global Consequences of a Local Casimir Force  
Invited  
*Vitaly B. Svetovoy (University of Groningen); George Palasantzas (University of Groningen);*
- 10:00 The Casimir Force in Experiments with Si Gratings  
Invited  
*Valery N. Marachevsky (Saint Petersburg State University); Alexandra D. Nelson (Saint Petersburg State University);*
- 10:20 Casimir Forces for Systems with Gratings  
Invited  
*Alexandra D. Nelson (Saint Petersburg State University);*
- 10:40 Logic Gates with Thermal Photons  
Invited  
*Philippe Ben-Abdallah (Universite Paris-Sud 11); Svend-Age Biehs (Carl von Ossietzky Universitat);*
- 11:00 **Coffee Break**
- 11:20 Non-equilibrium Heat Transfer and Casimir Interac-  
Invited tions in Arbitrary N-body Planar Systems  
*Ivan Latella (Universite Paris-Saclay); Riccardo Messina (Institut d'Optique, CNRS, Universite Paris-Sud 11); Svend-Age Biehs (Carl von Ossietzky Universitat); Mauro Antezza (Universite de Montpellier); Philippe Ben-Abdallah (Universite Paris-Sud 11);*
- 11:40 Nano Antenna Arrays for Tailored Infrared Thermal  
Invited Emission  
*Marco Centini (Universita di Roma, La Sapienza); Alessio Benedetti (Universita di Roma, La Sapienza); M. C. Larciprete (Sapienza Universita di Roma); Alessandro Belardini (Universita di Roma, La Sapienza); Roberto Li Voti (Sapienza University of Rome); M. Bertolotti (Universita di Roma, La Sapienza); Concita Sibilis (Universita di Roma, La Sapienza);*
- 12:00 Casimir-polder Potential for Atoms Driven by a Laser  
Invited Field  
*Sebastian Fuchs (Freiburg University); Robert Bennett (Freiburg University); Stefan Yoshi Buhmann (University of Freiburg);*

- 12:20 Casimir Effect and Heat Transfer for Non-reciprocal  
Invited Media  
*Stefan Yoshi Buhmann (University of Freiburg); S. Fuchs (University of Freiburg); F. Lindel (University of Freiburg); M. Antezza (Universite de Montpellier);*
- 12:40 Sphere-plate Heat Transfer: An Analytic Approach  
Invited  
*Robert Bennett (Albert-Ludwigs-Universitat Freiburg); Stefan Yoshi Buhmann (University of Freiburg);*
- 13:00 Fluctuational Electrodynamics for Nonlinear Materi-  
Invited als  
*Heino Soo (Universitat Stuttgart); Matthias Kruger (University of Stuttgart & Max Planck Institute for Intelligent Systems);*

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### Session 1A9

### New Trends in Antenna, Dynamic Networks and Communication Signal Processing 1

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Monday AM, May 22, 2017

### Room B3

Organized by Malay Ranjan Tripathy, Boris A. Lagovsky  
Chaired by Malay Ranjan Tripathy, Boris A. Lagovsky

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- 09:00 Superresolution in Signal Processing Using Smart Antenna  
*Boris A. Lagovsky (Moscow State Institute of Radio Engineering and Automation (Technical University));*
- 09:20 Shape Optimization of UWB Pulses  
*Boris A. Lagovsky (Moscow State Institute of Radio Engineering and Automation (Technical University)); A. G. Chikina (Moscow State Institute of Radio Engineering and Automation (Technical University));*
- 09:40 Backfire Helix Antennas for mm Precision of Satellite Positioning in Real Time  
*Dmitry V. Tatarnikov (Topcon Positioning Systems, Moscow Aviation Institute (Technical University)); Anton P. Stepanenko (Topcon Positioning Systems, Moscow Aviation Institute (Technical University)); Andrey V. Astakhov (Topcon Positioning Systems, Moscow Aviation Institute (Technical University));*

- 10:00 A S-shaped Millimeter Wave Antenna for UWB Applications  
*Shrutika Channa (Indian Institute of Technology Hyderabad); Lakhan Panwar (Indian Institute of Technology Hyderabad); Siva Rama Krishna Vanjari (Indian Institute of Technology Hyderabad); Mohammed Zafar Ali Khan (Indian Institute of Technology);*
- 10:20 Evaluation of the Influence of Directivity Factor of Directive Elements of Conformal Antenna Arrays on the Performances of Azimuth-elevation DOA Estimation  
*Yuri Nechaev (Voronezh State University); Ilia Peshkov (Elets State University);*
- 10:40 Wavelet-based Method for Nonlinear Inverse Scattering Problem Using Least Mean Square Estimation  
*Manisha Khulbe (Ambedkar Institute of Advance Communication Technology and Research); Malay Ranjan Tripathy (Amity University Uttar Pradesh); Harish Parthasarathy (University of Delhi);*
- 11:00 **Coffee Break**
- 11:20 Performance Analysis of Conductive Patch Materials for the Design and Fabrication of Microstrip Patch Antennas  
*Gurleen Kaur (Punjabi University); Amarveer Singh (Punjabi University); Divesh Mittal (Punjabi University); Prince (Punjabi University); Avneet Kaur (Punjabi University); Parth Panday (College of Technology); Ekambir Sidhu (Punjabi University);*
- 11:40 Understanding Rate Allocation Mechanism in Strategic and Structural Communication Network via Dynamic Adjacency  
*Priya Ranjan (Amity University Uttar Pradesh); Malay Ranjan Tripathy (Amity University Uttar Pradesh); Saumay Pushp (KAIST); Harshit Pandey (Amity University Uttar Pradesh);*
- 12:00 Design and Performance Analysis of Rectangular Textile Microstrip Patch Antennas Employing Different Textile Materials for Ku Band Applications  
*Amarveer Singh (Punjabi University); Gurleen Kaur (Punjabi University); Payal Kalra (Punjabi University); Avneet Kaur (Punjabi University); Jaspreet Singh (Punjabi University); Parth Pandey (College of Technology); Ekambir Sidhu (Punjabi University);*
- 12:20 NS-3 Simulations of  $4 \times 4$  MIMO Integrated with LTE Module  
*Sunil Kumar (Amity University); Malay Ranjan Tripathy (Amity University Uttar Pradesh); Priya Ranjan (Amity University Uttar Pradesh);*

- 12:40 Bandwidth and Efficiency Enhanced Miniaturized Antenna for WLAN 802.11ac Applications  
*Emre Aydin (AirTies Wireless Networks); Mehmet Ali Yesil (AirTies Wireless Networks); Erdem Ulukan (AirTies Wireless Networks); Cafer Uyanik (Istanbul Technical University);*

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### Session 1A\_10

### FocusSession.SC2: Metamaterials and Transformation Optics 1

Monday AM, May 22, 2017

Room R11

Organized by Hongsheng Chen, Yu Luo

Chaired by Bin Zheng, Wei Liu

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- 09:20 Hidden Symmetries in Plasmonic Gratings  
Invited  
*Paloma Arroyo Huidobro (Imperial College London); Stefan A. Maier (Imperial College London); John B. Pendry (Imperial College London);*
- 09:40 Cloaking by Metasurfaces in the Transmission Geometry  
Invited  
*Hong Chen Chu (Soochow University); Qi Li (Fudan University); Bingbing Liu (Soochow University); Jie Luo (Soochow University); Zhi Hong Hang (Soochow University); Shulin Sun (Fudan University); Lei Zhou (Fudan University); Yun Lai (Soochow University);*
- 10:00 Three-dimensional Quasi-static Magnetic Cloak at Room Temperature  
Invited  
*Wei Jiang (Zhejiang University); Sailing He (Zhejiang University); Yungui Ma (Zhejiang University);*
- 10:20 Realization of Conformal Mapping Cloak for Surface Wave  
Invited  
*Rongrong Zhu (Zhejiang University); Bin Zheng (Zhejiang University); Huaping Wang (Zhejiang University); Shahram Dehdashti (Zhejiang University); Hongsheng Chen (Zhejiang University);*
- 10:40 Microwave Dielectric Properties of Nanocomposites Based on Opal Matrices with Particles of Spinel  
*Anatoly B. Rinkevich (Institute of Metal Physics); D. V. Perov (Institute of Metal Physics Ural Division of Russian Academy of Sciences); Ya. A. Pakhomov (M.N. Miheev Institute of Metal Physics Ural Branch of RAS); M. I. Samoylovich (Central Research Technological Institute "TECHNOMASH"); E. A. Kuznetsov (Nizhny Tagil Branch of the Ekaterinburg State Social-Pedagogical University);*

11:00 **Coffee Break**

- 11:20 Influence of Permittivity and Substrate Thickness for Miniaturization of Artificial Magnetic Conductor  
*Welyson Tiano dos Santos Ramos (University of Minas Gerais); Renato Cardoso Mesquita (University of Minas Gerais); Elson Jose Da Silva (Universidade Federal de Minas Gerais);*
- 11:40 Analysis of Electric Field Distribution on Artificial Magnetic Conductor: Via Bowtie Shape  
*Welyson Tiano dos Santos Ramos (University of Minas Gerais); Renato Cardoso Mesquita (University of Minas Gerais); Elson Jose Da Silva (Universidade Federal de Minas Gerais);*
- 12:00 Electromagnetic Beams in 1D Photonic Crystals  
*Maria V. Perel (St. Petersburg State University); Mikhail S. Sidorenko (St. Petersburg State University);*

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### Session 1A\_11

#### FocusSession.SC2: New Principles and Applications of Photonic/Phononic Crystals 1

Monday AM, May 22, 2017

#### Room R10

Organized by Yun Lai, Lei Shi

Chaired by Yun Lai, Lei Shi

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- 09:00 Superluminal Propagation in Non-Hermitian Systems  
 Invited  
*Kazuaki Sakoda (National Institute for Materials Science);*
- 09:20 Novel Nanophotonic Light Source  
 Keynote  
*Marin Soljacic (Massachusetts Institute of Technology);*
- 09:50 Valley-dependent Transportation and Pseudomagnetic Field in Photonic Graphene  
 Invited  
*Hong Chen (Tongji University);*
- 10:10 Topological Bound State in Continuum  
 Invited  
*Guancong Ma (Hong Kong University of Science and Technology); Yixin Xiao (The Hong Kong University of Science and Technology); Zhao-Qing Zhang (The Hong Kong University of Science and Technology); C. T. Chan (The Hong Kong University of Science and Technology);*
- 10:30 Ultratransparency Effect of Photonic Crystals  
 Invited  
*Jie Luo (Soochow University); Zhi Hong Hang (Soochow University); Yun Lai (Soochow University);*

### 11:00 Coffee Break

- 11:20 Tunable Topological Photonic Crystals  
 Invited  
*Zeguo Chen (King Abdullah University of Science and Technology); Jun Mei (South China University of Technology); Ying Wu (King Abdullah University of Science and Technology (KAUST));*
- 11:40 Topological Phase Transition and Interface States in Hybrid Plasmonic-photonic Systems  
 Invited  
*Dezhuan Han (Chongqing University);*
- 12:00 Coalescence of Exceptional Points and Phase Diagrams of PT-symmetric Polariton Crystal  
 Invited  
*Zhen-Zhen Liu (Harbin Institute of Technology); Jun Jun Xiao (Harbin Institute of Technology);*

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### Session 1A\_12a

#### Photonics and Optoelectronics with Two-dimensional Materials

Monday AM, May 22, 2017

#### Room R9

Organized by Anna Baldycheva, Monica Craciun

Chaired by Anna Baldycheva

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- 09:00 Photon- and Plasmon-assisted Resonant Tunneling in Graphene-based Heterostructures  
*Andrey Bylinkin (Moscow Institute of Physics and Technology); Dmitry Svintsov (Moscow Institute of Physics and Technology); Victor Ryzhii (Tohoku University); Taiichi Otsuji (Tohoku University);*
- 09:20 Optical Diffraction from Photonic-graphene Metasurfaces  
*A. D. Sinelnik (ITMO University); Mikhail V. Rybin (National Research University for Information Technology, Mechanics and Optics); M. F. Limonov (ITMO University); Yuri S. Kivshar (Australian National University); K. B. Samusev (Lofte Physics-Technical Institute of the Russian Academy of Science);*
- 09:40 Monolayer Graphene Based Perfect Absorption Structures  
*Chu-Cai Guo (National University of Defense Technology); Zhihong Zhu (National University of Defense Technology); Ken Liu (National University of Defense Technology); Xiao-Dong Yuan (National University of Defense Technology); Shiqiao Qin (National University of Defense Technology);*

10:00 Chip-integrated Nearly Perfect Graphene Absorber  
*Wei Xu (National University of Defense Technology); Zhihong Zhu (National University of Defense Technology); Ken Liu (National University of Defense Technology); Jianfa Zhang (National University of Defense Technology); Chu-Cai Guo (National University of Defense Technology);*

10:20  $\text{Hg}_{1-x}\text{Cd}_x\text{Te}$  Based *p-i-n* IR Photodetector for Free Space Optical Communication  
*Shonak Bansal (PEC University of Technology); Kuldeep Sharma (PEC University of Technology); Khushboo Soni (Institute of Nano Science and Technology); Neena Gupta (PEC University of Technology); Kaushik Ghosh (PEC University of Technology); Arun Kumar Singh (PEC University of Technology);*

11:00 Coffee Break

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**Session 1A\_12b**  
**Biophotonics, Optical Sensors and**  
**Environmental Monitoring**

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**Monday AM, May 22, 2017**

**Room R9**

Chaired by Bruno Beche

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11:20 The Laser-induced Synthesis of Linear Carbon Chains  
*Anton V. Osipov (Stoletovs' Vladimir State University); Sergey M. Arakelyan (Stoletovs Vladimir State University); Stella V. Kutrovskaia (Stoletovs' Vladimir State University); V. Samyshkin (Vladimir State University);*

11:40 Integrated Polymeric Interferometer with Slot Waveguide for Photonics Sensing  
*Jozef Chovan (International Laser Centre); Frantisek Uherek (Slovak University of Technology in Bratislava); Anton Kuzma (Slovak University of Technology in Bratislava);*

12:00 Dielectric Waveguides with Aperiodic Fibonacci Nanostructure for Point-of-care Biosensing Applications  
*Moritz Paulsen (Christian-Albrechts-Universitat zu Kiel); Sabrina Jahns (Christian-Albrechts-Universitat zu Kiel); Martina Gerken (Christian-Albrechts-Universitat zu Kiel);*

12:20 Polymer Resonators for Glucose Sensing and Milk Sphingomyelin Gel/Fluid Phase Transition Detection  
*Q. Li (Universite Rennes 1); V. Vie (Universite de Rennes 1); R. Castro-Beltran (Universite Rennes 1); H. Lhermite (Universite de Rennes 1); E. Gaviot (Universite Le Mans); A. Moreac (Universite Rennes 1); D. Morineau (Universite de Rennes 1); C. Bourlieu (Science et Technologie du Lait et de l'Oeuf); D. Dupont (Science et Technologie du Lait et de l'Oeuf); L. Frein (Universite Rennes 1); Bruno Beche (Universite Rennes 1);*

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**Session 1A0**  
**Poster Session 1**

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**Monday AM, May 22, 2017**

**9:00 AM - 13:00 AM**

**Room B2**

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- 1 Regular TEC Variations in Mid-latitude and Polar Regions  
*Anna S. Yasyukevich (Institute of Solar-Terrestrial Physics of Siberian Branch of Russian Academy of Sciences); Yury Vladimirovich Yasyukevich (Institute of Solar-Terrestrial Physics (ISTP), Siberian Branch of Russian Academy of Sciences); Anna A. Mylnikova (Institute of Solar-Terrestrial Physics (ISTP), Siberian Branch of Russian Academy of Sciences);*
- 2 Scintillation Studies of Scattered Radio Waves in the Ionosphere  
*George Vakhtang Jandieri (Georgian Technical University); Zhuzhuna Diasamidze (Batumi Shota Rustaveli State University); Mzia Resan Diasamidze (Batumi State Maritime Academy); Irma Takidze (Batumi State Maritime Academy);*
- 3 Magnetoelectric Effects in Compositionally-stepped Multilayers of Lead-free Piezoelectric and Magnetostrictive Components  
*Vladimir Mikhailovich Petrov (Novgorod State University); M. I. Bichurin (Novgorod State University); D. V. Kovalenko (Novgorod State University);*
- 5 Kinetics of Structuring of Protein Solutions in Magnetic Fields in Dehydration  
*M. A. Baranov (Peter the Great Saint Petersburg Polytechnic University); E. N. Velichko (Peter the Great Saint Petersburg Polytechnic University); Elina K. Nepomnyashchaya (Peter the Great Saint Petersburg Polytechnic University); Evgenii T. Aksenov (Peter the Great Saint Petersburg Polytechnic University);*

- 6 Exploiting the Goos-Hänchen and Imbert-Fedorov Effects in a Magneto-electric Liquid-crystal-based System for Applications to Tunable Chemical Vapor Detection  
*Yuliya S. Dadoenkova (Novgorod State University); Florian F. L. Bentivegna (ENIB); Viacheslav V. Svetukhin (Ulyanovsk State University); Roman Valer'evich Petrov (Novgorod State University); Alexander Sergeevich Tatarenko (Novgorod State University); Mirza Imamovich Bichurin (Novgorod State University);*
- 7 High-resolution Fiber Plasmon Sensor  
*Kirill A. Tomyshev (Kotel'nikov Institute of Radio Engineering and Electronics of RAS); D. K. Tazhetdinova (Kotel'nikov Institute of Radio Engineering and Electronics of RAS); Oleg V. Butov (Kotel'nikov Institute of Radio Engineering and Electronics of RAS);*
- 8 An LP-DOAS Instrument with a Laser Driven Light Source for Open-path Measurement of Atmospheric NO<sub>2</sub> in Shanghai  
*Mingzhi Li (University of Shanghai for Science and Technology); Jun Chen (University of Shanghai for Science and Technology); Mingxu Su (University of Shanghai for Science and Technology); Huinan Yang (University of Shanghai for Science and Technology); Arun Ramachandran (National Institute of Technology Calicut); Ravi Varma (National Institute of Technology Calicut);*
- 9 Laser Induced Cell Death Stages Investigation by Raman Spectroscopy  
*Andrey Yurievich Zubin (Immanuel Kant Baltic Federal University); Igor V. Alekseenko (Immanuel Kant Baltic Federal University); Ilya Samusev (Immanuel Kant Baltic Federal University); Svetlana Babak (Immanuel Kant Baltic Federal University); Maksim Demin (Immanuel Kant Baltic Federal University); Valery Bryukhanov (Immanuel Kant Baltic Federal University);*
- 10 Interaction between Quantum Dots CdSe/ZnS Adsorbed on Silver Roughness Surface with Human Serum Albumin  
*Andrey Yurievich Zubin (Immanuel Kant Baltic Federal University); Elizaveta I. Konstantinova (Immanuel Kant Baltic Federal University); Ekaterina Moiseeva (Immanuel Kant Baltic Federal University); Vasilii A. Slezhkin (Immanuel Kant Baltic Federal University); Valery V. Bryukhanov (Immanuel Kant Baltic Federal University);*
- 11 Augmented Combined Field Integral Equation for Low Frequency Problems  
*Dingbang Wen (University of Electronic Science and Technology of China); Zai-Ping Nie (University of Electronic Science and Technology of China); Lu Liu (University of Electronic Science and Technology of China); Zijian Liu (University of Electronic Science and Technology of China); Jun Tan (University of Electronic Science and Technology of China);*
- 12 Non-conforming and Non-overlapping DDM for Solving Scattering from PEC Objects  
*Kui Han (University of Electronic Science and Technology of China (UESTC)); Zai-Ping Nie (University of Electronic Science and Technology of China); Dingbang Wen (University of Electronic Science and Technology of China); Xiaofeng Que (University of Electronic Science and Technology of China); Shiquan He (University of Electronic Science and Technology of China);*
- 13 Heating of Metal Powders in the External High-frequency Field  
*Alexander V. Vodopyanov (Federal State Budgetary Scientific Institution "Federal Research Center The Institute of Applied Physics of the Russian Academy of Sciences"); Igor D. Dubinov (Federal State Budgetary Scientific Institution "Federal Research Center The Institute of Applied Physics of the Russian Academy of Sciences"); Vladimir E. Semenov (Federal State Budgetary Scientific Institution "Federal Research Center The Institute of Applied Physics of the Russian Academy of Sciences");*
- 14 Loop-star Decomposition for Any Higher-order Elements for the Surface Integral Equation  
*Jose M. Gil (Universidad Politecnica de Madrid); Miguel Angel Gonzalez (Universidad Politecnica de Madrid); Rafael Gomez-Alcala (Universidad de Extremadura); Jesus Garcia-Jimenez (Universidad Politecnica de Madrid);*
- 15 Optimal Design and Modeling of the Multi-stage Saturable Magnetically Controlled Reactor  
*Xuxuan Chen (Wuhan University of Science and Technology); Bin Wang (Wuhan University of Science and Technology);*
- 16 Mini- and Microgenerators Magnetic Circuits Design  
*Pavel Fiala (Brno University of Technology); Zoltan Szabo (Brno University of Technology); Petr Marcon (Brno University of Technology); Zdenek Roubal (Brno University of Technology); Tomas Kriz (Brno University of Technology);*



- 17 Electrical Impedance Tomography in the Testing of Material Defects  
*Tomas Kriz (Brno University of Technology); Jan Dusek (Brno University of Technology);*
- 18 Terahertz Symmetrical Polarization Conversion in Asymmetrical Chiral Metasurface  
*Feng Lan (University of Electronic Science and Technology of China); Pinanki Mazumder (University of Michigan); Ziqiang Yang (University of Electronic Science and Technology of China); Lin Meng (University of Electronic Science and Technology of China); Xiaofang Wu (University of Electronic Science and Technology of China); Feng Luo (University of Electronic Science and Technology of China);*
- 19 Switchable Terahertz Polarization Conversion via Phase-change Metasurface  
*Xiaofang Wu (University of Electronic Science and Technology of China); Ziqiang Yang (University of Electronic Science and Technology of China); Feng Lan (University of Electronic Science and Technology of China); Zongjun Shi (University of Electronic Science and Technology of China);*
- 20 Modulation of the Plasmonic Modes in Dielectric-graphene-dielectric Superlattice  
*J. Madrigal-Melchor (Escuela de Fisica de la Universidad Autonoma de Zacatecas); Isaac Rodriguez-Vargas (Universidad Autonoma de Zacatecas); J. R. Suarez-Lopez (Universidad Autonoma de Zacatecas); I. A. Sustaita-Torres (Universidad Autonoma de Zacatecas); C. Sifuentes-Gallardo (Universidad Autonoma de Zacatecas);*
- 21 Subwavelength Focusing of Laser Light Using Zone Plates with Silver and Chromium Rings  
*Elena Sergeevna Kozlova (Samara National Research University); Victor V. Kotlyar (Image Processing Systems Institute of the Russian Academy of Sciences); Anton G. Nalimov (Image Processing Systems Institute — Branch of the Federal Scientific Research Centre “Crystallography and Photonics” of Russian Academy of Scienc); Sergey S. Stafeev (Image Processing Systems Institute — Branch of the Federal Scientific Research Centre “Crystallography and Photonics” of Russian Academy of Scienc); Maria V. Kotlyar (Samara National Research University); Liam O’Faolain (School of Physics and Astronomy of the University of St. Andrews);*
- 22 A Metalens for Subwavelength Focus of Light  
*Victor V. Kotlyar (Image Processing Systems Institute of the Russian Academy of Sciences); Anton G. Nalimov (Image Processing Systems Institute — Branch of the Federal Scientific Research Centre “Crystallography and Photonics” of Russian Academy of Sciences); Sergey S. Stafeev (Image Processing Systems Institute — Branch of the Federal Scientific Research Centre “Crystallography and Photonics” of Russian Academy of Sciences); Liam O’Faolain (School of Physics and Astronomy of the University of St. Andrews); Elena Sergeevna Kozlova (Samara National Research University);*
- 23 On NV Centers Properties in Aggregates of Detonation Nanodiamonds  
*Stepan V. Bolshedvorskii (PN Lebedev Institute, RAS); Vadim V. Vorobyov (PN Lebedev Institute, RAS); Vladimir V. Soshenko (PN Lebedev Institute, RAS); Vladimir A. Shershulin (Prokhorov General Physics Institute, RAS); Anton Zelenev (Moscow Institute of Physics and Technology); Javid Javadzade (Moscow Institute of Physics and Technology); Olga Rubinas (Moscow Institute of Physics and Technology); Vadim N. Sorokin (PN Lebedev Institute, RAS); Andrey N. Smolyaninov (Photonic Nano-Meta Technologies); Alexey V. Akimov (Texas A&M University);*
- 24 Topological Edge Solitons in Polaritonic Lattice  
*Dmitry R. Gulevich (ITMO University); D. Yudin (ITMO University); Dmitry V. Skryabin (University of Bath); Ivan V. Iorsh (ITMO University); I. A. Shelykh (ITMO University);*
- 25 Zero Phonon Line Enhancement by Mie-type Resonances of Nanodiamonds with Nitrogen-vacancy Centers  
*Anastasiia S. Zalogina (ITMO University); G. P. Zograf (ITMO University); S. V. Makarov (ITMO University); R. S. Savelev (ITMO University); S. I. Kudryashov (ITMO University); E. Y. Tigguntseva (ITMO University); Ilya V. Shadrivov (Australian National University); D. A. Zuev (ITMO University); D. A. Zuev (ITMO University); Pavel A. Belov (ITMO University);*
- 26 Purcell Factor Enhancement by Dielectric Nanoantennas for Nanodiamonds with NV-centers  
*Anastasiia S. Zalogina (ITMO University); R. S. Saveliev (ITMO University); Ilya V. Shadrivov (Australian National University); D. A. Zuev (ITMO University); Pavel A. Belov (ITMO University);*

- 27 Approach for Fine-tuning of Hybrid Dimer Nanoantennas via Laser Melting  
*Stanislav A. Kolodny (ITMO University); Yali Sun (Huazhong University of Science and Technology); Dmitry A. Zuev (ITMO University); Pavel A. Belov (ITMO University); Alexandr E. Krasnok (National Research University of Information Technologies, Mechanics and Optics (ITMO));*
- 28 Experimental Demonstration of Fine-tunable Fano Resonance in Hybrid Oligomers  
*Sergey Igorevich Lepeshov (ITMO University); A. E. Krasnok (ITMO University); V. A. Milichko (ITMO University); Dmitry A. Zuev (ITMO University); I. S. Mukhin (ITMO University); Pavel A. Belov (ITMO University); Andrey E. Miroshnichenko (Australian National University);*
- 29 Soliton Dual Comb in Crystalline Microresonators  
*Nikolay G. Pavlov (Moscow Institute of Physics and Technology); G. Likhachev (Russian Quantum Center); S. Koptjev (Samsung R&D Institute Russia, SAIT-Russia Laboratory); N. M. Kondratiev (Russian Quantum Center); V. E. Lobanov (Russian Quantum Center); A. S. Voloshin (Russian Quantum Center); A. D. Ostapchenko (Moscow Institute of Physics and Technology); A. S. Gorodnitskii (Moscow Institute of Physics and Technology); I. A. Bilenko (Russian Quantum Center); M. L. Gorodetsky (Russian Quantum Center);*
- 30 A Calibration Method for Phase-only Spatial Light Modulator  
*Bingzhi Zhang (Guangzhou University); Yujie Chen (Sun Yat-sen University); Raohui Feng (Sun Yat-sen University);*
- 31 Optimal Phase Element for Generating an Elliptic Perfect Optical Vortex  
*Alexey A. Kovalev (Samara State Aerospace University, Image Processing Systems Institute of the Russian Academy of Science); Victor V. Kotlyar (Image Processing Systems Institute of the Russian Academy of Sciences); Elena Sergeevna Kozlova (Samara National Research University);*
- 32 On the Bi-elliptical Toroidal Helical Antenna Problem  
*Hisham Abubakar Muhammed (University of Lagos); Sulaiman Adeniyi Adekola (University of Lagos); Alex Ike Mowete (University of Lagos);*
- 33 A Low Frequency Forward Looking Antenna Array for LWD and MWD  
*Zijian Liu (University of Electronic Science and Technology of China); Zai-Ping Nie (University of Electronic Science and Technology of China); Xiang Yang Sun (University of Electronic Science and Technology of China); Dingbang Wen (University of Electronic Science and Technology of China); Jun Tan (University of Electronic Science and Technology of China);*
- 34 Design of Slot Arrays for the Generation of Stair-step Patterns  
*Alapati Sudhakar (RVR & JC College of Engineering); Devabhaktuni Madhavi (RVR & JC College of Engineering);*
- 35 Analysis and Measurement of Attenuation Constants of Ultra Wideband Signal through Commonly Used Building Materials  
*Alapati Sudhakar (RVR & JC College of Engineering); Devabhaktuni Madhavi (RVR & JC College of Engineering);*
- 36 Concerning the Influence of Edge and Corner Feeds on the Radiation Fields of a Square-loop Antenna  
*Ayotunde Abimbola Ayorinde (University of Lagos); Sulaiman Adeniyi Adekola (University of Lagos); Alex Ike Mowete (University of Lagos);*
- 37 Analysis of a Circular-loop Antenna Backed by a Circular Ground-plane of Finite Extent  
*Ayotunde Abimbola Ayorinde (University of Lagos); Sulaiman Adeniyi Adekola (University of Lagos); Alex Ike Mowete (University of Lagos);*
- 38 Design of Ring-shaped Circular Microstrip Antenna for ULB Application  
*Chafaa Hamrouni (University of Gabes); Chafai Abdel Hamid (ENIG); Hedi Sakli (Institut Supérieur d'Informatique de Medenine); Abdennacer Kachouri (University of Gabes); Mohamed Naceur Abdelkrim (Ecole Nationale d'Ingenieurs de Gabes);*
- 39 Compact Coplanar Epsilon-negative Antenna with Ultra-wide Band Character  
*Jun Tao (Southwest Jiaotong University); Quanyuan Feng (Southwest Jiaotong University);*
- 40 A Zeroth-order Resonant Antenna with Bandwidth Extended by Merging the Zeroth-order Mode with the First-negative Mode  
*Yonghao Xin (Southwest Jiaotong University); Quanyuan Feng (Southwest Jiaotong University); Jun Tao (Southwest Jiaotong University);*
- 41 Compensation of Pointing for the Parabolic Antenna of a Radio Telescope  
*Huan Yu (Shanghai Institute of Technology);*

- 42 Synthesis of Plane Wave Applied to 5G Communication Antenna Measurement  
*Rensheng Xie (East China Normal University); Xi Wang (East China Normal University); Rongwei Wang (East China Normal University); Tailei Wang (East China Normal University); Dong Chen (East China Normal University); Tao Song (East China Normal University); Lei Kuang (East China Normal University); Shouzheng Zhu (East China Normal University);*
- 43 Design of Semi-active RFID Antenna  
*Rongwei Wang (East China Normal University); Rensheng Xie (East China Normal University); Tailei Wang (East China Normal University); Dong Chen (East China Normal University); Tao Song (East China Normal University); Lei Kuang (East China Normal University); Shouzheng Zhu (East China Normal University);*
- 44 Frequency Transformation to Design Single Band Rectangular Patch MMW Antennas  
*Mayar Raafat Wageeh Elsebai (Misr International University (MIU)); Tamer Mostafa Abdelfadl (Cairo University); Fawzy Ibrahim (Misr International University (MIU));*
- 45 Asymmetric Coplanar Waveguide Fed Monopole Antenna with Perturbed Ground Plane  
*L. Meenu (Amrita University); S. Aiswarya (Amrita University); Sreedevi K. Menon (Amrita University);*
- 46 Investigation on the Circularly Polarized Ferrite Antenna in Different Designs  
*Haiqing Deng (Southwest Jiaotong University); Quanyuan Feng (Southwest Jiaotong University); Jinyan Liu (Southwest Jiaotong University); Zongliang Zheng (Southwest Jiaotong University);*
- 47 A Wideband Dual Circular Polarization Feed Chain for Satellite Antennas at K/Ka Bands  
*Jin-Gang Gong (Xidian University); Qiao Li (Xidian University); Ming-Tao Zhang (Xi'an Institute of Space Radio Technology); Jian Hou (Academy of Space Electronic Information Technology); Yang Wang (Academy of Space Electronic Information Technology); Zhi Xu (Academy of Space Electronic Information Technology);*
- 48 Detection of Vulnerable Road Users in Blind Spots through Bluetooth Low Energy  
*Jo Verhaevert (Ghent University);*
- 49 Effects of the Acoustic Gravity Waves on Altitudinal Atmospheric Profiles for Radio Occultation Experiments  
*Askar Khamidullin Faritovich (M. V. Lomonosov Moscow State University (MSU)); M. E. Gorbunov (A. M. Obukhov Institute of Atmospheric Physics, Russian Academy of Sciences); V. I. Zakharov (M. V. Lomonosov Moscow State University (MSU));*
- 50 Analytic Modeling and Optimization of the SSD Performance in Remote Sensing Systems  
*Qiyong Xie (National University of Defense Technology); Hui Xu (National University of Defense Technology);*
- 51 A Hybrid Integration Method for Uniformly Accelerated Target  
*Ruiqi Tian (National University of Defense Technology); Caiyong Lin (National University of Defense Technology); Qinglong Bao (National University of Defense Technology); Zengping Chen (National University of Defense Technology);*
- 52 A Wavelet Based Denoising Method for Weak Target Detection of Pulse Compression Radar  
*Caiyong Lin (National University of Defense Technology); Ruiqi Tian (National University of Defense Technology); Qinglong Bao (National University of Defense Technology); Zengping Chen (National University of Defense Technology);*
- 56 Efficient Model to Analyze the Frequency Selective Surfaces  
*Yi-Ling Wang (University of Electronic Science and Technology of China (UESTC)); Zaiping Nie (University of Electronic Science and Technology of China);*
- 57 Modeling of the Energy Flux Density in a Circular Waveguide with a Layer of the Metamaterial  
*Vladimir A. Meshcheryakov (Tomsk State University); Victor A. Zhuravlev (Tomsk State University);*
- 58 Design Tunable Filter-antennas for Cognitive Radio Applications  
*Yahya Salameh Hassan Khraisat (Al-Balqa' Applied University/Al-Huson University College); Huthaifa Al-Issa (Al-Balqa' Applied University/Al-Huson University College);*
- 60 Numerical Study of the Exciton-light Coupling in Quantum Wells  
*P. A. Belov (St. Petersburg State University); E. S. Khramtsov (St. Petersburg State University); P. S. Grigoryev (St. Petersburg State University); Ivan V. Ignatiev (St. Petersburg State University);*

- 63 Generalized Design Technique for Fast Waveguide Ferrite Phase Shifters  
*Andrey Budkin (Bauman Moscow State Technical University); Maxim Golubtsov (Bauman Moscow State Technical University); Vladimir Litun (Bauman Moscow State Technical University); Gennady Shukin (Bauman Moscow State Technical University);*
- 64 Enhanced Magneto-optical Activity at Waveguide Modes in All-dielectric Photonic Structures  
*Nikolai Evgenyevich Khokhlov (Lomonosov Moscow State University); S. A. Dagesyan (Lomonosov Moscow State University); A. K. Zvezdin (Russian Quantum Center); V. I. Belotelov (Lomonosov Moscow State University);*
- 65 Analysis of Schottky Barrier Indium Arsenide Nanowire MOSFET for High Frequency Application  
*Neel Chatterjee (Amity University Uttar Pradesh); Pradeep Kumar (Amity University Uttar Pradesh); Hemender Pal Singh (Amity University); Malay Ranjan Tripathy (Amity University Uttar Pradesh); Sujata Pandey (Amity University);*
- 66 Thermal Analysis of III-V Transistor at High Frequencies  
*Neel Chatterjee (Amity University Uttar Pradesh); Pradeep Kumar (Amity University Uttar Pradesh); Hemender Pal Singh (Amity University); Malay Ranjan Tripathy (Amity University Uttar Pradesh); Sujata Pandey (Amity University);*
- 67 Study of the Optical Properties of Silver Nanoparticle Layers and c-Si-based Nanostructure Layers  
*Vladimir A. Tolmacheva (Ioffe Physical Technical Institute); Yuliya A. Zharova (Ioffe Physical Technical Institute); Sergey I. Pavlov (Centre of Nanoheterostructure Physics and the Joint Research Centre "Materials Science and Characterization in Advanced Technologies" at Ioffe Instit); Anastasiya I. Bednaya (ITMO University);*
- 68 Harnessing the Point-spread Function for High-resolution Far-field Optical Microscopy  
*Xiangsheng Xie (Sun Yat-Sen University); Guorong Guan (Sun Yat-Sen University);*

**Session 1P1****SC3: Advanced Optofluidics: Optical Control and Photonics with Fluid Matter 1****Monday PM, May 22, 2017****Room G5**

Organized by Francesco Simoni, Luigino Criante

Chaired by Francesco Simoni, Luigino Criante

- 14:00 Generation of High Speed Liquid Jets for Needle Free Injections  
*Carla Berrospe-Rodriguez (Instituto Nacional de Astrofísica, Óptica y Electrónica); Claas Willem Visser (University of Twente); Stefan Schlautmann (University of Twente); David Fernandez-Rivas (University of Twente); Ruben Ramos-Garcia (Instituto Nacional de Astrofísica, Óptica y Electrónica);*
- 14:20 What's Matter of Gold-nanoparticles Sorting Using Optofluidic Chip  
*Zhengchuan Yang (Peking University); Ai Qun Liu (Nanyang Technological University);*
- 14:40 Optofluidics in Microstructured Optical Fibers  
*Stavros Pissadakis (Institute of Electronic Structure and Laser (IESL));*
- 15:00 Optical Mapping of the Pulsatile Blood Flow *in-vivo*  
*Alexei A. Kamshilin (ITMO University); Oleg V. Mamonov (Almazov Federal Heart, Blood and Endocrinology Center);*
- 15:20 High Aspect-ratio Microchannels on Diamond Surface for Versatile Microfluidic and Sensing Applications  
*Ottavia Jedrkiewicz (CNR and CNISM UdR Com); Sanjeev Kumar (Universita dell'Insubria); Be-len Sotillo (Politecnico di Milano); Monica Bollani (IFN-CNR); Andrea Chiappini (IFN-CNR CSMFO Lab.); Maurizio Ferrari (IFN-CNR CSMFO Lab.); Roberta Ramponi (Institute of Photonics and Nanotechnology (IFN) — CNR); Paolo Di Trapani (University of Insubria and CNISM UdR Como); Shane Michael Eaton (Politecnico di Milano);*
- 15:40 Tuning Topological Defects in Anisotropic Fluids for Nano-objects Structuring  
*D. Kasyanyuk (Institute of Physics, National Academy of Sciences of Ukraine); C. Provenzano (University of Calabria); A. Mazzulla (CNR-NANOTEC); P. Pagliusi (CNR-IMIP); Yu. Reznikov (National Academy of Sciences of Ukraine); Gabriella Cipparrone (University of Calabria);*

**16:00 Coffee Break**

**16:20 Tunable Optofluidic Microcavities Obtained with Optically Trapped Liquid Crystal Microdroplets**

*Invited Alexandr Jonas (Istanbul Technical University); Zdenek Pilat (Institute of Scientific Instruments of the CAS); Jan Jezek (Institute of Scientific Instruments of the CAS); Silvie Bernatova (Institute of Scientific Instruments of the CAS); Pavel Zemanek (Institute of Scientific Instruments of the ASCR, v.v.i.); Mehdi Aas (Koc University); Alper Kiraz (Koc University);*

**16:40 Trapping and Manipulating of Gas Bubbles with the Help of Marangoni Effect**

*Invited Andrzej Miniewicz (Wroclaw University of Science and Technology); Clement Quintard (Wroclaw University of Science and Technology); Stanislaw Bartkiewicz (Wroclaw University of Science and Technology); Hanna Orlikowska (Wroclaw University of Science and Technology);*

**17:00 All Optical Controlled Phase Shifter for Optofluidic Platforms Based on Hybrid Lithium Niobate/Liquid Crystal Cells**

*Invited Liana Lucchetti (Universita Politecnica delle Marche); K. Kushnir (Kyiv National Taras Shevchenko University); V. Reshetnyak (Kyiv National Taras Shevchenko University); Annamaria Zaltron (University of Padova); Cinzia Sada (University of Padova); Francesco Simoni (Universita Politecnica delle Marche);*

**17:20 Optical Phase Induced by Electrically Tunable Surface Free Energy on a Liquid Crystal and Polymer Composite Film**

*Invited Chia-Ming Chang (National Chiao Tung University); Yi-Hsin Lin (National Chiao Tung University);*

**17:40 Many-sided Investigation of a Liquid Droplet Lying on a Substrate by Different Optical Techniques**

*Invited Ilia Nikolayevich Pavlov (National Research University "Moscow Power Engineering Institute"); I. L. Raskovskaya (National Research University "Moscow Power Engineering Institute"); Bronyus S. Rinkevichyus (National Research University "Moscow Power Engineering Institute"); A. V. Tolkachev (National Research University "Moscow Power Engineering Institute");*

**18:00 Laser Radiation Caustics Method for Quantitative Diagnostic of Transparent Inhomogeneous Media**

*Anastasia V. Vedyashkina (National Research University "Moscow Power Engineering Institute"); Bronyus S. Rinkevichyus (Moscow Power Engineering Institute); I. L. Raskovskaya (National Research University "Moscow Power Engineering Institute"); Ilia Nikolayevich Pavlov (National Research University "Moscow Power Engineering Institute");*

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**Session 1P2a**

**Extended/Unconventional Electromagnetic Theory, EHD(Electrohydrodynamics)/EMHD(Electro-magneto-hydrodynamics), and Electro-biology**

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**Monday PM, May 22, 2017**

**Room G6**

Organized by Eva Gescheidtova

Chaired by Tomas Kriz

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**14:00 Modeling the Propagation of a Modulated Ultrasonic Wave in a Nonlinear Medium**

*David Hladky (Brno University of Technology); Jan Mikulka (Brno University of Technology);*

**14:20 The Optimization of Electrical Tomography Algorithms**

*Jan Mikulka (Brno University of Technology); David Hladky (Brno University of Technology); Jan Dusek (Brno University of Technology); Tomas Kriz (Brno University of Technology);*

**14:40 Highly Accurate Image Reconstruction Using Electrical Impedance Tomography**

*Tomas Kriz (Brno University of Technology); Jan Dusek (Brno University of Technology);*

**15:00 Comparison of Switch Controlling Alternatives**

*Vladislav Skorpil (Brno University of Technology); Petr Cika (Brno University of Technology); L. Mojzis (Brno University of Technology);*

**15:20 Subjective Comparison of Modern Video Codecs**

*Petr Cika (Brno University of Technology); D. Kovac (Brno University of Technology); Vladislav Skorpil (Brno University of Technology); T. Srnec (Brno University of Technology);*

**15:40 The Modeling of Power Line for PLC in Smart Grids**

*Jiri Misurec (Brno University of Technology); Petr Mlynek (Brno University of Technology); S. Bezateev (Saint Petersburg State University of Aerospace Instrumentation);*

16:00 **Coffee Break**

16:20 Numerical Analysis of Nanoscale Resonators Using Material Parameters at THz Frequencies  
*Petr Drexler (Brno University of Technology); Dusan Nesporec (Brno University of Technology); Radim Kadlec (Brno University of Technology); Eva Gescheidtova (Brno University of Technology);*

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**Session 1P2b**  
**Electromagnetic Theory**

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**Monday PM, May 22, 2017**

**Room G6**

Chaired by Shuhei Amakawa

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16:40 Prescriptions for Identifying the Definition of Complex-referenced  $S$ -parameters in Commercial EM Simulators  
*Yuya Kobayashi (Hiroshima University); Shuhei Amakawa (Tokyo Institute of Technology);*

17:00 What Mechanism Makes EM Radiation Quantized. Photon Structure and Size  
*Sen Nian Chen ((National) Hua Qiao University);*

17:20 Influence of a Strong Electromagnetic Wave on the Hall Coefficient and Hall Conductivity in Cylindrical Quantum Wires with In-plane Magnetic Field  
*Nguyen Thu Huong (Hanoi University of Science, Vietnam National University); Hoang Dinh Trien (Hanoi University of Science, Vietnam National University); Nguyen Quang Bau (Hanoi National University);*

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**Session 1P3**  
**Electromagnetic Modeling and Inversion and Applications**

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**Monday PM, May 22, 2017**

**Room G7**

Organized by Jianhua Li, Ganquan Xie

Chaired by Ganquan Xie, Shigu Cao

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14:00 Compact Dual-mode Microstrip Band Reject Filter Based on Koch Fractal Geometry  
*Hayder S. Ahmed (Home 8, Street 36, Site 409, Utaifiyya); Ali J. Salim (University of Technology); Jawad K. Ali (University of Technology);*

14:20 Electrical Shielding Effectiveness of Metallic Enclosures; Effect of Source Orientation and Aperture Dimension  
*Ibrahim Bahadir Basyigit (Akdeniz University); Abdullah Genc (Suleyman Demirel University); Selcuk Helhel (Akdeniz University);*

14:40 Semitransparent Screen for Cutoff of the Far Fields in the Shadow Domain  
*Dmitry V. Tatarnikov (Topcon Positioning Systems, Moscow Aviation Institute (Technical University)); Alexey A. Generalov (Topcon Positioning Systems, Moscow Aviation Institute (Technical University));*

15:00 Novel GLHUA EM Invisible Cloak and EM Wave Propagation in It  
*Jianhua Li (GL Geophysical Laboratory); Feng Xie (GL Geophysical Laboratory); Lee Xie (GL Geophysical Laboratory); Ganquan Xie (GL Geophysical Laboratory); Dayuling Supercomputational Sciences Center);*

15:20 The Application of the Boundary Element Method in BEM++ to the Study of Two-dimensional Scattering by Small Extreme Chebyshev ice Particles  
*Anthony J. Baran (Met Office); Samuel P. Groth (University of Reading);*

15:40 Critical Dimension Metrology of Two-dimensional Photonic Crystal Based on Inversion of Angle-resolved Spectroscopic Ellipsometry  
*Jean-Philippe Banon (Norwegian University of Science and Technology); Thomas Brakstad (Norwegian University of Science and Technology); Brage S. Boe (Norwegian University of Science and Technology); Morten Kildemo (Norwegian University of Science and Technology); Inge Simonsen (Norwegian University of Science and Technology);*

16:00 **Coffee Break**

16:20 GLC Cloud Computing Method and Simulations of GLHUA Outer Layer Cloak  
*Jianhua Li (GL Geophysical Laboratory); Lee Xie (Hunan Super Computational Sciences Center); Feng Xie (GL Geophysical Laboratory); Shigu Cao (Chinese Dayuling Supercomputational Sciences Center); Ganquan Xie (GL Geophysical Laboratory); Dayuling Supercomputational Sciences Center);*

- 16:40 AGILD MagLev-advanced Global Integral and Local Differential Modeling and Inversion for Magnetic Levitation  
*Jianhua Li (GL Geophysical Laboratory); Feng Xie (GL Geophysical Laboratory); Lee Xie (Hunan Super Computational Sciences Center); Ganquan Xie (GL Geophysical Laboratory; Dayuling Supercomputational Sciences Center); Michael Oristaglio (Yale University); Shigu Cao (Chinese Dayuling Supercomputational Sciences Center);*
- 17:00 The Numerical Solution of Electromagnetic Integral Equation in Frequency Domain Based on Higher-order Basis Functions  
*Hua Wang (National University of Defense Technology); Jianshu Luo (National University of Defense Technology); Shigu Cao (Chinese Dayuling Supercomputational Sciences Center);*
- 17:20 How to Make a Machine via 3D Printing  
*Shigu Cao (Chinese Dayuling Supercomputational Sciences Center); Lee Xie (Hunan Super Computational Sciences Center); Ganquan Xie (GL Geophysical Laboratory; Dayuling Supercomputational Sciences Center);*
- 17:40 Iterative Non-ambiguous Estimation of Dielectric Permittivity from Broadband Transmission/Reflection Measurements  
*Marco Degiorgi (Universita di Pisa); Filippo Costa (University of Pisa); Agostino Monorchio (Universita di Pisa); Giuliano Manara (University of Pisa);*
- 18:00 Microstrip Bandstop Filter Using G-shaped Defected Microstrip Structure  
*Xuemei Zheng (Harbin Engineering University); Yanjie Sun (Harbin Engineering University); Hengxu Wang (Harbin Engineering University); Ji-ah Mei (Harbin Engineering University); Tao Jiang (Harbin Engineering University);*
- 18:20 A Modeling Method of Lossy Transmission-line Using Step-response Obtained by Slow Rising Waveform  
*Yuto Matsushita (Gifu University); Toshikazu Sekine (Gifu University); Yasuhiro Takahashi (Gifu University);*
- 18:40 3D Electromagnetic Elastic Joint Finite Element Method and Stochastic SGILD Method  
*Jianhua Li (GL Geophysical Laboratory); Ganquan Xie (GL Geophysical Laboratory; Dayuling Supercomputational Sciences Center); Lee Xie (Hunan Super Computational Sciences Center); Feng Xie (GL Geophysical Laboratory); Shigu Cao (Chinese Dayuling Supercomputational Sciences Center);*

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**Session 1P4**
**Advanced Mathematical and Computational Methods in Electromagnetic Theory and Their Applications 1**


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**Monday PM, May 22, 2017**
**Room G8**

Organized by Georgi Nikolov Georgiev, Mariana Nikolova Georgieva-Grosse

 Chaired by Mariana Nikolova Georgieva-Grosse
 

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- 14:00 Comparing the Calderón and A- $\Phi$  Formulation for Lossy Dielectric Simulation at Low Frequency  
 Invited *Michael Wei (University of Illinois); Qin S. Liu (University of Hong Kong); Weng Cho Chew (University of Illinois);*
- 14:20 Recent Developments of Implicit Finite-difference Time-domain Schemes  
 Invited *Eng Leong Tan (Nanyang Technological University); Ding Yu Heh (Nanyang Technological University); Zafeng Yang (Nanyang Technological University);*
- 14:40 The Peculiarities of Resonant Interaction of Transition Radiation of a Charged Particle in a Waveguide with Periodically Modulated Anisotropic Magnetodielectric Filling  
 Invited *Eduard A. Gevorkyan (Plekhanov Russian Economic University);*
- 15:00 Nonstandard Description of the Electromagnetic Field (Part 1, Computational Analysis of Charge Motion in EM)  
*George Meshveliani (Ivane Javakhishvili Tbilisi State University); Baia Gelashvili (Ivane Javakhishvili Tbilisi State University);*
- 15:20 A New Method for Constructing an Orthogonal System of Eigenwaves of an Open Cylindrical Waveguide Surrounded by an Isotropic Medium  
*Vasiliy Alekseevich Es'kin (University of Nizhny Novgorod); Alexander V. Kudrin (University of Nizhny Novgorod);*
- 15:40 The Effects of Electromagnetic Radiation on the Structure and Dynamics of Amyloidogenic Peptides  
*Nevena Todorova (RMIT University); A. Bentvelzen (RMIT University); N. J. English (University College Dublin); Irene Yarovsky (RMIT University);*
- 16:00 **Coffee Break**

16:20 Theorem for the  $\hat{G}_1(\hat{c}, \hat{n})$  Numbers

Invited

*Mariana Nikolova Georgieva-Grosse (Consulting and Researcher in Physics and Computer Sciences); Georgi Nikolov Georgiev (University of Veliko Tirnov "St. St. Cyril and Methodius");*

16:40 Influence of Damping Resistance in Electromagnetic Transients Using Alternate Structures of  $\pi$  Circuits

Invited

*Melissa De Oliveira Santos (Sao Paulo State University (UNESP)); Luis Henrique Jus (Sao Paulo State University (UNESP)); Afonso Jose Do Prado (UNESP — Universidade Estadual Paulista); Elmer Mateus Gennaro (UNESP — Universidade Estadual Paulista); Jose Pissolato Filho (UNICAMP — State University of Campinas);*

## 17:00 Comparative Analysis of the Effectiveness of Some Algorithms in the Method of Auxiliary Sources

Invited

*Anastasia V. Korobkina (Moscow Institute of Physics and Technology); Sergei P. Skobelev (Joint Stock Co Radiophysika);*

## 17:20 Whistler Wave Radiation from a Loop Antenna Located in an Enhanced Density Duct in a Nonresonant Magnetoplasma

*Alexander V. Kudrin (University of Nizhny Novgorod); Oleg M. Ostafiyuk (University of Nizhny Novgorod); Tatyana M. Zaboronkova (Technical University of Nizhny Novgorod);*

## 17:40 Computation of Electromagnetic Field and Complex Materials Interaction

*Rongshan Qin (The Open University);*

## 18:20 Instantaneous Spatial Variation of Green's Tensor in Complex Nanostructures via Eigenmode Expansion

*Parry Yu Chen (Tel Aviv University); David J. Bergman (Tel Aviv University); Yonatan Sivan (Ben-Gurion University);*

## 14:00 Low Loss Magneto-optical Oxide Thin Films for Silicon Integrated Nonreciprocal Photonic and Magneto-plasmonic Device Applications

Invited

*Jun Qin (University of Electronic Science and Technology of China); Yan Zhang (University of Electronic Science and Technology of China); Keyi Shui (University of Electronic Science and Technology of China); Xiao Liang (University of Electronic Science and Technology of China); Tongtong Kang (University of Electronic Science and Technology of China); Liu Chuan (University of Electronic Science and Technology of China); Longjiang Deng (University of Electronic Science and Technology of China); Lei Bi (University of Electronic Science and Engineering of China);*

## 14:20 Recent Progress in Low-power Information Processing Using 1D and 2D Integrated Optical Devices

Invited

*Jian Wang (Huazhong University of Science and Technology);*

## 14:40 2D and 3D Heterogeneous Integrated Circuits for Energy-efficient Information Processing

Invited

*S. J. Ben Yoo (University of California);*

## 15:00 Efficient Modulation with Coupled Microring Resonators

*Mario Cesar Mendes Machado de Souza (Universidade Estadual de Campinas); Luis A. M. Barea (Federal University of Sao Carlos); Newton C. Frateschi (Universidade Estadual de Campinas);*

## 15:20 Ultrashort and Low-loss Si Based Multiplexing Devices

Invited

*Xingjun Wang (Peking University); Mei Yin (Peking University); Qingzhong Deng (Peking University); Yanping Li (Peking University);*

## 15:40 Monolithic Silicon DP-IQ Modulator for Low-Driving-Voltage Operation

Invited

*Kazuhiro Goi (Fujikura Ltd.); Norihiro Ishikura (Fujikura Ltd.); Haikuo Zhu (Fujikura Ltd.); Kensuke Ogawa (Fujikura Ltd.); Yuki Yoshida (National Institute of Information and Communications Technology); Ken-ichi Kitayama (The Graduate School for the Creation of New Photonics Industries); Tsung-Yang Liow (A\*STAR); Xiaoguang Tu (A\*STAR); Guo-Qiang Lo (A\*STAR); Dim-Lee Kwong (A\*STAR);*

## 16:00 Coffee Break

## Session 1P5

## Integrated Optical Devices for Low-power Information Processing

Monday PM, May 22, 2017

Room G9

Organized by Linjie Zhou, Shaoqi Feng

Chaired by Linjie Zhou



16:20 Graphene-on-Silicon Slot Waveguides and Applications  
Invited

*Zhenzhou Cheng (The University of Tokyo); Ji-qi Wang (The Chinese University of Hong Kong); Zefeng Chen (The Chinese University of Hong Kong); Tinghui Xiao (The University of Tokyo); Hon Ki Tsang (The Chinese University of Hong Kong); Chester Shu (The Chinese University of Hong Kong); Jian-Bin Xu (The Chinese University of Hong Kong); Keisuke Goda (The University of Tokyo);*

16:40 SOI-based Devices by Inverse Design

Invited

*Jifang Qiu (Beijing University of Posts and Telecommunications); Chong Meng (Beijing University of Posts and Telecommunications); Ye Tian (Beijing University of Posts and Telecommunications); Zi Ye (Beijing University of Posts and Telecommunications); Li Zheng (Beijing University of Posts and Telecommunications); Jian Wu (Beijing University of Posts and Telecommunications);*

17:00 Resonant and Slow-light  $2 \times 2$  Switches Enabled by Nanobeams and Grating-coupled Waveguides  
Invited

*Richard Soref (University of Massachusetts Boston);*

17:20 Coupled Waveguide Lasers and LEDs by Parity-time Symmetry  
Invited

*Ruizhe Yao (University of Massachusetts Lowell); Chi-Sen Lee (University of Massachusetts Lowell); Viktor A. Podolskiy (Oregon State University); Wei Guo (University of Massachusetts Lowell);*

17:40 Slow Light Enhanced Graphene Micro-heater for Silicon Photonics  
Invited

*Jianji Dong (Huazhong University of Science and Technology); Siqi Yan (Huazhong University of Science and Technology); Xinliang Zhang (Huazhong University of Science and Technology);*

18:00 Continuously Tunable Silicon Optical Delay Line Built on Ultra-thin Silicon Waveguides  
Invited

*Linjie Zhou (Shanghai Jiao Tong University); Xinyi Wang (Shanghai Jiao Tong University); Liangjun Lu (Shanghai Jiao Tong University); Jianping Chen (Shanghai Jiao Tong University);*

18:20 Reduced Thermal Hysteresis in Hf-doped VO<sub>2</sub> Films for Low-power Reconfigurable Silicon Photonic Device Applications

*Taixing Huang (University of Electronic Science and Technology of China); Tongtong Kang (University of Electronic Science and Technology of China); Jianliang Xie (University of Electronic Science and Technology of China); Longjiang Deng (University of Electronic Science and Technology of China); Qingyang Du (MIT); Juejun Hu (Massachusetts Institute of Technology); Lei Bi (University of Electronic Science and Engineering of China);*

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### Session 1P6

#### Theory and Methods of Digital Signal Processing in the Problems of Remote Sensing, Radar, and Radiometry 2

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Monday PM, May 22, 2017

Room G10

Organized by Victor Filippovich Kravchenko, Boris Georgievich Kutuza

Chaired by Victor Filippovich Kravchenko, Boris Georgievich Kutuza

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14:00 Spectral Variability of the Atmosphere Downwelling Radiation Measured by Microwave Radiometer-spectrometer in the Range of 18–27 GHz

*M. T. Smirnov (Kotelnikov Institute of Radioengineering and Electronics, RAS); V. P. Savorsky (Kotelnikov Institute of Radioengineering and Electronics, RAS); D. M. Ermakov (Kotelnikov Institute of Radioengineering and Electronics, RAS); B. G. Kutuza (Kotelnikov Institute of Radioengineering and Electronics, RAS); S. Yu. Turygin (Kotelnikov Institute of Radioengineering and Electronics, RAS);*

14:20 An Influence of Meteorological Conditions on the Accuracy of PS Interferometry Measurements

*Alexander Zakharov (Kotelnikov IRE RAS); Alexey Feoktistov (Research Center for Earth Operative Monitoring); Pavel Denisov (Research Center for Earth Operative Monitoring); Maxim Gusev (Research Center for Earth Operative Monitoring);*

- 14:40 Simulation Tools for Satellite Observations of Radio-brightness Characteristics of the Anomalies in Lower Troposphere  
*Victor P. Savorskiy (Kotel'nikov Institute of Radioengineering and Electronics, RAS); Dmitry M. Ermakov (Kotel'nikov Institute of Radioengineering and Electronics of RAS); O. G. Shagimuratov (Kotel'nikov Institute of Radioengineering and Electronics, RAS); M. T. Smirnov (Kotel'nikov Institute of Radioengineering and Electronics, RAS); S. Yu. Turygin (Kotel'nikov Institute of Radioengineering and Electronics, RAS); A. P. Chernushich (Kotel'nikov Institute of Radioengineering and Electronics of RAS); I. N. Kibardina (Kotel'nikov Institute of Radioengineering and Electronics of RAS); M. V. Danilychev (Kotel'nikov Institute of Radioengineering and Electronics of RAS);*
- 15:00 Observation of Earthquake Swarm Consequences in the Baikal Rift System with ALOS-2 Interferometry  
*Marina Lebedeva (Institute of the Earth's Crust, Siberian Branch of Russian Academy of Sciences); Vladimir Sankov (Institute of the Earth's Crust, Siberian Branch of Russian Academy of Sciences); Alexander Zakharov (Kotel'nikov IRE RAS); Ludmila Zakharova (Kotel'nikov IRE RAS);*
- 15:20 PolSAR Image Fast Classification Based on Random Similarity  
*Dong Li (National Space Science Center, Chinese Academy of Sciences); Yunhua Zhang (National Space Science Center, Chinese Academy of Sciences); Feiya Zhu (National Space Science Center, Chinese Academy of Sciences);*
- 15:40 Reconstruction of Water Vapor Profile in the Lower Troposphere by Differential Radiometric Measurements from Satellites  
*Victor V. Sterlyadkin (Space Research Institute); Evgenii V. Pashinov (Space Research Institute); Alexey V. Kuzmin (Space Research Institute, Russian Academy of Sciences); Evgenii A. Sharkov (Space Research Institute, Russian Academy of Sciences);*
- 16:00 **Coffee Break**
- 16:20 Multi-threshold Fuzzy Clustering Sorting Algorithm  
*Jiawei Wang (Harbin Engineering University); Changbo Hou (Harbin Engineering University); Fuxin Qu (Harbin Engineering University);*
- 16:40 Improving the Efficiency of Radar Functioning in Conditions of Unpredictable Factors  
*Y. A. Gelozhe (Southern Federal University); Pavel P. Klimenko (Southern Federal University); A. V. Maksimov (Southern Federal University);*
- 17:00 Multichannel Scanning Imager-Sounder MTVZA-GY on Russian Weather Satellite Meteor-MN2: The Simulated and Measured Brightness Temperatures in the Range of 10–190 GHz  
*Leonid M. Mitnik (V. I. Il'ichev Pacific Oceanological Institute FEB RAS); V. P. Kuleshov (V. I. Il'ichev Pacific Oceanological Institute FEB RAS); Maia L. Mitnik (V. I. Il'ichev Pacific Oceanological Institute FEB RAS); I. A. Barsukov (JSC "Russian Space Systems"); I. V. Cherny (JSC "Russian Space Systems"); G. M. Chernyavsky (JSC "Russian Space Systems");*
- 17:20 Statistics of Surface and Atmospheric Microwave Properties at Summit Station, Greenland from MTVZA-GY Observations in the Range 10–190 GHz  
*Leonid M. Mitnik (V. I. Il'ichev Pacific Oceanological Institute FEB RAS); V. P. Kuleshov (V. I. Il'ichev Pacific Oceanological Institute FEB RAS); Maia L. Mitnik (V. I. Il'ichev Pacific Oceanological Institute FEB RAS); I. V. Cherny (JSC "Russian Space Systems");*
- 17:40 Field Measurements of the Wind Profile Using Millimeter Doppler Radar  
*Victor V. Sterlyadkin (Space Research Institute); Andrei G. Gorelik (Central Design Bureau of Apparatus); Konstantin V. Kulikovskii (Moscow Technology University); Viktor M. Kalmykov (Central Design Bureau of Apparatus); Dmitrii V. Ermilov (Central Design Bureau of Apparatus); Alexandr V. Khomyakov (Central Design Bureau of Apparatus);*
- 18:00 Detection of Embedded Objects in Saline Water  
*Merve Sunel (Akdeniz University); Atalay Kocakusak (Akdeniz University); Ibrahim Bahadır Basyigit (Akdeniz University); Sukru Ozen (Akdeniz University); Selcuk Helhel (Akdeniz University);*
- 18:20 Space-temporal Stochastic Characteristics of Complex Amplitude for the Sounding Vector Optical Beam  
*Eugene Aleksandrovich Babanin (Moscow State M. V. Lomonosov University); Vitaly Vladimirovich Kapranov (S. P. Korolev Rocket and Space Corporation "Energia"); Natalia A. Soukhareva (Moscow M. V. Lomonosov State University); Vyacheslav Yuryevich Tugaenko (S. P. Korolev Rocket and Space Corporation "Energia"); Olga Mikhailovna Vokhnik (Moscow State M. V. Lomonosov University);*

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**Session 1P7**
**Method of Integral Equations in  
Computational Electromagnetics**


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**Monday PM, May 22, 2017**
**Room B1**

Organized by Vladimir Okhmatovski, Weng Cho Chew

 Chaired by Vladimir Okhmatovski, Weng Cho Chew
 

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- 14:00 Spectral Effects of Layered Media on the Mode Analysis of Photonic Waveguides  
*Aytac Alparslan (ETH Zurich);*
- 14:20 A Direct Multi-scale Integral Formulation of Computational Electromagnetics  
*Derek Y. C. Chan (University of Melbourne); Evert Klaseboer (Institute of High Performance Computing); Qiang Sun (University of Melbourne);*
- 14:40 Second Harmonic Generation in Plasmonic and Dielectric Nanostructures with Vortex Beams  
*Xiaoyan Y. Z. Xiong (University of Hong Kong); Ahmed Al-Jarro (University College London); Li Jun Jiang (University of Hong Kong); Nicolae-Coriolan Panoiu (University College London); Wei E. I. Sha (University of Hong Kong);*
- 15:00 Electromagnetic Propagation Characteristics in K-layered Dissipative Media with Rough Surface  
*Yidong Xu (Harbin Engineering University); Lili Guo (Harbin Engineering University); Wei Xue (Harbin Engineering University); Yingsong Li (Harbin Engineering University);*
- 15:20 Electromagnetic Wave Diffraction by a System of Arbitrarily Located 1D, 2D, and 3D Scatterers  
*M. A. Moskaleva (Penza State University); Yury G. Smirnov (Penza State University); Aleksei A. Tsupak (Penza State University);*
- 15:40 Integral Equation Based Field Transformation with Effective Echo Suppression in the Near-field by Virtual Beam Forming and Field Synthesis  
*Josef Knapp (Technical University of Munich); Thomas F. Eibert (Technical University of Munich);*
- 16:00 **Coffee Break**
- 16:20 Scaling of a Spatial Spectral Integral-equation Method for EM Scattering in a Stratified Medium to Large, Finite Objects  
*Roeland J. Ditz (Eindhoven University of Technology); Martijn C. van Beurden (Eindhoven University of Technology);*
- 16:40 An Efficient Numerical Model for Analysis of Microstrip Antenna  
*Lu Liu (University of Electronic Science and Technology of China); Zai-Ping Nie (University of Electronic Science and Technology of China);*
- 17:00 New Single Source Integral Equations for Solution of Scattering Problems  
*Vladimir Okhmatovski (University of Manitoba); F. S. L. Hosseini (University of Manitoba); S. Zheng (University of Manitoba); Anton Menshov (University of Manitoba); S. Hossen (University of Manitoba);*
- 17:20 Analysis and Triggering of Dark Modes in Plasmonic Nanostructures with Surface Integral Equations and Theory of Characteristic Modes  
*Pasi Yla-Ojala (Aalto University); Dimitrios C. Tzarouchis (Aalto University); Ari Sihvola (Aalto University);*
- 17:40 Discrete Quasi-Helmholtz Decomposition for High Contrast and Lossy Dielectric Problems  
*Xin Qi (University of Electronic Science and Technology of China); Zai-Ping Nie (University of Electronic Science and Technology of China); Yue Wang (University of Electronic Science and Technology of China); Xiaofeng Que (University of Electronic Science and Technology of China); Jun Hu (University of Electronic Science and Technology of China);*
- 18:00 Accuracy of the Surface Integral-equation Formulations for Large Negative Permittivity Values  
*Bariscan Karaosmanoglu (Middle East Technical University); Ozgur Ergul (Middle East Technical University);*
- 18:20 Green's Function for Inhomogeneous Waveguides Using the Method of Broadband Green's Functions  
*Tien-Hao Liao (California Institute of Technology); Kung-Hau Ding (Air Force Research Laboratory, Wright-Patterson AFB); Leung Tsang (University of Michigan);*
- 18:40 Hybrid DBA-BCGS-FFT Algorithm for Arbitrary 3D Fracture Detection and Mapping in Through-casing Measurements  
*Yuan Fang (Duke University); Yunyun Hu (Duke University); Qing Huo Liu (Duke University);*

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**Session 1P8**
**FocusSession.SC1: Casimir Effect and Heat Transfer 2**


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**Monday PM, May 22, 2017**
**Room B5**

Organized by Mauro Antezza, Brahim Guizal

 Chaired by Mauro Antezza, Brahim Guizal
 

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- 14:20 Body-induced Dipole-dipole Interaction of Excited Atoms near Surfaces  
Invited *Stefan Scheel (University of Rostock); Johannes Block (University of Rostock); Helge Dobbertin (University of Rostock);*
- 14:40 Material Dependence of the Heat Transfer at the Transition between Conduction and Radiation  
Invited *Achim Kittel (University of Oldenburg); Svend-Age Biehs (Carl von Ossietzky Universitat); David Hellmann (University of Oldenburg); Konstantin Kloppstech (University of Oldenburg); Nils Konne (University of Oldenburg); Ludwig Worbes (University of Oldenburg); Alejandro W. Rodriguez (Princeton University);*
- 15:00 Energy Exchange between Two Solids Separated by a Nanoscale Vacuum Gap: The Role of Phonons  
Invited *Samy Merabia (Universite de Lyon); Ali Alkurdi (Universite de Lyon);*
- 15:20 Spontaneous Emission of an Atom in a Modulated Photonic Bandgap Environment  
Invited *Guseppe Calajo (Institute of Atomic and Subatomic Physics, TU Wien); Roberto Passante (Universita degli Studi di Palermo and CNISM); Lucia Rizzuto (Universita degli Studi di Palermo and CNISM);*
- 15:40 Time-dependent Resonance Interaction between Correlated Atoms under Non-equilibrium Conditions  
Invited *Roberta Palacino (Universita degli Studi di Palermo); Roberto Passante (Universita degli Studi di Palermo); Lucia Rizzuto (Universita degli Studi di Palermo and CNISM); Salvatore Spagnolo (Universita degli Studi di Palermo); Wenting Zhou (Universita degli Studi di Palermo);*
- 16:00 **Coffee Break**
- 16:20 Thermal van der Waals Interactions between Two Molecules in Generic Environments  
Invited *Pablo Barcellona (University of Freiburg); Helge Dobbertin (University of Rostock); Stefan Scheel (University of Rostock); Manuel Donaire (Laboratoire Kastler-Brossel, ENS-PSL-CNRS-UPMC); Stefan Yoshi Buhmann (University of Freiburg);*

- 16:40 Coherence Generation, Irreversible Entropy Production and Non-adiabaticity in Quantum Processes  
Invited *G. Francica (Universita'della Calabria); John Goold (The Abdus Salam International Centre for Theoretical Physics (ICTP)); Francesco Plastina (Universita'della Calabria);*
- 17:00 Radiative Heat Transfer between Metallic Gratings Using Adaptive Spatial Resolution  
Invited *Brahim Guizal (University of Montpellier); Riccardo Messina (University of Montpellier); Antonio Noto (Universite de Montpellier); Mauro Antezza (Universite de Montpellier);*
- 17:20 Casimir Forces in Realistic Plasmonic Systems  
Invited *T. V. Raziman (Swiss Federal Institute of Technology Lausanne (EPFL)); Olivier J. F. Martin (Swiss Federal Institute of Technology Lausanne (EPFL));*
- 17:40 Atom Surface Interactions in Quantum Systems  
Invited *Mark Fromhold (University of Nottingham);*
- 18:00 Sub-wavelength Thermal Radiation and Thermophotovoltaics  
Invited *Pierre-Olivier Chapuis (CNRS, National Institute of Applied Physics (INSA) Lyon); Etienne Blandre (Université de Lyon, CNRS, INSA-Lyon, Université Claude Bernard Lyon 1); Khac Long Nguyen (Université de Lyon, CNRS, INSA-Lyon, Université Claude Bernard Lyon 1); Jerome Sarr (Université de Lyon, CNRS, INSA-Lyon, Université Claude Bernard Lyon 1); Makoto Shimizu (Université de Lyon, CNRS, INSA-Lyon, Université Claude Bernard Lyon 1); Olivier Merchiers (Université de Lyon, CNRS, INSA-Lyon, Université Claude Bernard Lyon 1); Rodolphe Vaillon (Université de Lyon);*
- 18:20 Recent Experimental Developments in the Measurement of the Casimir Interaction from 0.2 to 8 Microns  
Invited *Ricardo S. Decca (Indiana University — Purdue University Indianapolis);*
- 18:40 Casimir-like Interactions of Dirac Fields under External Boundary Conditions: A Model for Graphene  
*Manuel Donaire (Universidad de Valladolid); Jose Ma Munoz-Castaneda (Universidad Politecnica de Madrid); Luis Miguel Nieto (Universidad de Valladolid);*

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**Session 1P9**
**New Trends in Antenna, Dynamic Networks  
and Communication Signal Processing 2**


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**Monday PM, May 22, 2017**
**Room B3**

 Organized by Malay Ranjan Tripathy, Boris A.  
Lagovsky

 Chaired by Malay Ranjan Tripathy, Boris A.  
Lagovsky
 

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- 14:00 High Gain Reduced Ground Terahertz Microstrip Patch Antenna Design for the Detection of Trinitrotoluene (TNT) Explosives Material  
*Simarjit Singh Saini (Punjabi University); Gurleen Kaur (Punjabi University); Nitika Rani (Punjabi University); Jasleen Kaur (Punjabi University); Ekambir Sidhu (Punjabi University);*
- 14:20 Multi-band Frequency Tunable LTE Antenna for Mobile Phone Applications  
*Basak Ozbakis (Izmir Institute of Technology); Serdar Okuyucu (Yasar University); Mustafa Secmen (Yasar University); Korkut Yegin (Ege University);*
- 14:40 Superresolution in Signal Processing Using a Priori Information  
*Boris A. Lagovsky (Moscow State Institute of Radio Engineering and Automation (Technical University)); A. G. Chikhina (Moscow State Institute of Radio Engineering and Automation (Technical University));*
- 15:00 Design and Performance Analysis of High Gain Flexible Yagi Microstrip Patch Antenna for Fixed-satellite, Radio Location and Amateur-satellite Service Applications  
*Jasleen Kaur (Punjabi University); Nitika Rani (Punjabi University); Amarveer Singh (Punjabi University); Vatanjeet Singh (Punjabi University); Ranjeet Kaur (Punjabi University); Ekambir Sidhu (Punjabi University);*
- 15:20 Flexible Microstrip Patch Antenna Designs for Bluetooth, IMT, WLAN and WiMAX Applications  
*Ekambir Sidhu (Punjabi University); Divesh Mittal (Punjabi University); Simarjit Singh Saini (Punjabi University); Charanjit Singh (Punjabi University); Ranjit Kaur (Punjabi University);*
- 15:40 Parabolic Reflector Near-field to Far-field Transformation Using FDTD and Pocklington Equation  
*Jorge R. Sosa-Pedroza (Instituto Politecnico Nacional); Sergio Pena-Ruiz (Instituto Politecnico Nacional); Fabiola Martinez-Zuniga (Instituto Politecnico Nacional);*
- 16:00 **Coffee Break**
- 16:20 Experimental Wireless Ultra Wideband Sensor Network for Data Collection  
*Sergey V. Volvenko (Peter the Great St. Petersburg Polytechnic University); Dong Ge (Tsinghua University); Sergey V. Zavjalov (Peter the Great St. Petersburg Polytechnic University); Alexander S. Gruzdev (Peter the Great St. Petersburg Polytechnic University); Andrey V. Rashich (Peter the Great St. Petersburg Polytechnic University); Evgeniy L. Svechnikov (Peter the Great St. Petersburg Polytechnic University);*
- 16:40 Group Delay Equalizer for Ku Band Block-up Converters  
*Nuri Saydam (Ege University); Mustafa Pehlivan (Ege University); Korkut Yegin (Ege University);*
- 17:00 An Investigation of Pattern and Frequency Reconfigurable Microstrip Slot Antenna Using PIN Diodes  
*Nibash Kumar Sahu (Veer Surendra Sai University of Technology, Burla); Ashish Kumar Sharma (Veer Surendra Sai University of Technology, Burla);*
- 17:20 Mode Analysis of the Tree-like Networks of Nonlinear Oscillators  
*Olga Stanislavovna Katkova (National Research University "MPEI"); Ansar R. Safin (National Research University "Moscow Power Engineering Institute"); M. Kapranov (National Research University "MPEI"); Elena D. Surovyatkina (Space Research Institute of Russian Academy of Sciences); J. Kurths (University of Potsdam);*
- 17:40 Magneto-dielectric Properties of Composite Ferrite Based Substrate for UHF Band Microstrip Antenna  
*P. Jain (PEC University of Technology); Shonak Bansal (PEC University of Technology); N. Kumar (PEC University of Technology); Sanjeev Kumar (PEC University of Technology); N. Gupta (PEC University of Technology); Arun Kumar Singh (PEC University of Technology);*
- 18:00 In-Building Solutions Using Distributed Antenna System Based on Fractal Array  
*Ashraf Mohamed Ahmed Fata (Arab Academy for Science and Technology (AASTMT)); Mirehan M. M. Aboulila (Arab Academy for Science and Technology);*
- 18:20 Impact of Geometrical Parameters on Performance of MWCNT Based Chip Interconnects  
*M. Kaur (PEC University of Technology); N. Gupta (PEC University of Technology); Arun Kumar Singh (PEC University of Technology);*
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**Session 1P\_10**
**MS-1: Mini-symposium on Nanophotonics and Metamaterials 1**


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**Monday PM, May 22, 2017**
**Room R11**

Organized by Pavel A. Belov, Andrey A. Bogdanov

 Chaired by Roman S. Savelev, Ivan V. Iorsh
 

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14:10 Controlled Spatio-temporal Dynamics of Strong Coupling in Plasmonic Nanocavities

*Ortwin Hess (Imperial College London);*

14:40 Laser Direct Writing of Electronic and Electro-optical Devices

*Ioanna Zergioti (National Technical University of Athens);*

15:00 Optimizing the Drude-Lorentz Model for Material Permittivity: Examples for Semiconductors

*Hame Singh Sehmi (Cardiff University); Wolfgang W. Langbein (Cardiff University); Egor A. Muljarov (Cardiff University);*

15:20 Atomic-force Lithography for Photonic Applications

*Alexey O. Kucherik (Stoletovs' Vladimir State University); Stella V. Kutrovskaya (Stoletovs' Vladimir State University); Igor O. Skryabin (Stoletovs' Vladimir State University); Anastasia Yu. Shagurina (Stoletovs' Vladimir State University); Anton V. Osipov (Stoletovs' Vladimir State University); I. Chesnov (A.G. and N.G. Stoletov Vladimir State University (VSU));*

15:40 On the Thresholds of Nanovoid Formation in Glasses by Femtosecond Laser

*Anton Rudenko (Lyon University); Jean-Philippe Colombier (Lyon University); Tatiana E. Itina (University of Lyon);*

 16:00 **Coffee Break**

16:20 Nanoimprinted Hybrid Perovskite Metasurfaces

*Sergey Makarov (ITMO University); V. A. Milichko (ITMO University); E. Ushakova (ITMO University); Yuri S. Kivshar (Australian National University); A. Zakhidov (ITMO University);*

16:40 Laser Printing Optical Metasurfaces

Invited

*Anders Kristensen (Technical University of Denmark); Xiaolong Zhu (Technical University of Denmark); Christoph Vannahme (Technical University of Denmark); Emil Hojlund-Nielsen (Technical University of Denmark); N. Asger Mortensen (Technical University of Denmark);*

17:00 Deposition of Gold Multilayers for Hyperbolic Metamaterials Fabrication

*Johneph Sukham (Technical University of Denmark); Radu Malureanu (Technical University of Denmark); Andrei V. Lavrinenko (Technical University of Denmark);*

17:20 Topological Edge States in Honeycomb Plasmonic Lattices

*Ruo-Yang Zhang (The Hong Kong University of Science and Technology); Li Wang (The Hong Kong University of Science and Technology); Che Ting Chan (The Hong Kong University of Science and Technology);*

17:40 Graphene Surface Conductivity: Efficient Numerical Modeling

*Ludmila J. Prokopenko (Purdue University); Zhaoyi Kudyshev (Purdue University); Alexander V. Kildishev (Purdue University);*

18:00 Resonant Optical Properties of AlGaAs/GaAs Multiple-quantum-well Based Bragg Structure at the Second Quantum State

*V. V. Chaldyshev (Ioffe Institute); E. V. Kundelev (Ioffe Institute); Alexander N. Poddubny (National Research University for Information Technology, Mechanics and Optics); Y. Chen (City University of New York); M. L. Nakarmi (City University of New York); N. M. Shukla (New York University-Tandon School of Engineering);*

18:20 Effect of Selective Doping on Characteristics of Graphene-van der Waals Heterostructure Terahertz and Infrared Detectors

*Victor Ryzhii (Tohoku University); Taiichi Otsuji (Tohoku University); Maxim Ryzhii (The University of Aizu); Vladimir G. Leiman (Moscow Institute of Physics and Technology (State University)); Dmitry Svintsov (Moscow Institute of Physics and Technology); Vladimir Mitin (University at Buffalo, The State University of New York); Michael S. Shur (Rensselaer Polytechnic Institute);*

- 18:40 Josephson Plasma Waves in Layered Superconductors Subjected to DC Magnetic Field  
*S. S. Apostolov (A. Ya. Usikov Institute for Radiophysics and Electronics, Ukrainian Academy of Sciences); Z. A. Maizelis (A. Ya. Usikov Institute for Radiophysics and Electronics, Ukrainian Academy of Sciences); Nikolay M. Makarov (Benemerita Universidad Autonoma de Puebla); T. N. Rokhmanova (A. Ya. Usikov Institute for Radiophysics and Electronics, Ukrainian Academy of Sciences); Felipe Perez-Rodriguez (Benemerita Universidad Autonoma de Puebla); Valery A. Yampol'skii (Ukrainian Academy of Science);*
- 19:00 Landau Damping in the THz Optic Response of Dielectric-metal Metamaterials  
*D. A. Iakushev (A. Ya. Usikov Institute for Radiophysics and Electronics, Ukrainian Academy of Sciences); Nikolay M. Makarov (Benemerita Universidad Autonoma de Puebla); Felipe Perez-Rodriguez (Benemerita Universidad Autonoma de Puebla);*

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### Session 1P\_11

#### FocusSession.SC2: New Principles and Applications of Photonic/Phononic Crystals 2

Monday PM, May 22, 2017

Room R10

Organized by Yun Lai, Lei Shi

Chaired by Yun Lai, Lei Shi

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- 14:00 Metamaterials and Photonic Crystals Based Photonic Keynote Nanostructures  
*Francisco J. Meseguer (Universidad Politécnica de Valencia);*
- 14:30 Produce Non-iridescent Structural Colors of High Invited Color Visibility  
*Yafeng Zhang (Fudan University); Biqin Dong (Fudan University); Lei Shi (Fudan University); Xiaohan Liu (Fudan University); Jian Zi (Fudan University);*
- 14:50 Role of Thermal Annealing in Phonon Transfer between Graphene and GaN  
*Sanghyuk Park (Gwangju Institute of Science and Technology); Hoonil Jeong (Gwangju Institute of Science and Technology); Minyeo Kim (Gwangju Institute of Science and Technology); Hyeong Yong Hwang (Gwangju Institute of Science and Technology); Young-Dahl Jho (Gwangju Institute of Science and Technology);*

- 15:10 Photonic Crystal Waveguides for Particle Acceleration  
*Andrea Locatelli (Universita degli Studi di Brescia); Gino Sorbello (Universita di Catania); Giuseppe Torrisi (Istituto Nazionale di Fisica Nucleare (INFN)); Luigi Celona (Istituto Nazionale di Fisica Nucleare (INFN)); Costantino De Angelis (Universita degli Studi di Brescia);*
- 15:30 Digital Image Processing for Studying the Colloidal Systems  
*Nikita Pavlovich Kryuchkov (Bauman Moscow State Technical University); Egor Viktorovich Yakovlev (Bauman Moscow Technical University (BMSTU)); Pavel Vasilievich Ovcharov (Bauman Moscow Technical University (BMSTU)); Arsen Karenovich Zotov (Bauman Moscow Technical University (BMSTU)); Kirill Igorevich Zaytsev (Bauman Moscow State Technical University); Stanislav Olegovich Yurchenko (Bauman Moscow State Technical University);*

### 16:00 Coffee Break

- 16:20 Hollow-core Electromagnetic Band Gap Waveguide as DC-break for Ion Sources  
*O. Leonardi (Istituto Nazionale di Fisica Nucleare); Giuseppe Torrisi (Istituto Nazionale di Fisica Nucleare); Loreto Di Donato (University Mediterranea of Reggio Calabria); Andrea Locatelli (Universita degli Studi di Brescia); Luigi Celona (Istituto Nazionale di Fisica Nucleare (INFN)); Costantino De Angelis (Universita degli Studi di Brescia); Gino Sorbello (Istituto Nazionale di Fisica Nucleare);*
- 16:40 Enhanced and Tunable Magneto-optics via Fano Lattice Surface Modes in Arrays of Anisotropic Magnetic Nanoantennas  
*Luca Bergamini (University of the Basque Country UPV-EHU); Nicolo Maccaferri (CIC NanoGUNE); M. Pancaldi (CIC NanoGUNE); M. K. Schmidt (CSIC-UPV/EHU and DIPC); M. Kataja (Aalto University); S. van Dijken (Aalto University); Nerea Zabala (University of the Basque Country UPV-EHU); J. Aizpurua (Donostia International Physics Center (DIPC)); P. Vavassori (CIC NanoGUNE);*
- 17:00 Parametric Study for TiO<sub>2</sub> Nanostructure Arrays  
*Shih-Wen Chen (National Taipei University of Technology); Chung-Kuang Yang (National Taipei University of Technology); Weesiong Chiu (University of Malaya); Choonyian Haw (University of Malaya); Guanting Pan (National Taipei University of Technology);*

- 17:20 Measuring Field- and Time-Dependent Acoustic Phonon Phase and Implicating Those in Anharmonic Decay  
*Young-Dahl Jho (Gwangju Institute of Science and Technology); Hoonil Jeong (Gwangju Institute of Science and Technology); Austin J. Minnich (California Institute of Technology);*
- 17:40 The Colloidal Systems on Semiconductor Nanoparticles  
*Alexey O. Kucherik (Stoletovs' Vladimir State University); Stella V. Kutrovskaia (Stoletovs' Vladimir State University); Igor O. Scrybin (Stoletovs' Vladimir State University); Sergey M. Arakelyan (Stoletovs' Vladimir State University); E. Shamanskaya (Stoletovs' Vladimir State University); S. Zhirnova (Stoletovs' Vladimir State University);*

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### Session 1P\_12

#### FocusSession.SC3: Advanced Solutions in Ultra-high Capacity Optical Communication

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Monday PM, May 22, 2017

Room R9

Organized by Sergei Popov, Sergei K. Turitsyn

Chaired by Sergei Popov, Sergey V. Sergeyev

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- 14:10 Precompensation and Windowing for Nonlinear Frequency-division Multiplexing  
 Invited *S. Civelli (TeCIP Institute, Scuola Superiore Sant'Anna); E. Forestieri (TeCIP Institute, Scuola Superiore Sant'Anna); Marco Secondini (TeCIP Institute, Scuola Superiore Sant'Anna);*
- 14:30 Ultra-low Noise Amplification and Its Application to Optical Communication  
 Keynote *Peter A. Andrekson (Chalmers University of Technology);*
- 15:00 On the Characterization, Modeling and Mitigation of Nonlinear Interference Noise  
 Invited *Andre Richter (VPIphotonics GmbH); Stefanos Dris (VPIphotonics); Kseniia Goroshko (VPIphotonics); Hadrien Louchet (VPIphotonics);*
- 15:20 Polarisation and Stochastic Properties of Fibre Raman Amplifiers  
 Invited *Vladimir Kalashnikov (Aston University); Sergey V. Sergeyev (Aston University); Juan Diego Ania-Castanon (Instituto de Optica "Daza de Valdes", CSIC); Sergei Popov (Royal Institute of Technology (KTH)); Gunnar Jacobsen (Acreo Swedish ICT AB);*

- 15:40 Modeling Linear and Nonlinear Coupling in Few Mode Fibers  
 Invited *A. Trichili (University of Carthage); Mourad Zghal (University of Carthage); L. Palmieri (Universita di Padova); Andrea Galtarossa (Universita di Padova); Marco Santagiustina (Universita di Padova);*

### 16:00 Coffee Break

- 16:20 Out-of-band Nonlinear Spectral Filtering for Nonlinear Fourier Inverse Synthesis Communication  
 Invited *Morteza Kamalian Kopae (Aston University); Jaroslaw E. Prilepsky (Aston University); Stanislav A. Derevyanko (Aston University); S. T. Le (Nokia Bell Labs);*

- 16:40 64-QAM Coherent Optical Systems with Semiconductor Lasers  
 Invited *Jaime Rodrigo Navarro (Network and Transmission Laboratory, Acreo AB); Aditya Kakkar (Network and Transmission Laboratory, Acreo AB); Xiaodan Pang (Network and Transmission Laboratory, Acreo AB); Oskars Ozolins (Network and Transmission Laboratory, Acreo AB); Aleksejs Udalcovs (Royal Institute of Technology (KTH)); Richard Schatz (Royal Institute of Technology (KTH)); Gunnar Jacobsen (Acreo Swedish ICT AB); Sergei Popov (Royal Institute of Technology (KTH));*

- 17:00 Physical-layer Network Coding over Passive Optical Interconnect in Datacenter Network  
 Invited *Rui Lin (Royal Institute of Technology KTH); Yuxin Cheng (Royal Institute of Technology KTH); Jiajia Chen (KTH Royal Institute of Technology);*

- 17:20 Signal Detection for Communication over the Nonlinear Fibre-optic Channel  
 Invited *Simone Gaiaarin (Technical University of Denmark); Darko Zibar (Technical University of Denmark);*

- 17:40 Raman-amplified DWDM Transmission in Links with Symmetry-optimised Optical Phase Conjugation  
 Invited *Juan Diego Ania Castanon (Consejo Superior de Investigaciones Científicas); Pawel Rosa (Consejo Superior de Investigaciones Científicas); Giuseppe Rizzelli (Instituto de Óptica CSIC);*

- 18:00 Noise Modification by Fabry-Perot Filter and Its Influence on the Throughput of the Optical Telecommunication Channels  
*Z. V. Gorelova (Peter the Great St. Petersburg Polytechnic University); Victor M. Petrov (St. Petersburg State Polytechnical University);*



- 18:20 DMGD Reducing in Few-mode Fiber Optic Links by Special Refractive Index Profile and Selective Mode Excitation Provided by Designed MDM Channels Placement Scheme over Fiber Core End  
*Anton V. Bourdine (Povolzhskiy State University of Telecommunications and Informatics (PSUTI)); Vladimir A. Burdin (Povolzhskiy State University of Telecommunications and Informatics (PSUTI));*

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**Session 1P\_13**

**High-frequency/Speed Circuits in Electromagnetics and Optics**

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**Monday PM, May 22, 2017**

**Room R8**

Organized by Chien-Nan Kuo

Chaired by Chien-Nan Kuo, Hong-Yi Huang

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- 14:00 Design and Implementation of Timing Skew Calibration for High-speed Analog-to-digital Converters  
*Po-Chiang Tung (National Chung Cheng University); Tsung-Heng Tsai (National Chung Cheng University);*
- 14:20 A 5–11 GHz Wideband Low Noise Amplifier Using Transformer Feedback Technique  
*Chung-Ying Li (National Central University); Kuan-Hsiu Chien (National Central University); Hsu-Liang Yen (National Central University); Hwann-Kaeo Chiou (National Central University);*
- 14:40 Chip Design of Wireless Power Transfer Using Frequency Variation  
*Shih-Chang Hsia (National Yunlin University of Science and Technology); Po-Yu Kuo (National Yunlin University of Science and Technology); Jui-His Liu (National Yunlin University of Science and Technology);*
- 15:00 System on Programmable Chip Design for FMCW Radar Signal Processing  
*Min-Xiang Huang (National Yunlin University of Science & Technology); Ho-En Liao (Feng Chia University); Yun-Ruei Lee (National Yunlin University of Science & Technology); Ming-Hwa Sheu (National Yunlin University of Science & Technology);*
- 15:20 Integrated 330 GHz CMOS Power Detector with Built-in Chopper and Digital Output for THz Imaging Application  
*Wei-Cheng Chen (National Chiao-Tung University); Tzu-Chao Yan (National Chiao-Tung University); Hao-Chiao Hong (National Chiao-Tung University); Chien-Nan Kuo (National Chiao-Tung University);*
- 15:40 Analysis for the Optimal Designs of Two-coil Inductive Coupling Wireless Power Transfer Systems  
*Hao-Chiao Hong (National Chiao-Tung University);*
- 16:00 **Coffee Break**
- 16:20 Jitter Tolerance and Jitter Transfer Enhancing Technique for High-speed Clock and Data Recovery Circuits  
*Yo-Hao Tu (National Central University); Ting-Tsung Chen (National Central University); Kuo-Hsing Cheng (National Center University);*
- 16:40 Determination of Planar Transmission Line Characteristic Impedances on Lossy/Dispersive Substrates with Three Unknown Calibration Standards up to 110 GHz  
*Chien-Chang Huang (Yuan Ze University);*
- 17:00 Wireless Intraocular Pressure Sensing System — Reader Chip  
*Hong-Yi Huang (National Taipei University); Ping-Che Hsieh (National Taipei University); Bing-Yu Liu (National Taipei University); Tzuen-Hsi Huang (National Cheng Kung University); Ching-Hsing Luo (National Cheng-Kung University); Jin-Chern Chiou (National Chiao-Tung University); Tsung-Han Tsai (National Central University);*
- 17:20 Wireless Intraocular Pressure Sensing System — Sensor Chip  
*Hong-Yi Huang (National Taipei University); Ting-Chia Yeh (National Taipei University); Chun Yi (National Taipei University); Tzuen-Hsi Huang (National Cheng Kung University); Ching-Hsing Luo (National Cheng-Kung University); Jin-Chern Chiou (National Chiao-Tung University);*
- 17:40 A PAM-4 Transmitter with Active Back Termination for High Speed Interconnect  
*Kai-Ti Su (National Chiao-Tung University); Wei-Zen Chen (National Chiao-Tung University);*

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**Session 1P0**

**Poster Session 2**

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**Monday PM, May 22, 2017**

**14:00 PM - 19:00 PM**

**Room B2**

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- 1 A Trefftz Method Formulation for Eigenmode Analysis of Cylindrical Optical Fibers  
*Shingo Sato (Muroran Institute of Technology); Koji Hasegawa (Muroran Institute of Technology);*

- 2 Hybrid Numerical Method Associating a Conformal Transformation of the Complex Plane with a Matrix Formulation for the Calculation of the Eigenvalues and Eigenvectors in Bended Waveguides  
*L. Garnier (Universite de Rennes 1); C. Saavedra (Universidad de Guanajuato); R. Castro-Beltran (Universite Rennes 1); G. A. Cirino (Federal University of Sao Carlos); J. L. M. Lucio (Universidad de Guanajuato); Bruno Beche (Universite Rennes 1);*
- 3 Analysis of Spoke-type Brushless DC Motor Considering Rotor Overhang and Demagnetization  
*Jung-Moo Seo (Korea Electronics Technology Institute); Jeong-Jong Lee (Korea Electronics Technology Institute); Se-Hyun Rhyu (Korea Electronics Technology Institute); Bon-Gwan Gu (Kyungpook National University);*
- 4 Research on the Influence of Dielectric Material Surface Fidelity and Finish on Scattering Characteristics  
*Jun Gu (Science and Technology on Electromagnetic Scattering Laboratory); Xiao-Bing Wang (Xidian University); Zichang Liang (Science and Technology on Electromagnetic Scattering Laboratory);*
- 5 A New Signal Processing Algorithm for Ultra-wideband Radar Life Detection  
*Liang Wang (Zhejiang University); Yong Wang (Zhejiang University);*
- 6 Analysis of Multi-loop Retrodirective Cross-eye Jamming System for Large Platform  
*Jianrong Lu (National University of Defense Technology); Tianpeng Liu (National University of Defense Technology); Zhen Liu (National University of Defense Technology); Xizhang Wei (National University of Defense Technology); Dongping Liao (National University of Defense Technology);*
- 7 Micro-motion False Target Identification in Random Pulse Initial Phase Radar Based on Compressed Sensing  
*Jinping Sui (National University of Defense Technology); Zhen Liu (National University of Defense Technology); Xiang Li (National University of Defense Technology); Xizhang Wei (National University of Defense Technology); Shuhong Wang (National University of Defense Technology);*
- 8 Detection of Thin Ferromagnetic Layers Based on Faraday Effect  
*Alexander Y. Zherdev (Bauman Moscow State Technical University); Stepan A. Baryshev (Bauman Moscow State Technical University); Sergey B. Odinokov (Moscow Bauman State Technical University); Alexey S. Kuznetsov (Bauman Moscow State Technical University);*
- 9 Optical Binding near a Planar Interface  
*N. A. Kostina (ITMO University); Mihail I. Petrov (ITMO University); Aliaksandra N. Ivinskaya (ITMO University); Andrey A. Bogdanov (ITMO University); Alexander Sergeevich Shalin (Ulyanovsk Branch of the Institute of Radio Engineering and Electronics, Russian Academy of Sciences); Pavel B. Ginzburg (ITMO University);*
- 10 Improving the Sensitivity of Magnetic Sensors by Field Concentration with 3D Metamaterials  
*Rosa Mach-Batlle (Universitat Autònoma de Barcelona); Carles Navau (Universitat Autònoma de Barcelona); Albert Parra (Universitat Autònoma de Barcelona); Jordi Prat-Camps (University of Innsbruck); Nuria Del-Valle (Universitat Autònoma de Barcelona); Alvaro Sanchez (Universitat Autònoma de Barcelona);*
- 11 Linear Momentum Transfer from Swift Electrons to Plasmonic Small Nanoparticles: Dipole Approximation  
*Carlos Maciel Escudero (Universidad Nacional Autónoma de México); Alejandro Reyes Coronado (Universidad Nacional Autónoma de México);*
- 12 Propagation Modeling of Vortex Generalized Airy Beams in Parabolic Fiber  
*Eugene Olegovich Monin (Samara National Research University); A. V. Ustinov (Image Processing Systems Institute of RAS — Branch of the FSRC “Crystallography and Photonics” RAS); Svetlana N. Khonina (Samara State Aerospace University);*
- 13 Study of Conservation of the Topological Charge of Vortex Beams Transferring in a Random Media  
*Eugene Olegovich Monin (Samara National Research University); Mikhail S. Kirilenko (Samara State Aerospace University); Svetlana N. Khonina (Samara State Aerospace University);*
- 14 Diffraction of the Focused Pulsed Laser Beam on a Binary Phase Plates  
*Eugene Olegovich Monin (Samara National Research University); S. V. Krasnov (Samara National Research University); A. V. Ignatyev (Samara National Research University);*
- 15 Generation of Spectral Supercontinuum of More than 2.5 Octaves in a Deuterium Oxide D<sub>2</sub>O Jet  
*Anna A. Borimova (ITMO University); Anton N. Tsyarkin (ITMO University); Sergey E. Putilin (ITMO University); Victor G. Bespalov (ITMO University); Sergey A. Kozlov (ITMO University);*

- 16 Application of Digital Holography in Jamin-Rozhdestvenskiy Interferometer  
*Sergey Pul'kin (St.-Petersburg State University); Vladislav Shoev (St.-Petersburg State University); Alexander Sevryugin (St.-Petersburg Electrotechnical University); Ibrohim Tursunov (St.-Petersburg Electrotechnical University); Dmitrii Venediktov (St.-Petersburg State University); Vladimir Yu. Venediktov (St.-Petersburg Electrotechnical University and St.-Petersburg State University);*
- 17 Digital Holographic Interferometry for the Nanodisplacement Measurement  
*Igor V. Alekseenko (Immanuel Kant Baltic Federal University); M. E. Gusev ("Alorithm-Opto Ltd"); V. I. Redkorechev (R&D Company "Akadempribor", Academy of Science); Andrey Yurievich Zyubin (Immanuel Kant Baltic Federal University); I. G. Samusev (Immanuel Kant Baltic Federal University);*
- 18 Characterization of  $\text{Cu}_2\text{ZnSnSe}_4$  Solar Cells Fabricated by Sputtering with Se Powder Post-selenization  
*Shou-Yi Kuo (Chang Gung University); Fang-I. Lai (Yuan Ze University);*
- 19 Structural Analysis into  $\text{Cu}_2\text{ZnSnSe}_4$  Solar Cell with Short-circuit Current of  $42 \text{ mA/cm}^2$  Prepared by Sequential Evaporation  
*Fang-I. Lai (Yuan Ze University); Shou-Yi Kuo (Chang Gung University);*
- 20 Utilization of Nanojet Effect for Light-trapping in Solar Cells  
*Kseniia V. Baryshnikova (ITMO University); Alaudi Khozbaudievich Denisultanov (ITMO University); A. E. Kovrov (ITMO University); Pavel A. Belov (ITMO University); A. S. Shalin (ITMO University);*
- 21 Broadband Near-perfect Absorption Based on Single-layered and Nonstructured Graphene  
*Fei Gao (National University of Defense Technology); Zhihong Zhu (National University of Defense Technology); Jianfa Zhang (National University of Defense Technology); Chu-Cai Guo (National University of Defense Technology); Ken Liu (National University of Defense Technology); Wei Xu (National University of Defense Technology); Xiao-Dong Yuan (National University of Defense Technology); Shiqiao Qin (National University of Defense Technology);*
- 22 Sensing in the Shortwave Infrared Using Carbon Nanotube  
*Lian-Mao Peng (Peking University);*
- 23 A Dual Circularly Polarized Omnidirectional Receiver Antenna for Satellite Communication  
*Serdar Okuyucu (Yasar University); Ceyhan Turkmen (Yasar University); Mustafa Secmen (Yasar University);*
- 24 Effects of Printed Circuit Board on the Performance of Tag Antennas for Passive RFID  
*Luiz Fernando Taboada Gomes Amaral (Federal University of Bahia); Marcela Silva Novo (UFBA — Federal University of Bahia);*
- 25 Substrate Integrated Waveguide Monopulse Patch Antenna Array  
*Bijan Abbasi-Arand (Tarbiat Modarres University); Mohammad Soleimani (Iran University of Science and Technology); Saeed Kamalzadeh (Iran University of Science and Technology); Amir Zahedi (Tarbiat Modarres University);*
- 26 Design and Implementation of Leaky Wave Antenna with Adjusted Placement of Meandering Long Slot on the Broad Wall of SIW  
*Mahdieh Ghaderi (Tarbiat Modarres University); Bijan Abbasi-Arand (Tarbiat Modarres University);*
- 27 Modeling of Microwave Antenna Array with Magnetoelectric Effect Control  
*Alexander Sergeevich Tatarenko (Novgorod State University); Roman Valer'evich Petrov (Novgorod State University); A. O. Nikitin (Novgorod State University); Mirza Imamovich Bichurin (Novgorod State University);*
- 28 Hybrid Microstrip Patch Antenna for Dual Frequency of Operation  
*Rahul Kumar Garg (The LNM Institute of Information Technology); Smrity Dwivedi (Banaras Hindu University); Raghuvir S. Tomar (The LNM Institute of Information Technology);*
- 29 A Double T-shaped Decoupling Array Antenna with Spiral Shape  
*Yanjie Sun (Harbin Engineering University); Ji-ahe Mei (Harbin Engineering University); Tao Jiang (Harbin Engineering University);*
- 30 Antenna Array Receiver for Television by Satellite  
*Tchanguiz Razban-Haghighi (LUNAM, IETR UMR 6164); Amal Harrabi (ENAC); Yann Mahe (LUNAM, IETR UMR 6164);*
- 31 New Electrical Equivalent Circuit Model of the Inset Fed Rectangular Patch Antenna  
*Wissem Chouchene (University of Tunis El Manar (UTM)); Chiraz Larbi (University of Tunis El Manar (UTM)); Taoufik Aguil (University of Tunis El Manar (UTM));*

- 32 Two Types of Printed Monopoles for Integration into Small Terminals  
*Raul Ribeiro (Instituto Superior Técnico, University of Lisbon); Custodio Peixeiro (Instituto Superior Técnico, University of Lisbon);*
- 33 Textile Yagi Antenna at 1.8 GHz  
*Raul Fernandez-Garcia (Universitat Politecnica de Catalunya); Ignacio Gil (Universitat Politecnica de Catalunya (UPC));*
- 34 Wearable Embroidered GPS Textile Antenna  
*Ignacio Gil (Universitat Politecnica de Catalunya (UPC)); Raul Fernandez-Garcia (Universitat Politecnica de Catalunya);*
- 35 A Low Mutual Coupling MIMO Antenna Using EBG Structures  
*Xiaochao Jiang (Harbin Engineering University); Hengxu Wang (Harbin Engineering University); Tao Jiang (Harbin Engineering University);*
- 36 A Novel Compact Tri-band Antenna for WLAN Application  
*Hengxu Wang (Harbin Engineering University); Jiahe Mei (Harbin Engineering University); Tao Jiang (Harbin Engineering University);*
- 37 A Low Mutual Coupling Array Antenna Based on E-shaped Structure with Spiral  
*Jiahe Mei (Harbin Engineering University); Xiaochao Jiang (Harbin Engineering University); Tao Jiang (Harbin Engineering University);*
- 38 A Compact Dual-band Slot Antenna Based on Koch Fractal Snowflake Annular Ring  
*Mahmood T. Yassen (University of Technology); Mohammed R. Hussan (University of Technology); Hussain A. Hammas (University of Technology); Hussam Al-Saedi (University of Waterloo (UW)); Jawad K. Ali (University of Technology);*
- 39 An Improved Track Segment Association Algorithm Using MM-GNN Method  
*Shengsen Pan (National University of Defense Technology); Qinglong Bao (National University of Defense Technology); Weibing Hou (National University of Defense Technology); Zengping Chen (National University of Defense Technology);*
- 40 Parameter Estimation of Radar Target in Fractional Fourier Domain Based on Compressed Sensing  
*Panhe Hu (National University of Defense Technology); Qinglong Bao (National University of Defense Technology); Zengping Chen (National University of Defense Technology);*
- 41 High Performance Sampling Sub-system Design for Different Applications  
*Qinglong Bao (National University of Defense Technology); Yuting Qiao (National University of Defense Technology); Zengping Chen (National University of Defense Technology);*
- 42 Some Results on Natural Background Radiation in Proximity of Large-scale Earth's Mechanical Strain  
*Karl F. Kaspereck (Energy & Engineering Consultant (CTE));*
- 43 Radar Observations of Small Space Objects of Natural and Artificial Origin with Extended Antenna Fields  
*A. I. Baskakov (National Research University "Moscow Power Engineering Institute"); V. I. Gusevskiy (National Research University "Moscow Power Engineering Institute"); Aleksey Aleksandrovich Komarov (National Research University "Moscow Power Engineering Institute");*
- 44 On the Possibility Use Microwave Radiometers Data for Remote Retrieval of the Evaporation from the Soil Surface  
*Alexandr Sergeevich Yashchenko (Omsk State Pedagogical University); Pavel Petrovich Bobrov (Omsk State Pedagogical University); Krivaltsevitch Sergey Victorovich (Joint-Stock Company "Omskiy Nauchno Issledovatel'skiy Institut Pri-borostroeniya");*
- 45 The Method to Use GPS Observations for Statistical Evaluation of the Diagnostic Slips Level of Total Electron Content at Different Latitudes  
*Victor Ivanovich Zakharov (Lomonosov Moscow State University); Yury Vladimirovich Yasyukevich (Institute of Solar-Terrestrial Physics (ISTP), Siberian Branch of Russian Academy of Sciences); Vladimir Evgenievich Pronin (M. V. Lomonosov Moscow State University);*
- 46 Electromagnetic Property Extraction of Weakly Coupled Bianisotropic Metamaterials  
*Ugur Cem Hasar (University of Gaziantep); Musa Bute (University of Gaziantep); Tolga Ulas Gurbuz (Gaziantep University); Joaquim Jose Barroso (Technological Institute of Aeronautics);*
- 47 Importance of the Bioradar Signal Preprocessing in Fall Detection  
*Maria K. Dremina (Bauman Moscow State Technical University); Irina L. Alborova (Bauman Moscow State Technical University); Lesya N. Anishchenko (Bauman Moscow State Technical University);*

- 49 The Thickness Dependence of the Dielectric Functions and Critical Points of Crystalline WS<sub>2</sub> Ultrathin Films  
*Da-Hai Li (Fudan University); Rongjun Zhang (Fudan University); Yu-Xiang Zheng (Fudan University); Songyou Wang (Fudan University); Liangyao Chen (Fudan University);*
- 50 Analysis of Microstrip Bandstop Filter Characteristic Based on Defected Microstrip Structure  
*Xuemei Zheng (Harbin Engineering University); Hengxu Wang (Harbin Engineering University); Yan-jie Sun (Harbin Engineering University);*
- 51 Feasibility Analysis for Space-borne Implementation of Circular Synthetic Aperture Radar  
*Hai-Ying Cui (Key Laboratory of Microwave Remote Sensing, Chinese Academy of Sciences); Xi-angkun Zhang (National Space Science Center, Chinese Academy of Sciences);*
- 53 Visible Wavelength Metasurfaces by Crystals Silicon  
*Yinyin Li (Sun Yat-sen University); Zhenpeng Zhou (Sun Yat-Sen University); Juntao Li (Sun Yat-sen University);*
- 55 The Finite Difference Time-domain Method for Inverse Coefficient Problem of Electrodynamics  
*Kazizat Iskakov (L.N. Gumilyov Eurasian National University); Ainur Kussainova (L.N. Gumilyov Eurasian National University); Z. Khasanova (L.N. Gumilyov Eurasian National University); Nurgul Uzakkyzy (L.N. Gumilyov Eurasian National University);*
- 56 Non-linear Dynamics of Positional Parameters of the Collimated Coherent Beam at the End of the Long Atmospheric Path  
*Arkadiy Viktorovich Blank (Moscow State M. V. Lomonosov University); Vitaly Vladimirovich Kapranov (S. P. Korolev Rocket and Space Corporation "Energia"); Ruslan Vitalievich Mikhailov (Moscow State M. V. Lomonosov University); Natalia A. Soukhareva (Moscow M. V. Lomonosov State University); Vyacheslav Yuryevich Tugaenko (S. P. Korolev Rocket and Space Corporation "Energia");*
- 61 Knee Structure in Double Ionization of Noble Atoms in Circularly Polarized Laser Fields  
*Jingtao Zhang (Shanghai Normal University);*
- 63 A Design of a Broadband Single Layer Polarization Beam Splitting Reflectarray Using Varying-sized Cross Dipoles  
*Shaojie Yu (Nanjing University of Aeronautics and Astronautics); Hai Feng Zhang (Nanjing University of Aeronautics and Astronautics); Shaobin Liu (Nanjing University of Aeronautics and Astronautics); Bo-Rui Bian (Nanjing University of Aeronautics and Astronautics);*
- 64 A Novel Metasurface-based Low-RCS Fabry-Perot Cavity Antenna  
*Bo-Rui Bian (Nanjing University of Aeronautics and Astronautics); Hai Feng Zhang (Nanjing University of Aeronautics and Astronautics); Shaobin Liu (Nanjing University of Aeronautics and Astronautics); Xiang-Kun Kong (Nanjing University of Aeronautics and Astronautics);*
- 65 Slowing Down DNA Translocation Using Nanopillars Precisely Deposited by Helium Ion Beam  
*Yunjiao Wang (Chongqing Institute of Green and Intelligent Technology, Chinese Academy of Sciences); Yunsheng Deng (Chongqing Institute of Green and Intelligent Technology, Chinese Academy of Sciences); Deqiang Wang (Chongqing Institute of Green and Intelligent Technology, Chinese Academy of Sciences);*
- 67 Comparative Study of Antennas for Microwave Tomography  
*Ilja Merunka (Czech Technical University in Prague); Ondrej Fiser (Czech Technical University in Prague); Jan Vrba (Czech Technical University in Prague); Jan Vrba, Jr. (Czech Technical University in Prague); David Vrba (Czech Technical University in Prague);*
- 68 Doppler Spectrums Based Translational Motion Compensation for Narrowband Radar Imaging  
*Yuling Liu (National University of Defense Technology); Xizhang Wei (National University of Defense Technology); Bo Peng (National University of Defense Technology); Zhen Liu (National University of Defense Technology); Dongping Liao (National University of Defense Technology); Shuhong Wang (National University of Defense Technology);*
- 58 Design of a Slot Antenna for Future 5G Wireless Communication Systems  
*Jun Long Li (South China Normal University); Miao Hui Luo (South China Normal University); Hui Liu (South China Normal University);*

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**Session 2A1****SC3: Advanced Optofluidics: Optical Control and Photonics with Fluid Matter 2**

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**Tuesday AM, May 23, 2017****Room G5**

Organized by Francesco Simoni, Luigino Criante

Chaired by Francesco Simoni, Luigino Criante

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09:00 Bio-integrated Lasers

Invited

*Matjaz Humar (Jozef Stefan Institute);*

09:20 Optofluidics for Artificial Photosynthesis of Glucose Using Sunlight

Invited

*Xuming Zhang (Hong Kong Polytechnic University); Yujiao Zhu (Hong Kong Polytechnic University); Yang Liu (Hong Kong Polytechnic University); Huan Lin (Hong Kong Polytechnic University); Xi-aowen Huang (Hong Kong Polytechnic University);*

09:40 Single-cell Bacterium Identification with a SOI Micro-cavity

Invited

*M. Tardif (University of Grenoble Alpes); J.-B. Jager (CEA & University of Grenoble Alpes); P. R. Marcoux (CEA, LETI-DTBS-SBSC-LCMI/LBAM); B. Cluzel (Laboratoire ICB — Université de Bourgogne Franche-Comte); E. Picard (CEA & University of Grenoble Alpes); E. Hadji (CEA & University of Grenoble Alpes); David Peyrade (CNRS);*

10:00 Refractometric Imaging with Photonic Crystal Slab Sensors

Invited

*Kristian Tolbol Sorensen (Technical University of Denmark); Chen Zhou (Technical University of Denmark); Xiaolong Zhu (Technical University of Denmark); Anders Kristensen (Technical University of Denmark);*

10:20 Glass-embedded Optofluidic Lasers

Invited

*Paolo Spagni (Università Politecnica delle Marche); D. Tricarico (Università Politecnica delle Marche); Silvio Bonfadini (Istituto Italiano di Tecnologia); Sara Lo Turco (Istituto Italiano di Tecnologia); Luigino Criante (Istituto Italiano di Tecnologia); Francesco Simoni (Università Politecnica delle Marche);*

10:40 Dermis as a Distributed 2D Sensor for Optical Monitoring of Blood Flow in Deep Vessels

*Valery V. Zaitsev (ITMO University); Oleg V. Mamonov (Almazov Federal Heart, Blood and Endocrinology Center); Alexei A. Kamshilin (ITMO University);***11:00 Coffee Break**

11:20 Laser Fabrication of Advanced Microfluidic and Optofluidic Devices and Their Applications

Invited

*Hong-Bo Sun (Jilin University); Huan Wang (Jilin University); Yong-Lai Zhang (Jilin University);*

11:40 Recent Advances in Light Driven Phenomena for Applications in Opto-microfluidics Lab-on-chip Platforms

Invited

*Cinzia Sada (University of Padova); Annamaria Zalttron (University of Padova); Giacomo Bettella (University of Padova); Gianluca Pozza (University of Padova); Riccardo Zamboni (University of Padova); Mathieu Chauvet (Université de Franche-Comte);*

12:00 Lab on a Chip Light Control: 3D in-plane Optofluidic Tunable Microlenses

Invited

*M. Natile (Istituto Italiano di Tecnologia); Roberta Ramponi (Institute of Photonics and Nanotechnology (IFN) — CNR); Luigino Criante (Istituto Italiano di Tecnologia);*

12:20 Laser Refractography Methods for Investigation of Diffusion Layer of Liquid Media

*Brnyus S. Rinkevichyus (Moscow Power Engineering Institute); Anastasia V. Vedyashkina (National Research University “Moscow Power Engineering Institute”); Ilia Nikolayevich Pavlov (National Research University “Moscow Power Engineering Institute”); I. L. Raskovskaya (National Research University “Moscow Power Engineering Institute”);*

12:40 Optofluidic Lab-on-chip Platform for Realtime Sensing Applications

*Aleksandr V. Zverev (BMSTU); Anton I. Ivanov (VNIIA); Anastasiia A. Pishchimova (BMSTU); Mikhail Andronik (BMSTU); Vladimir V. Echeistov (BMSTU); Stanislav A. Mikhailov (BMSTU); Ilya A. Ryzhikov (VNIIA); Ilya A. Rodionov (All-Russian Research Institute of Automatics);*

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**Session 2A2****Fundamental Aspects in the Problems of the EM High-frequency Wave Propagation in the Ionosphere 1**

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**Tuesday AM, May 23, 2017****Room G6**

Organized by Nikolay N. Zernov

Chaired by Nikolay N. Zernov, Nikolay Y. Zaalov

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- 09:00 Applying the DWFT Method for Describing Scattered Wave Fields in an Inhomogeneous Plasma  
*Sergei I. Knizhin (Irkutsk State University); M. V. Tinin (Irkutsk State University);*
- 09:20 On Radio Wave Propagation in Multiscale Randomly Inhomogeneous Ionosphere  
*M. V. Tinin (Irkutsk State University); Sergei I. Knizhin (Irkutsk State University);*
- 09:40 Recent Developments of the Hybrid Scintillation Propagation Model of Transionospheric Stochastic Channel  
*Vadim E. Gherm (University of St. Petersburg); Nikolay N. Zernov (Saint Petersburg State University); M. Z. Zakaryayeva (University of St. Petersburg);*
- 10:00 Ionosphere Scintillations at Low and High Latitudes  
*Invited Analysis of Data Recorded in the Frame of ESA Monitor Project Yannick Beniguel (IEEA);*
- 10:20 Advanced Model of HF Radio Waves Propagation Based on Normal Wave Method  
*Maksim Sergeevich Penzin (Institute of Solar-Terrestrial Physics SB RAS); Nikolay V. Ilyin (Institute of Solar-Terrestrial Physics of Siberian Branch of Russian Academy of Sciences); Sergey N. Ponomarchuk (Institute of Solar-Terrestrial Physics SB RAS);*
- 10:40 Exploring the Ionospheric Structures by Radio Tomographic Methods under Different Space Weather Conditions  
*Invited Elena S. Andreeva (M. V. Lomonosov Moscow State University); E. D. Tereshchenko (Polar Geophysical Institute RAS); M. O. Nazarenko (M. V. Lomonosov Moscow State University); I. A. Nesterov (M. V. Lomonosov Moscow State University); Artem M. Padokhin (M. V. Lomonosov Moscow State University); Yulia S. Tumanova (Lomonosov Moscow State University);*
- 11:00 **Coffee Break**
- 11:20 Formation of Ray Trajectories of HF Radiowaves in Artificially and Naturally Disturbed Ionosphere according to Radiotomography and IRI Model Data  
*Elena S. Andreeva (M. V. Lomonosov Moscow State University); Vladimir L. Frolov (Radio Physical Research Institute (NIRFI NNSU)); M. A. Annenkov (M. V. Lomonosov Moscow State University); Artem M. Padokhin (M. V. Lomonosov Moscow State University); Yulia S. Tumanova (Lomonosov Moscow State University);*
- 11:40 Investigation of Direct Variational Approach for the High and Low Ray Finding  
*Igor A. Nosikov (Immanuel Kant Baltic Federal University); M. V. Klimenko (Immanuel Kant Baltic Federal University); P. F. Bessarab (Science Institute of the University of Iceland);*
- 12:00 The Research of Backscatter Ionosphere Sounding Features on the Base of Chirp Ionosonde  
*Sergey N. Ponomarchuk (Institute of Solar-Terrestrial Physics SB RAS); Vladimir Ivanovich Kurkin (Institute of Solar-Terrestrial Physics, Siberian Branch, Russian Academy of Sciences); Maksim S. Pensin (Institute of Solar-Terrestrial Physics SB RAS);*
- 12:20 Large-scale Traveling Ionospheric Disturbances Registered Using Oblique-incidence Sounding over North-Eastern Region of Russian Federation  
*Vera A. Ivanova (Institute of Solar-Terrestrial Physics SB RAS); Vladimir Ivanovich Kurkin (Institute of Solar-Terrestrial Physics, Siberian Branch, Russian Academy of Sciences); Aleksey V. Podlesnyi (Institute of Solar — Terrestrial Physics, Siberian Branch, Russian Academy of Sciences); Sergey N. Ponomarchuk (Institute of Solar-Terrestrial Physics SB RAS); Viktor P. Grozov (Institute of Solar-Terrestrial Physics SB RAS); Anton G. Kim (Institute of Solar-Terrestrial Physics SB RAS); Zinaida P. Dumbava (Institute of Cosmophysical Researches and Radio Wave Propagation FEB RAS); Igor N. Poddelsky (Institute of Cosmophysical Researches and Radio Wave Propagation FEB RAS); Aleksey I. Poddelsky (Institute of Cosmophysical Researches and Radio Wave Propagation FEB RAS);*

### Session 2A3

#### Inverse Design Methods in Detection and Cloaking Problems

Tuesday AM, May 23, 2017

#### Room G7

Organized by Gennady V. Alekseev, Yury V. Shestopalov

Chaired by Gennady V. Alekseev, Yury V. Shestopalov

- 09:00 Inverse Design Method in 3D Electromagnetic Cloaking Problems  
*Gennady V. Alekseev (Institute of Applied Mathematics FEB RAS);*
- 09:20 Optimization Method in Static Magnetic Cloaking Problems  
*Yuliya E. Spivak (Far Eastern Federal University);*

- 09:40 Design of the Boundary Reflection Properties to Minimize the Energy Flows  
*Alyona A. Astrakhantseva (Far Eastern Federal University); Alexander Yu. Chebotarev (Far Eastern Federal University); Andrey E. Kovtanyuk (Far Eastern Federal University);*
- 10:00 Numerical Analysis of 3D Multilayered Cloaking in Static Fields  
*Dmitry A. Tereshko (Institute of Applied Mathematics FEB RAS);*
- 10:20 Mathematical Modeling of Multilayered Radar Absorbing Coating  
*E. D. Derevyanchuk (Penza State University); A. S. Ilyinsky (Moscow State University); A. S. Shutkov (Penza State University); Yury G. Smirnov (Penza State University);*
- 10:40 Inverse Coefficient Problems for Static Maxwell Equations  
*Roman V. Brizitskii (Institute of Applied Mathematics FEB RAS); Zhanna Yu. Saritskaya (Far Eastern Federal University);*
- 11:00 **Coffee Break**
- 11:20 Inverse Design Method for the 2D Problems of Thermal Cloaking  
*Gennady V. Alekseev (Institute of Applied Mathematics FEB RAS); O. V. Soboleva (Far Eastern Federal University); I. V. Piskun (Far Eastern Federal University);*
- 11:40 Optimization Method in Problems of Manipulating DC Currents  
*Gennady V. Alekseev (Institute of Applied Mathematics FEB RAS); Dmitry A. Tereshko (Institute of Applied Mathematics FEB RAS); Tim Seleznev (Far Eastern Federal University); Mikhail Shepelov (Far Eastern Federal University);*
- 12:00 Analysis of the Radiative-conductive Heat Transfer Equations with Unknown Intensity of Heat Sources  
*Alyona A. Astrakhantseva (Far Eastern Federal University); Alexander Yu. Chebotarev (Far Eastern Federal University); Andrey E. Kovtanyuk (Institute for Applied Mathematics FEB RAS);*
- 12:20 Numerical Analysis of Problem of Designing Magnetic Bilayer Cloak  
*Aleksey V. Lobanov (Institute of Applied Mathematics FEB RAS); Yuliya E. Spivak (Far Eastern Federal University);*

- 12:40 Boundary Value and Extremum Problems for the Nonlinear Acoustic Model  
*Zhanna Yu. Saritskaya (Far Eastern Federal University); Roman V. Brizitskii (Institute of Applied Mathematics FEB RAS);*

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#### Session 2A4

#### Advanced Mathematical and Computational Methods in Electromagnetic Theory and Their Applications 2

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Tuesday AM, May 23, 2017

Room G8

Organized by Georgi Nikolov Georgiev, Mariana Nikolova Georgieva-Grosse

Chaired by Mariana Nikolova Georgieva-Grosse

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- 09:00 Diffraction of an Electromagnetic Vortex Bessel Beam  
Invited by the End of a Semi-infinite Magnetized Plasma Cylinder  
*Vasiliy Alekseevich Es'kin (University of Nizhny Novgorod); Alexander V. Kudrin (University of Nizhny Novgorod);*
- 09:20 Laboratorial Tests with Transmission Line Model Based on Modified  $\pi$  Circuits  
*Thaina Guimaraes Pereira (Sao Paulo State University (UNESP), Campus of Sao Joao da Boa Vista); Aghatta Cioquetta Moreira (Sao Paulo State University (UNESP), Campus of Sao Joao da Boa Vista); Afonso Jose Do Prado (UNESP — Universidade Estadual Paulista); Andre Alves Ferreira (Sao Paulo State University (UNESP), Campus of Sao Joao da Boa Vista); Jose Pissolato Filho (UNICAMP — State University of Campinas);*
- 09:40 Scattering of a TM Plane Wave from a Periodic Surface between Different Dielectrics at Low Grazing Incidence  
Invited  
*Akira Komiyama (Osaka Electro-Communication University);*
- 10:00 CICT Phased Generator in Nanoscale EM and BEM Modeling for Stronger Bioengineering Simulation Solutions  
*Rodolfo A. Fiorini (Politecnico di Milano University);*
- 10:20 Calculation of the Frequency-dependent Dielectric Tensor of a Two-dimensional Periodic Composite  
*Yuri A. Godin (University of North Carolina at Charlotte); Boris Vainberg (University of North Carolina at Charlotte);*



- 10:40 The TRIZ-based Tool for the Electrical Machine Development  
*Nikolai Efimov-Soini (Lappeenranta University of Technology); Nikita Uzhegov (SpinDrive);*
- 11:00 **Coffee Break**
- 11:20 Characteristic Mode Analysis Using Reduced Modal Representation of Numerical Green's Function  
*Q. I. Dai (University of Illinois at Urbana-Champaign); H. Gan (University of Illinois at Urbana-Champaign); Weng Cho Chew (University of Illinois);*
- 11:40 Some Features of Electromagnetic Wave Scattering by Radially Inhomogeneous DNG Cylinders  
*Alina R. Gabdullina (Moscow Institute of Physics and Technology); Sergei P. Skobelev (Joint Stock Co Radiophysika); Olga N. Smolnikova (Moscow Aviation Institute);*
- 12:00 General Analysis of the Indispensable Effects of Non-uniform Gain and Loss in Coupled Waveguides System  
*Zhen Zhen Liu (Harbin Institute of Technology); Jun Jun Xiao (Harbin Institute of Technology);*
- 12:20 Machine Learning Based Numerical Computation of  $\mathbf{E}$ -field  
*Yashasvi Agrawal (Indian Institute of Technology Hyderabad); Bharath Sridharan (Indian Institute of Technology Hyderabad); Mohammed Zafar Ali Khan (Indian Institute of Technology);*
- 10:20 Interactive Electromagnetic and Microwave Transmission Line Educational Courseware on iPad  
*Invited Eng Leong Tan (Nanyang Technological University); Ding Yu Heh (Nanyang Technological University); Zai-feng Yang (Nanyang Technological University);*
- 10:40 Measurement of Ferrofluid Dynamics in Undergraduate Physics Laboratory  
*Maria Bondani (Institute for Photonics and Nanotechnology — National Research Council (CNR)); Andrea Bassi (University of Insubria); Alessandro Tucci Bronzuoli (University of Insubria); Giovanni Caiazzo (University of Insubria); Riccardo Carlucci (University of Insubria); Simone Pengue (University of Insubria);*
- 11:00 **Coffee Break**
- 11:20 Four-dimensional Electromagnetic Field Theory  
*Aleksandr K. Tomilin (National Research Tomsk Polytechnic University);*
- 11:40 Integrate Low Frequency Wave Particle Interaction Analyzer  
*Tao Chen (National Space Science Center, Chinese Academy of Science);*
- 12:00 Skin Layer as a Tool for Probing Strongly Absorbing Media  
*Vladimir P. Yakubov (National Research Tomsk State University); Viktor P. Belichenko (National Research Tomsk State University); Kseniya V. Zavyalova (Tomsk State University); Sergey E. Shipilov (National Research Tomsk State University);*
- 12:20 Challenges for Non-destructive Control Methods' Training  
*Radda A. Iureva (ITMO University); Nadezhda K. Maltseva (ITMO University); Aleksandr V. Ilinski (S.I. Vavilov State Optical Institute);*

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### Session 2A5

#### Focus Session: Education for Electromagnetics

**Tuesday AM, May 23, 2017**

#### Room G9

Organized by Ari Sihvola

Chaired by Ari Sihvola

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- 09:30 How Philosophy Could Enrich Physics Teaching:  
Keynote Linking Kuhn's Scientific Revolutions to Threshold Concepts and Transformative Learning  
*Stefan Yoshi Buhmann (University of Freiburg);*
- 10:00 Teaching of Antennas Using 3D Electromagnetic Modelling and Simulation Tool  
*Markus Berg (Centre for Wireless Communications — Radio Technology Research Unit); Tommi Tuovinen (Centre for Wireless Communications — Radio Technology Research Unit);*

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### Session 2A6

#### Remote Sensing Techniques of Earth System Related Components 1

**Tuesday AM, May 23, 2017**

#### Room G10

Organized by Jian-Cheng Shi

Chaired by Leung Tsang, Jian-Cheng Shi

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- 09:00 Microwave Remote Sensing of Snow on Sea Ice with Numerical Simulation of Maxwell's Equation in 3D (NMM3D)  
*Shurun Tan (University of Michigan); Jiyue Zhu (University of Michigan); Leung Tsang (University of Michigan); Son V. Nghiem (California Institute of Technology);*
- 09:20 Analysis of a Long-term Temporal Series of Microwave Emission over Snow Using a Multi-layer Electromagnetic Model  
*E. Santi (National Research Council); Marco Brogioni (Consiglio Nazionale delle Ricerche); Simonetta Paloscia (CNR-IFAC); Paolo Pampaloni (CNR-IFAC); Simone Pettinato (Consiglio Nazionale delle Ricerche); C. Xiong (Institute of Remote Sensing Applications, Chinese Academy of Sciences); A. Crepaz (Avalanche Center);*
- 09:40 First Use of the Meteor-M No. 2/MTVZA-GYa Radiometer for Remote Sensing of Soil Moisture and Temperature in the Arctic Region  
*Konstantin Victorovich Muzalevskiy (Kirensky Institute of Physics, Siberian Branch, Russian Academy of Sciences); Z. Ruzicka (Kirensky Institute of Physics, Siberian Branch, Russian Academy of Sciences); M. G. Zahvatov (SRC "Planeta"); Igor V. Savin (Kirensky Institute of Physics, Siberian Branch, Russian Academy of Sciences); A. Y. Karavaysky (Kirensky Institute of Physics, Siberian Branch, Russian Academy of Sciences);*
- 10:00 Physical Modelling of Vegetation Canopy in Microwave Remote Sensing Using Numerical 3D Solutions of Maxwell Equations  
*Huanting Huang (University of Michigan); Leung Tsang (University of Michigan); Tien-Hao Liao (California Institute of Technology); Eni Gerald Njoku (California Institute of Technology); Andreas Colliander (California Institute of Technology); Kung-Hau Ding (Air Force Research Laboratory, Wright-Patterson AFB);*
- 10:20 Microwave Band Radiative Transfer in the Rain Medium: Implications for Radar Sounding and Radiometry  
*Yaroslav A. Ilyushin (Moscow State University); Boris Georgievich Kutuza (Kotel'nikov Institute of Radio Engineering and Electronics, Russian Academy of Sciences);*
- 10:40 P-band Signals of Opportunity for Remote Sensing of Snow and 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 (Rocky Mountain Research Station, Forest Service, USDA); Chun-Sik Chae (California Institute of Technology);*
- 11:00 **Coffee Break**
- 11:20 Soil Moisture Retrieval Using Dual-frequency Radiometer Observations from WCOM  
*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); Panpan Yao (Institute of Remote Sensing Applications, Chinese Academy of Sciences); Qian Cui (National Space Science Center);*
- 11:40 High-resolution Mapping and Scaling Behavior of Passive L-band Measurements and Soil Moisture Retrieval in Complex Terrain  
*Masih Eghdami (Duke University); Edward J. Kim (NASA Goddard Space Flight Center); Ana P. Barros (Duke University);*
- 12:00 Soil Moisture Retrieval in the North Slope of Alaska From GCOM-W1/AMSR2 and Meteor-M No. 2/MTVZA-GYa Radiometers Data  
*Konstantin Victorovich Muzalevskiy (Kirensky Institute of Physics, Siberian Branch, Russian Academy of Sciences); Z. Ruzicka (Kirensky Institute of Physics, Siberian Branch, Russian Academy of Sciences); M. G. Zahvatov (SRC "Planeta"); R. R. Muskett (University of Alaska); Sergey Viktorovich Fomin (Kirensky Institute of Physics, Siberian Branch, Russian Academy of Sciences);*
- 12:20 Evaluation of the SMAP, SMOS and AMSR2 Retrievals against Observations from Two Soil Moisture Networks on the Tibetan Plateau  
*Yingying Chen (Institute of Tibetan Plateau Research, Chinese Academy of Sciences); Kun Yang (Institute of Tibetan Plateau Research, Chinese Academy of Sciences);*

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**Session 2A7**  
**High Frequency Methods**

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**Tuesday AM, May 23, 2017**

**Room B1**

Organized by Frederic Molinet, Ivan V. Andronov

Chaired by Frederic Molinet, Ivan V. Andronov

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- 09:20 Effect of Multiple Reflections in High-frequency Diffraction by an Elongated Spheroid  
*Ivan V. Andronov (St. Petersburg State University);*
- 09:40 Asymptotic Currents on an Elliptic Cylinder with a Truncated Strongly Elongated Cross-section  
*Frederic Molinet (MOTHE-SIM);*
- 10:00 Method of the Boundary Integral Equation for the Parabolic Equation on a Curved Surface  
*A. V. Shanin (Moscow State University); Andery Igorevich Korolkov (Moscow State University);*
- 10:20 Resonance Scattering of a Plane Electromagnetic Wave by Electric Dipole Located Inside Resonator Formed by Two Parallel Disks  
*Victor V. Zalipaev (Krylov State Research Centre); Stanislav B. Glybowski (ITMO University);*
- 11:00 **Coffee Break**
- 11:20 The Method of Parabolic Equation in Application to Weinstein's Problems  
*A. V. Shanin (Moscow State University); Andery Igorevich Korolkov (Moscow State University);*
- 11:40 Influence of the Longitudinal Inhomogeneity of the Coated Graded-index Planar Waveguide on the Non-linear Modulated Pulse Propagation  
*Michael A. Bisyarin (Saint-Petersburg State University); V. A. Yurkin (Saint-Petersburg State University);*
- 12:00 Decompositions in Gaussian Beams by Wavelet Methods  
*Evgeny Gorodnitskiy (St. Petersburg State University); Maria Perel (St. Petersburg State University);*
- 12:20 Complex-Source Beam Diffraction from a Perfectly Conducting Wedge  
*Giuliano Manara (University of Pisa); Ludger Klinkenbusch (Christian-Albrechts-Universitat zu Kiel);*

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**Session 2A8a**

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**MS-1: Mini-symposium on Nanophotonics and Metamaterials 2**

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**Tuesday AM, May 23, 2017**

**Room B5**

Organized by Pavel A. Belov, Andrey A. Bogdanov

Chaired by Mihail I. Petrov

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- 09:00 Highly Efficient Optical Heating of Non-plasmonic Nanoparticles  
*G. P. Zograf (ITMO University); Mihail I. Petrov (ITMO University); Dmitry A. Zuev (ITMO University); V. A. Milichko (ITMO University); Sergey Makarov (ITMO University);*
- 09:20 Multifunctional Sensing with Hybrid Nanophotonic Structures  
*Dmitry A. Zuev (ITMO University); D. G. Baranov (Moscow Institute of Physics and Technology); G. P. Zograf (ITMO University); S. V. Makarov (ITMO University); K. V. Volodina (ITMO University); A. A. Krasilin (ITMO University); I. S. Mukhin (ITMO University); P. A. Dmitriev (ITMO University); V. V. Vinogradov (ITMO University); V. A. Milichko (ITMO University); E. A. Pidko (ITMO University);*
- 09:40 Invisibility Cloaking of a High-index Dielectric Cylinder via Fano Resonances  
*Mikhail V. Rybin (National Research University for Information Technology, Mechanics and Optics); Dmitry S. Filonov (National Research University of Information Technologies, Mechanics and Optics (ITMO)); K. B. Samusev (Lofte Physics-Technical Institute of the Russian Academy of Science);*
- 10:00 Metasurfaces with Fractal Coding of the Far-field Radiation Pattern  
*Samaneh Moeini (Universidade de Aveiro); Tie Jun Cui (Southeast University);*
- 10:20 Crystalline Structure Dependence on Optical Properties of Silver Thin Film Over Time  
*Aleksandr S. Baburin (BMSTU); Anton I. Ivanov (VNIIA); Ilya A. Ryzhikov (VNIIA); Igor V. Trofimov (VNIIA); Aidar R. Gabidullin (VNIIA); Dmitry O. Moskalev (BMSTU); Yuri V. Panfilov (Bauman Moscow State Technical University); Ilya A. Rodionov (All-Russian Research Institute of Automatics);*

- 10:40 Resonant Bragg Diffraction in AsSb-AlGaAs Metamaterial Structures  
*Vitalii Ushanov (Ioffe Institute); Vladimir V. Chaldyshev (Ioffe Institute); Valeriy Preobrazhenskiy (Rzhanov Institute of Semiconductor Physics); Michael Putyato (Rzhanov Institute of Semiconductor Physics); Boris Semyagin (Rzhanov Institute of Semiconductor Physics);*
- 11:00 **Coffee Break**

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### Session 2A8b

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

**Tuesday AM, May 23, 2017**

**Room B5**

Chaired by Sergei A. Tretyakov, Andrey A. Bogdanov

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- 11:20 Light Scattering Characteristics of a Small Sphere: Resonant and Directive Scattering Conditions  
*Dimitrios C. Tzarouchis (Aalto University); Pasi Yla-Oijala (Aalto University); Ari Sihvola (Aalto University);*
- 11:40 Electromagnetic Forces in Negatively Refracting Photonic Crystals  
*Angeleene S. Ang (ITMO University); Sergey Vladimirovich Sukhov (Institute of Radio Engineering and Electronics of Russian Academy of Sciences); Aristide Dogariu (University of Central Florida); Alexander Sergeevich Shalin (Ulyanovsk Branch of the Institute of Radio Engineering and Electronics, Russian Academy of Sciences);*
- 12:00 Wide Range Plasma Equation of State  
*Alexander A. Belov (Lomonosov Moscow State University); Nikolay N. Kalitkin (Keldysh Institute of Applied Mathematics); Ivan A. Kozlitin (Lomonosov Moscow State University); Konstantin I. Lutskiy (National Research University of Electronic Technology);*
- 12:20 Effective Conductivity Tensor of Plasmonic Anisotropic Metasurface: Theory and Experiment  
*Oleh Y. Yermakov (ITMO University); I. S. Mukhin (ITMO University); Anton K. Samusev (ITMO University); Andrey A. Bogdanov (ITMO University); Ivan V. Iorsh (ITMO University);*
- 12:40 2D-plasmons in a Random Impedance Network Model of Disordered Nanocomposites  
*Nikita A. Olekhno (Ioffe Institute); Y. M. Beltukov (Ioffe Institute);*

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### Session 2A9

#### Antennas and Front-end Systems for Radio Astronomy Instrumentation

**Tuesday AM, May 23, 2017**

**Room B3**

Organized by Nima Razavi-Ghods

Chaired by Nima Razavi-Ghods

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- 09:00 Phased Arrays Feed Implemented with Analogue Beamforming and True Time Delay Lines  
*Keith Grainge (The University of Manchester); Lei Liu (The University of Manchester);*
- 09:20 Crossed Ring Antenna for Dense Aperture Arrays  
*Yongwei Zhang (The University of Manchester); Ahmed El-Makadema (The University of Manchester); Ming Yang (The University of Manchester); Anthony Keith Brown (The University of Manchester);*
- 09:40 Improved CDS Interleaved Linear Array  
*Bambang Dewandaru (University of Indonesia); Fitri Yuli Zulkifli (University of Indonesia); Eko Tjipto Rahardjo (Universitas Indonesia);*
- 10:00 Sparse-regular Aperture Array SKA Telescope Concept  
*Jan Geralt Bij De Vaate (R&D, ASTRON); David Bruce Davidson (University of Stellenbosch); Nima Razavi-Ghods (University of Cambridge);*
- 10:20 HERA RF and Calibration System Design  
*Nima Razavi-Ghods (University of Cambridge); Steve H. Carey (University of Cambridge); John A. Ely (University of Cambridge); Paul F. Scott (University of Cambridge);*
- 10:40 SKALA-3; Design Optimization to Reduce the Chromatic Effects on SKA1-Low Observations  
*Eloy De Lera Acedo (University of Cambridge); Brett Wakley (Cambridge Consultants);*
- 11:00 **Coffee Break**
- 11:20 Inclusion of Signal and Noise Coupling in Sparse Wideband Array Synthesis  
*Ha Bui Van (Universite Catholique de Louvain); Christophe Craeye (Universite Catholique de Louvain); Nima Razavi-Ghods (University of Cambridge);*
- 11:40 The Comparison of the Characteristics of the Double-ridged Horn Antennas Depending the Geometry of Ridge Profiles for Wideband Application  
*Abdullah Genc (Suleyman Demirel University); Ibrahim Bahadir Basyigit (Akdeniz University); Tuna Goksu (Suleyman Demirel University); Selcuk Helhel (Akdeniz University);*

- 12:00 Design of Rectangular Patch Antenna Array for 5G Wireless Communication  
*Saeed Ur Rahman (Nanjing University of Aeronautics and Astronautics (NUAA)); Qunsheng Cao (Nanjing University of Aeronautics and Astronautics); Ishfaq Hussain (Nanjing University of Aeronautics and Astronautics); Hisham Khalil (The University of Lahore); Muhammad Zeeshan (Beijing Institute of Technology); Waseem Nazar (Department of Technology);*

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**Session 2A\_10**

**SC2: Recent Advances of Metamaterials for Novel Electromagnetic and Photonic Devices**

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**Tuesday AM, May 23, 2017**

**Room R11**

Organized by Yungui Ma, Sailing He

Chaired by Sailing He

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- 09:00 Negative Permeability in Magnetostatics: Theory and Experimental Realization  
*Invited Rosa Mach-Batlle (Universitat Autònoma de Barcelona); Albert Parra (Universitat Autònoma de Barcelona); Carles Navau (Universitat Autònoma de Barcelona); Nuria Del-Valle (Universitat Autònoma de Barcelona); Alvaro Sanchez (Universitat Autònoma de Barcelona);*
- 09:20 High Performance Organic Optoelectronic Devices Enabled by Electrode Micronanostructurings  
*Invited Hong-Bo Sun (Jilin University); Xu-Lin Zhang (Jilin University); Jing Feng (Jilin University);*
- 09:40 Interference between Multipolar Modes in Spoof Plasmonic Metadimer  
*Invited Fei Gao (Nanyang Technological University); Zhen Gao (Nanyang Technological University); Yu Luo (Nanyang Technological University); Baile Zhang (Nanyang Technological University);*
- 10:00 Lossy and Gain Metasurfaces for Applications of Antireflection Coatings and Parity-time-symmetric Systems  
*Invited Jie Luo (Suzhou University); Jensen Li (University of Birmingham); Yun Lai (Soochow University);*
- 10:20 Unidirectional Single Photon Generation Via Matched Zero-index Metamaterials  
*Invited Jing-Ping Xu (Zhejiang University); Ge Song (Tongji University); Zhenqing Zhang (Tongji University); Yaping Yang (Tongji University); Hong Chen (Tongji University); M. Suhail Zubairy (Texas A&M University); Shiyao Zhu (Zhejiang University);*

- 10:40 Frequency Tunable Directive Antenna by Ferromagnetic Photonic Crystals  
*Invited Zhong-Hao Sa (Nanjing University); Qun Lou (Nanjing University); Qing-Bo Li (Nanjing University); Chao Xiao (Nanjing University); Rui-Xin Wu (Nanjing University);*
- 11:00 **Coffee Break**
- 11:20 Mimicking General Relativity through Plasmonic Spin Hall Effect  
*Invited Fan Zhong (Nanjing University); Hui Liu (Nanjing University); Shi-Ning Zhu (Nanjing University); Jensen Li (University of Birmingham);*
- 11:40 Electromagnetic and Acoustic Lenses Designed with Metamaterials  
*Invited Bin Zheng (Zhejiang University); Rongrong Zhu (Zhejiang University); Yangyang Deng (Zhejiang University); Huaping Wang (Zhejiang University); Tianhang Chen (Zhejiang University); Shahram Dehdashti (Zhejiang University); Hongsheng Chen (Zhejiang University);*
- 12:00 Ultra-wide Tuning Frequency Range of a Ferrite-based Metamaterial Microwave Absorber  
*Invited Wei Li (Wuhan University of Technology); Jia Wei (Wuhan University of Technology); Tianlong Wu (Wuhan University of Technology); Dawei Hu (Wuhan University of Technology); Yukun Li (Wuhan University of Technology); Jie Cao (Wuhan University of Technology); Jianguo Guan (Wuhan University of Technology);*
- 12:20 High Temperature Hyperbolic Metamaterial for Selective Thermal Emission  
*Alexander Yu. Petrov (Hamburg University of Technology); Pavel N. Dyachenko (Hamburg University of Technology); Sean Molesky (University of Alberta); Slawa Lang (Hamburg University of Technology); Michael Stormer (Helmholtz-Zentrum Geesthacht); T. Krekeler (Electron Microscopy Unit); M. Ritter (Electron Microscopy Unit); Jacob Zubin (University of Alberta); Manfred Eich (Hamburg University of Technology);*

**Session 2A\_11****FocusSession.SC3: Nanolasers: Physics, Technology, Applications 1****Tuesday AM, May 23, 2017****Room R10**

Organized by Eli Kapon

Chaired by Eli Kapon

09:00 Nanolasers: Physics, Technology and Applications: An  
Invited Introduction

*Eli Kapon (Ecole Polytechnique Federale de Lausanne (EPFL));*

09:20 Noise in Nanocavity Lasers and the Role of the Purcell  
Invited Effect

*Jesper Mork (Technical University of Denmark);*

09:40 Non-classical Light Emission and Superradiant Emit-  
Invited ter Coupling in Semiconductor Nanolasers

*Frank Jahnke (University of Bremen);*

10:00 Collective Effects in Nanolasers: Beyond the Rate  
Invited Equation Approach

*Igor E. Protsenko (Lebedev Physical Institute); Emil Cortes Andre (Technical University of Denmark); Martijn Wubs (Technical University of Denmark); Alexander V. Uskov (Lebedev Physical Institute); Jesper Mork (Technical University of Denmark);*

10:20 Coherence and Photon Dynamics in Meso- and  
Invited Nanolasers

*Tao Wang (INRS-EMT); D. Aktas (Universite Cote Azur); G. P. Puccioni (Istituto Sistemi Complessi, CNR); O. Alibart (Universite Cote Azur); Jesper Mork (Technical University of Denmark); E. Picholle (Universite Cote Azur); S. Tanzilli (Universite Cote Azur); Gian Luca Lippi (Universite Cote Azur);*

10:40 Collective Effects in Nanolasers: An Analytical  
Fourier Approach

*Emil Cortes Andre (Technical University of Denmark); Igor E. Protsenko (Lebedev Physical Institute); Jesper Mork (Technical University of Denmark); Martijn Wubs (Technical University of Denmark);*

11:00 **Coffee Break**

11:20 Radiative and Nonradiative Recombination in  
Invited NanoLEDs and Nanolasers

*Andrea Fiore (Eindhoven University of Technology); B. Romeira (Eindhoven University of Technology); V. Dolores-Calzadilla (Eindhoven University of Technology); Aura Higuera-Rodriguez (Eindhoven University of Technology); S. Birindelli (Eindhoven University of Technology); F. Pagliano (Eindhoven University of Technology); Peter J. van Veldhoven (Eindhoven University of Technology); E. Smalbrugge (Eindhoven University of Technology); L. Black (Eindhoven University of Technology); W. M. M. Kessels (Eindhoven University of Technology); D. Heiss (Eindhoven University of Technology); Meint K. Smit (Technical University of Eindhoven);*

11:40 Single Quantum Dot Lasing Effects in the Strong Cou-  
Invited pling Regime

*F. Gericke (Technische Universitat Berlin); Christopher Gies (Universitat Bremen); P. Gartner (Universitat Bremen); S. Holzinger (Technische Universitat Berlin); C. Hopfmann (Technische Universitat Berlin); T. Heindel (Technische Universitat Berlin); J. Wolters (Technische Universitat Berlin); C. Schneider (Universitat Wurzburg); M. Florian (Universitat Bremen); F. Jahnke (Universitat Bremen); Sven Hofling (Universitat Wurzburg); Martin Kamp (University of Wurzburg); Stephan Reitzenstein (Technische Universitat Berlin);*

12:00 Photon Statistics at the Mesoscale Laser Threshold  
*T. Wang (INRS-EMT); G. P. Puccioni (Istituto Sistemi Complessi, CNR); Gian Luca Lippi (Universite Cote Azur);*

12:20 Coherence Properties of High- $\beta$  Metallic Nanolasers  
Invited

*Mercedeh Khajavikhan (University of Central Florida); William Hayenga (University of Central Florida); Hipolito Garcia-Gracia (University of Central Florida); Hossein Hodaei (University of Central Florida); Christian Reimer (INRS-EMT); Roberto Morandotti (INRS-EMT); Patrick LiKamWa (University of Central Florida);*

12:40 High-beta GaN Nanobeam Lasers: Fabrication, Characterization and Coherence Properties

*Raphael Butte (Ecole Polytechnique Federale de Lausanne); Ian M. Rousseau (Ecole Polytechnique Federale de Lausanne); Noelia Vico Trivino (Ecole Polytechnique Federale de Lausanne); Stefan T. Jagsch (Technische Universität Berlin); Gordon Callsen (Technische Universität Berlin); Stefan Kalinowski (Technische Universität Berlin); Irene Sanchez-Arribas (Ecole Polytechnique Federale de Lausanne); Jean-Francois Carlin (Ecole Polytechnique Federale de Lausanne); Axel Hoffmann (Technische Universität Berlin); Stephan Reitzenstein (Technische Universität Berlin); Nicolas Grandjean (Ecole Polytechnique Federale de Lausanne);*

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### Session 2A.12

#### Integrated and Fiber-based Photonic Circuits and Devices 1

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**Tuesday AM, May 23, 2017**

**Room R9**

Organized by Alexander S. Sigov, Mikhail E. Belkin

Chaired by Alexander S. Sigov, Mikhail E. Belkin

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09:00 Optical Fibres with Arrays of FBG: Properties and Application

*Sergei M. Popov (Kotel'nikov Institute of Radio-Engineering and Electronics of RAS); Oleg V. Butov (Kotel'nikov Institute of Radio-Engineering and Electronics of RAS); Alexander O. Kolosovskiy (Kotel'nikov Institute of Radio-Engineering and Electronics of RAS); Victor V. Voloshin (Kotel'nikov Institute of Radio-Engineering and Electronics of RAS); Igor L. Vorob'ev (Kotel'nikov Institute of Radio-Engineering and Electronics of RAS); Mikhail Yu. Vyatkin (Kotel'nikov Institute of Radio-Engineering and Electronics of RAS); Andrei A. Fotiadi (University of Mons); Yuri K. Chamorovskiy (Kotel'nikov Institute of Radio-Engineering and Electronics of RAS);*

09:20 300 Mbps Photonic QPSK Modulator for Space Applications

*Jognes Panasiewicz Junior (National Institute for Space Research — INPE); Larissa Aguiar Dantas de Britto (Sao Jose dos Campos); Gefeson Mendes Pacheco (Aeronautics Technical Institute);*

09:40 The Minimisation of Phase Errors in MMI Devices  
*Laurence Walter Cahill (La Trobe University);*

10:00 An Integrated Multi-wavelength Tunable Ultra-narrow Bandwidth Filter Based on Lithium Niobate  
*Yao Yuan (Tianjin University of Technology); Ailing Zhang (Tianjin University of Technology);*

10:20 Tunable Microwave Optoelectronic Oscillator with Spin-wave Filter for Spurious Tone Suppression  
*Vitaliy V. Vitko (Saint Petersburg Electrotechnical University "LETI"); Andrey A. Nikitin (Saint Petersburg Electrotechnical University "LETI"); Alexey B. Ustinov (Saint Petersburg Electrotechnical University "LETI"); Boris A. Kalinikos (Saint Petersburg Electrotechnical University "LETI");*

10:40 Characterization of X-band Analog-to-digital Converter Based on High-order Harmonic-repetition-rate Passively Mode-locked Fiber Laser and Photonic Sub-sampling Techniques

*Mikhail E. Belkin (Moscow Technological University MIREA); Alexey V. Andrianov (Institute of Applied Physics, Russian Academy of Sciences); I. V. Gladyshev (Moscow Technological University MIREA); Arkady V. Kim (Institute of Applied Physics, Russian Academy of Sciences);*

11:00 **Coffee Break**

11:20 Model of an Active Optoelectronic Switchable Element for Integrated Photonics-based Optical Beam-forming Network

*Mikhail E. Belkin (Moscow Technological University MIREA); Vladislav Golovin (Sevastopol State University (SevSU)); Yuri Tyschuk (Sevastopol State University (SevSU)); Alexander S. Sigov (Moscow Technological University MIREA);*

11:40 Self-generation of Chaotic and Noise Signals in Microwave Photonic Oscillator

*Alexander V. Kondrashov (St. Petersburg Electrotechnical University); Alexey B. Ustinov (Saint Petersburg Electrotechnical University "LETI"); Boris A. Kalinikos (Saint Petersburg Electrotechnical University "LETI");*

12:00 Short-cavity DFB Fiber Lasers

*Oleg V. Butov (Kotel'nikov Institute of Radio Engineering and Electronics of RAS); A. A. Rybaltovskiy (Kotel'nikov Institute of Radio Engineering and Electronics of RAS); M. Yu. Vyatkin (Kotel'nikov Institute of Radio Engineering and Electronics of RAS); A. P. Bazakutsa (Kotel'nikov Institute of Radio Engineering and Electronics of RAS); Sergei M. Popov (Kotel'nikov Institute of Radio-Engineering and Electronics of RAS); Yu. K. Chamorovskiy (Kotel'nikov Institute of Radio Engineering and Electronics of RAS); K. M. Golant (Kotel'nikov Institute of Radio Engineering and Electronics of RAS);*

- 12:20 Ultrafast Shaping of Microwave Single-cycle Pulses in Non-stationary Transmission Lines (Exactly Solvable Model)  
*Alexander Borisovich Shvartsburg (Joint Institute for High Temperatures, Russian Academy of Sciences); N. V. Silin (Far Eastern Federal University); L. Vazquez (Universidad Complutense);*

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**Session 2A.13a**

**SC3: Ultrafast Nonlinear Optics: Ultrafast Fiber Lasers and Nonlinear Applications**

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**Tuesday AM, May 23, 2017**

**Room R8**

Organized by Michelle Y. Sander, Zhiwen Liu

Chaired by Michelle Y. Sander, Jungwon Kim

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- 09:00 New Developments in Passively Mode-locked Fibre  
 Invited Lasers

*Neil G. R. Broderick (The University of Auckland); John D. Harvey (The University of Auckland); Julie Kho (The University of Auckland); Richard Provo (Auckland University/Southern Photonics Ltd.); Patrick G. Bowen (The University of Auckland);*

- 09:20 Hybrid Mode-locked Erbium-doped All-fiber Ring Laser with High-density Well-aligned Single-walled Carbon Nanotubes

*Dmitriy A. Dvoretzkiy (Bauman Moscow State Technical University); Stanislav Grigorievich Sazonkin (Bauman Moscow State Technical University); I. O. Orekhov (Bauman Moscow State Technical University); I. S. Kudelin (Bauman Moscow State Technical University); A. B. Pnev (Bauman Moscow State Technical University); V. E. Karasik (Bauman Moscow State Technical University); L. K. Denisov (Bauman Moscow State Technical University); S. G. Lyapin (Institute for High Pressure Physics of the Russian Academy of Sciences); V. A. Davydov (Institute for High Pressure Physics of the Russian Academy of Sciences);*

- 09:40 Theoretical Aspects of a Pulse Repetition Rate Stabilization in the Er-doped All-fiber Hybridly Mode-locked Similariton-like Ring Laser

*S. O. Leonov (Bauman Moscow State Technical University); V. A. Lazarev (Bauman Moscow State Technical University); Vasilii S. Voropaev (Bauman Moscow State Technical University); M. K. Tarabrin (Bauman Moscow State Technical University); Valeriy E. Karasik (Bauman Moscow State Technical University); A. A. Krylov (Fiber Optics Research Center of the Russian Academy of Sciences);*

- 10:00 Generation of Highly-chirped Dissipative Solitons in  
 Invited Er-doped All-fiber Oscillator

*Innokentiy S. Zhdanov (Novosibirsk State University); Denis S. Kharenko (Institute of Automation and Electrometry, SB, RAS); E. V. Podivilov (Institute of Automation and Electrometry, Siberian Branch, Russian Academy of Sciences); Sergey A. Babin (Institute of Automation and Electrometry SB RAS); A. A. Apolonski (Ludwig-Maximilians-Universitaet Muenchen and Max-Planck-Institut fuer Quantenoptik); A. E. Bednyakova (Novosibirsk State University); Mikhail P. Fedoruk (Novosibirsk State University); S. K. Turitsyn (Aston University);*

- 10:20 Exploration of Unique Mode-locked States in Femtosecond Tm/Ho Co-doped Soliton Fiber Lasers  
 Invited

*Michelle Y. Sander (Boston University);*

- 10:40 Fiber-loop Optical-microwave Phase Detector  
 Invited (FLOM-PD) and Its Applications in Ultrafast Science and Microwave Photonics

*Jungwon Kim (KAIST);*

**11:00 Coffee Break**

- 11:20 Superresolved and Spectroscopic Nonlinear Imaging  
 Invited Using Space-time Illumination Light Modulation

*Randy A. Bartels (Colorado State University); Keith Wernsing (University of Colorado at Boulder); Patrick Stockton (Colorado State University); Dave Smith (Colorado State University); Jeff Field (Colorado State University); Jeff A. Squier (Colorado School of Mines);*

- 11:40 Nonlinear Laser Lithography: From Basic Science to  
 Invited Applications

*Onur Tokel (Bilkent University);*



**Session 2A\_13b****SC3: Ultrafast Nonlinear Optics: Nonlinear Sources and Materials 1****Tuesday AM, May 23, 2017****Room R8**

Organized by Michelle Y. Sander, Zhiwen Liu

Chaired by Michelle Y. Sander, Jungwon Kim

12:00 Ultrafast [Femtoseconds-Picoseconds] Nonlinear Optical Keynotics with Extraordinarily Large Nonlinearities of Liquid Crystalline Photonic Crystals

*Iam-Choon Khoo (Pennsylvania State University); Chun-Wei Chen (Pennsylvania State University); Yizhu Chen (Pennsylvania State University); Zhiwen Liu (Pennsylvania State University);*

12:30 Strategies for High Efficiency, High Energy, Multi-cycle THz-wave Generation

*Michael Hemmer (Deutsches Elektronen Synchrotron); Giovanni Cirri (Deutsches Elektronen-Synchrotron DESY); K. Ravi (Deutsches Elektronen Synchrotron); F. Reichert (University of Hamburg); F. Ahr (Deutsches Elektronen Synchrotron); Anne-Laure Calendron (DESY); Huseyin Cankaya (Deutsches Elektronen Synchrotron); Damian N. Schimpf (DESY); Luis E. Zapata (Deutsches Elektronen Synchrotron); Oliver D. Mucke (Deutsches Elektronen-Synchrotron DESY, Center for Free-Electron Laser Science (CFEL)); N. H. Matlis (Deutsches Elektronen Synchrotron); Franz X. Kartner (Deutsches Elektronen-Synchrotron DESY);*

**Session 2A\_14a****Oral Presentations for Best Student Paper Awards — SC4: Antennas and Microwave Technologies****Tuesday AM, May 23, 2017****Room B4**

Chaired by Jan Vrba, Malay Ranjan Tripathy

09:00 About the Phase Sensors in the Receiving-transmission Paths of Laser Systems

*Aleksandr Vladimirovich Averchenko (Lomonosov Moscow State University); Alexei Mikhailovich Zotov (Lomonosov Moscow State University); Pavel Vasil'evich Korolenko (Lomonosov Moscow State University);*

09:20 On-chip Grounded CPW Line Model with Anomalous Skin Effect in THz Band

*Hideshi Kakiuchi (Kagoshima University); Yuta Sakiyama (Kagoshima University); Kenjiro Nishikawa (Kagoshima University);*

09:40 A Simple Method for On-wafer Antenna Gain Measurement

*Jianfang Zheng (Aalto University); Juha Alalaurinaho (Aalto University); Antti V. Raisanen (Aalto University);*

10:00 Lens Antenna Design for E-band Point-to-Point Radio Links

*Sabin Kumar Karki (Aalto University); Juha Alalaurinaho (Aalto University); Ville Viikari (Aalto University); Risto Valkonen (Nokia Networks);*

10:20 Wireless Power Transfer through Multipole Coupling in Dielectric Resonators

*Mingzhao Song (ITMO University); Pavel A. Belov (ITMO University); Polina V. Kapitanova (ITMO University); Constantin R. Simovski (Aalto University);*

10:40 A Compact Dual-band GCPW-fed Antenna for WLAN, WiMAX and Bluetooth Applications

*Goksenin Bozdog (Izmir Institute of Technology); Alp Kustepeli (Izmir Institute of Technology);*

11:00 **Coffee Break**

**Session 2A\_14b****Oral Presentations for Best Student Paper Awards — SC5: Remote Sensing, Inverse Problems, Imaging, Radar and Sensing****Tuesday AM, May 23, 2017****Room B4**

Chaired by Qing Huo Liu

11:20 Application of Atomic and R-functions in Numerical Methods for Inversion of the Radon Transform

*K. A. Budunova (Bauman Moscow State Technical University); Yaroslav Yu. Kononov (Bauman Moscow State Technical University); Oleg V. Kravchenko (Scientific and Technological Center, Unique Instrumentation, RAS);*

11:40 Modelling the Behaviour of an Open-ended Coaxial Probe to Assess the Permittivity of Heterogeneous Dielectrics Solids

*Vincent Guillard (EDF R&D); Frederic Taillade (EDF R&D); Jean-Paul Balayssac (Universite de Toulouse); Barthelémy Steck (EDF R&D); Julien Sanahuja (EDF R&D); Fabrice Deby (LMDC Toulouse);*

- 12:00 Microwave Hyperthermia System for Head and Neck Area with Noninvasive UWB Temperature Change Detection  
*Ondrej Fiser (Czech Technical University in Prague); Ilja Merunka (Czech Technical University in Prague); Jan Vrba (Czech Technical University in Prague);*
- 12:20 Non-linear Dynamics of Positional Parameters of the Collimated Coherent Beam at the End of the Long Atmospheric Path  
*Arkadiy Viktorovich Blank (Moscow State M. V. Lomonosov University); Vitaly Vladimirovich Kapranov (S. P. Korolev Rocket and Space Corporation "Energia"); Ruslan Vitalievich Mikhailov (Moscow State M. V. Lomonosov University); Natalia A. Soukhareva (Moscow M. V. Lomonosov State University); Vyacheslav Yuryevich Tugaenko (S. P. Korolev Rocket and Space Corporation "Energia");*
- 12:40 Development of a Prototype of Applicator Based on 16 Antennas for Hyperthermia Treatments in the Head and Neck Region  
*Rosario del Pilar Orna Pisconte (Pontificia Universidad Catolica del Peru); Manuel A. Yarleque Medina (Pontificia Universidad Catolica del Peru, Seccion Telecomunicaciones);*
- 4 Propagation of Guided Waves in Moving Media with Application to the Theory of Small-scale Electromagnetic Waves in the Solar Wind Plasma  
*A. V. Guglielmi (Institute of Physics of the Earth RAS); Alexandr S. Potapov (Institute of Solar-Terrestrial Physics SB RAS);*
- 5 Searching for an Alternative Method of the Ionosphere Monitoring  
*Alexandr S. Potapov (Institute of Solar-Terrestrial Physics SB RAS); T. N. Polyushkina (Institute of Solar-Terrestrial Physics SB RAS); B. Tsegmed (Institute of Astronomy and Geophysics MAS); Alexey V. Oinats (Institute of Solar-Terrestrial Physics SB RAS); A. Yu. Pashinin (Institute of Solar-Terrestrial Physics SB RAS); Ilya K. Edemskiy (Institute of Solar-Terrestrial Physics (ISTP), Siberian Branch of Russian Academy of Sciences); Anna A. Mylnikova (Institute of Solar-Terrestrial Physics (ISTP), Siberian Branch of Russian Academy of Sciences); Konstantin G. Ratovsky (Institute of Solar-Terrestrial Physics SB RAS);*
- 6 High Resolution Radar Imaging for FPGA based Millimeter Wave Radar  
*Sumin Kim (Yonsei University); Tae-Yun Lee (Yonsei University); Se-Yeon Jeon (Yonsei University); Jeongbae Kim (Yonsei University); Min-Ho Ka (Yonsei University);*

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**Session 2A0**
**Poster Session 3**


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**Tuesday AM, May 23, 2017**
**9:00 AM - 13:00 AM**
**Room B2**


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- 1 The Mesosphere and the Lower Thermosphere Diagnostics by the Method of the Resonant Scattering of Radio Waves on Artificial Periodic Irregularities of the Ionospheric Plasma  
*Nataliya V. Bakhmetieva (Nizhniy Novgorod State University (NIRFI UNN)); Vladimir V. Frolov (Radio Physical Research Institute (NIRFI NNSU));*
- 2 Light Trapping and Perfect Absorption in Gold Nanogroves  
*Junpeng Guo (University of Alabama in Huntsville); Zhitong Li (University of Alabama in Huntsville); Hong Guo (University of Alabama in Huntsville);*
- 3 Wide Bandwidth Left-handed Circularly Polarized Printed Antenna with Crescent Slot  
*Farohaji Kurniawan (Chiba University); Josaphat Tetuko Sri Sumantyo (Chiba University); Gunawan Setyo Prabowo (National Institute of Aeronautics and Space); Achmad Munir (Institut Teknologi Bandung);*
- 7 Dual UWB Bandstop Filter Based on M-shaped Defected Microstrip Structure  
*Xuemei Zheng (Harbin Engineering University);*
- 8 Hyper-chaos Mode in the Mutual Coupled and Partial Stable Microwave Oscillators System  
*Sergey S. Novikov (Tomsk State University);*
- 9 Complex Photonic Films Used as External Diffractive 3D Photonic Crystals to Improve Blue OLEDs  
*Michal Mruczkiewicz (Adam Mickiewicz University); F. Dumur (University of Bordeaux); Mathias Perrin (Laboratoire Ondes et Matière d'Aquitaine); A. Bertrand (Universite de Pau et des Pays de l'Adour); Stephane Reculsa (Université Bordeaux I); C. Dagron-Lartigau (Universite de Pau et des Pays de l'Adour); A. Bousquet (Universite de Pau et des Pays de l'Adour); L. Vignau (University of Bordeaux); L. Billon (Universite de Pau et des Pays de l'Adour); Sophie Fasquel (University of Bordeaux);*

- 10 Low-profile Planar Multiport Elliptical Patch Antenna for Wireless Communication Applications  
*Sara Mahmoud Abd El Hamid (Arab Academy for Science, Technology and Maritime Transport); M. G. Wahab (Electronics and Communications Engineering, AAST); Wael Swelam (Egyptian Armed Forces);*
- 11 Strange Nonchaotic Attractor of Hunt and OTT Type in a System with Ring Geometry  
*Valentina M. Doroshenko (Saratov State University);*
- 12 Ultra Small Satellite Based on KickSat Model: FemtoSat Feasibility Study and Service  
*Chafaa Hamrouni (University of Gabes); Abdessalem Bsissa (University of Gabes); Rached Hamza (University of AL MANAR); Abdelkarim Naceur (University of Gabes);*
- 13 Radiation of a Charge Exiting Open-ended Waveguide with Dielectric Filling  
*Sergey Nikolaevich Galyamin (St. Petersburg State University); Viktor Viktorovich Vorobev (St. Petersburg State University); A. M. Altmark (Saint Petersburg Electrotechnical University "LETI"); Aleksandra Andreevna Grigoreva (St. Petersburg State University); Andrey Victorovich Tyukhtin (St. Petersburg State University); Sergey Antipov (Argonne National Laboratory);*
- 14 Relativity and the Doppler Effect  
*Sara Liyuba Vesely (I.T.B. — C.N.R.); Alessandro Alberto Vesely (Via L. Anelli 13);*
- 15 Experimental Verification of Quadrupole Model of the Electric Field of a Rotating Magnet  
*Vladimir Borisovich Timofeev (North-Eastern Federal University); Tamara E. Timofeeva (North-Eastern Federal University);*
- 16 Hypothesis of the Electromagnetic Nature of Inertia and Gravity  
*Aleksandr K. Tomilin (National Research Tomsk Polytechnic University); I. L. Misiucenko (Research Center "Algorithm"); V. S. Vikulin ("MacroGroup" Company);*
- 17 Scattered Fields by a Subwavelength Circular Aperture in a Conducting Infinite Screen  
*Marios Andreas Christou (University of Nicosia); Anastasis C. Polycarpou (University of Nicosia);*
- 18 Fast Correction of Analytical Reconstructions in Sparse View X-ray Computed Tomography  
*Dragos Trinca (Universidad de Valladolid); Y. Zhong (Tomsk Polytechnic University); J. Royuela-del-Val (Universidad de Valladolid);*
- 19 A New Method for SSD Black-box Performance Test  
*Qiyou Xie (National University of Defense Technology);*
- 20 Radiation and Control of Coupled Charged Inverted Pendulums  
*Mikhail E. Semenov (Zhukovsky-Gagarin Air Force Academy); Peter A. Meleshenko (Voronezh State University); Alexander F. Klinskikh (Voronezh State University); Igor N. Ischuk (Zhukovsky-Gagarin Air Force Academy); Hang T. T. Nguyen (Vietnam National University); Vladimir A. Gorlov (Zhukovsky-Gagarin Air Force Academy); Andrey M. Solovyov (Voronezh State University); Zainib Hatif Abbas (Voronezh State University of Architecture and Civil Engineering); Mikhail A. Popov (Voronezh State University of Architecture and Civil Engineering); Olga O. Reshetova (Voronezh State University);*
- 21 Fine Adjustment of the Optical Axes of the Convex-concave Lenses by Laser Beams Interference  
*Sergey Borisovich Ryzhikov (Lomonosov Moscow State University); Yuliya Vladimirovna Ryzhikova (Lomonosov Moscow State University);*
- 22 An Efficient Dimming Scheme for a Plasma Lighting System Using Solid-state Power Amplifier  
*Wonshil Kang (Konkuk University); Hyunchul Ku (Konkuk University);*
- 23 Dual Comb Mode-locked Laser: Design and Stabilization  
*Anton V. Kovalev (ITMO University); Alexander V. Uskov (Lebedev Physical Institute); Vladimir V. Vitkin (ITMO University); A. A. Mak (ITMO University); Vadim M. Polyakov (ITMO University);*
- 24 Radiofrequency Impedance Spectroscopy of Fiber Optics Polymers  
*Renata I. Ismagilova (Moscow Institute of Physics and Technology); R. I. Shaidullin (Moscow Institute of Physics and Technology); O. A. Ryabushkin (Moscow Institute of Physics and Technology);*
- 25 Design of Wide-band Electromagnetic Wave Absorbers Using Inductance and Capacitance of Split Square Loop Frequency Selective Surface Calculated from Equivalent Circuit Model  
*Tian Liu (Chungbuk National University); Sung-Soo Kim (Chungbuk National University);*
- 26 Basic Examination of the THz-wave Imaging with Heterodyne Detection Technique  
*Dai Aoki (Yamagata University); Yoshiaki Sasaki (RIKEN); Tetsuya Yuasa (Yamagata University); Chiko Otani (RIKEN);*

- 27 Compact THz Imaging System Consisted of a Quantum Cascade Laser and a High Sensitive THz Bolometer  
*Isao Morohashi (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); Iwao Hosako (National Institute of Information and Communications Technology);*
- 28 Design and Analysis of a Tunable Microwave Photonic Delay Line in X Band  
*S. Kaviani D. (Isfahan University of Technology); Gholamreza H. Askari (Isfahan University of Technology (IUT)); R. Safian (Isfahan University of Technology); H. Mir-Mohammad Sadeghi (Isfahan University of Technology);*
- 29 Fusion of 5G Mobile Wireless and Passive Optical Networks with OFDM Data Format  
*Yu-Chieh Chi (National Taiwan University); Zu-Kai Weng (National Taiwan University); Chung-Yu Lin (National Taiwan University); Hsiang-Yu Chen (National Taiwan University); Gong-Ru Lin (National Taiwan University);*
- 30 Art Painting Testing with Terahertz Pulse and Frequency Modulated Continuous Wave  
*Jean-Paul Guillet (Bordeaux University); M. Roux (L'atelier des Renaissances); K. Wang (Huazhong University of Science and Technology); X. Ma (Bordeaux University); F. Fauquet (Bordeaux University); F. Darracq (Bordeaux University); P. Mounaix (Bordeaux University);*
- 31 Novel Design of a Diamond-core Photonic Crystal Fiber for Terahertz Wave Transmission  
*Runqi Ding (Lanzhou University of Technology); Shanglin Hou (Lanzhou University of Technology); Daobin Wang (Lanzhou University of Technology); Jingli Lei (Lanzhou University of Technology); Xiaoxiao Li (Lanzhou University of Technology); Yuanyuan Ma (Lanzhou University of Technology);*
- 32 Enhancement of Terahertz Generation in Log-periodic Photoconductive Antenna by Silver Nanoantennas  
*Sergey Igorevich Lepeshov (ITMO University); A. A. Gorodetsky (Aston University); N. A. Toropov (ITMO University); T. A. Vartanyan (ITMO University); E. U. Rafailov (Aston University); A. E. Krasnok (ITMO University);*
- 33 Tunable Impedance Microwave Matching of Laser Diodes  
*Roman Andreevich Platonov (Saint Petersburg Electrotechnical University "LETI"); Andrey G. Altynnikov (Saint Petersburg Electrotechnical University "LETI"); Anatoly Konstantinovich Mikhailov (Saint-Petersburg State Electrotechnical University (LETI)); Alexander V. Yastrebov (Saint-Petersburg Electrotechnical University); N. V. Mukhin (Saint Petersburg Electrotechnical University "LETI"); S. Hirsch (University of Applied Sciences Brandenburg); Andrey Borisovich Kozyrev (Saint-Petersburg Electrotechnical University);*
- 34 Mutual Phase Locking of the Magnetoelectric Spin-torque Nanooscillators  
*Ansar R. Safin (National Research University "Moscow Power Engineering Institute"); N. Udalov (National Research University "MPEI"); Mirza Imamovich Bichurin (Novgorod State University); Roman Valer'evich Petrov (Novgorod State University); Alexander Sergeevich Tatarenko (Novgorod State University);*
- 35 Theoretical Analysis of the Propagation of Surface Plasmon Waves in Multilayer Surface Plasmon Resonance Biosensor  
*Md. Saiful Islam (Military Technological College); Abbas Z. Kouzani (Deakin University); E. D. Coyle (Military Technological College);*
- 36 Development of an Efficient Design Procedure for Multilayer Surface Plasmon Resonance Biosensor through Numerical Analysis  
*Md. Saiful Islam (Military Technological College); Abbas Z. Kouzani (Deakin University); E. D. Coyle (Military Technological College);*
- 37 Broadband X-band Circularly Polarized Microstrip Antenna with Elliptical Patch Ring-slotted for Airborne SAR System  
*Cahya Edi Santosa (Chiba University); Josephat Tetuko Sri Sumantyo (Chiba University); Ari Sugeng Budiyanata (National Institute of Aeronautics and Space-LAPAN); Achmad Munir (Bandung Institute of Technology);*
- 38 Radiation Pattern Analysis of Rectangular Curved Patch Antenna  
*Hirokazu Kobayashi (Osaka Institute of Technology); Takeru Oka (Osaka Institute of Technology);*

- 39 Novel Miniaturized UWB Antenna Based on EBG Structure  
*M. G. Wahab (Electronics and Communications Engineering, AAST); A. S. Abd El-Hameed (Egypt-Japan University of Science and Technology); Wael Swelam (Egyptian Armed Forces); Mohamed Hassan Abd El-Azeem (Arab Academy for Science, Technology and Maritime Transport);*
- 40 Novel Miniaturized UWB Antenna with Triple Band-notched Characteristics Utilizing SRR and Folded U-shaped Slot  
*M. G. Wahab (Electronics and Communications Engineering, AAST); Wael Swelam (Egyptian Armed Forces); Mohamed Hassan Abd El-Azeem (Arab Academy for Science, Technology and Maritime Transport);*
- 41 On the Design of Wideband, Circularly Polarized Patch Antennas for RFID Applications in the FCC/ETSI Bands  
*Marios Nestoros (University of Nicosia); Marios Andreas Christou (University of Nicosia); Anastasis C. Polycarpou (University of Nicosia);*
- 42 A Study of an Antenna with Mesh Structure for a Stretchable Device  
*Jong-In Ryu (Korea Electronics Technology Institute); Se-Hoon Park (Korea Electronics Technology Institute); Sehwon Choi (Korea Electronics Technology Institute);*
- 43 Fast and Accurate Technique for CAD of Ridge Waveguide Polarizers  
*Mikhail B. Manuilov (Southern Federal University); Konstantin V. Kobrin (Southern Federal University);*
- 44 Millimeter- and Submillimeter-wave Radiation Detection Using Ultra-thin Metasurface Absorbers  
*Andrey Georgievich Paulish (Novosibirsk State University); Victor Nikolaevich Fedorin (Institute of Semiconductor Physics, SB RAS); Alexander Vitalievich Gelfand (Institute of Semiconductor Physics, SB RAS); Peter S. Zagubisalo (Institute of Semiconductor Physics, SB RAS); Sergei Alexandrovich Kuznetsov (Novosibirsk State University); Andrey V. Arzhannikov (Novosibirsk State University);*
- 45 Unequal Bagley Power Divider Using Uniform Transmission Lines  
*Youngchul Yoon (Catholic Kwandong University); Young Kim (Kumoh National Institute of Technology);*
- 46 The Heating System of Metal Particles in the Microwave Field with a Frequency of 24 GHz  
*Alexander Vodopyanov (Institute of Applied Physics of Russian Academy of Sciences); Igor Dubinov (Institute of Applied Physics of Russian Academy of Sciences);*
- 47 UWB Sixport Analysis and Design in mm-Wave for 5G Applications  
*Gholamreza Askari (Isfahan University of Technology (IUT)); Mahmoud Kamarei (University of Tehran); Maziar Hedayati (Iran University of Science and Technology);*
- 48 Design and Analysis of a High Power Controllable Phase Shifter Based on SIW in X-band  
*B. Rashidi (Isfahan University of Technology); Abolghasem Zeidaabadi-Nezhad (Isfahan University of Technology); Gholamreza Askari (Isfahan University of Technology (IUT)); H. Mir-Mohammad Sadeghi (Isfahan University of Technology);*
- 49 Tolerance Analyses for Metal EBG Waveguides  
*Wei Hong (Nanjing University of Science and Technology); Nin Feng Bo (Southeast University);*
- 50 A Compact Three-way Power Divider with Third-harmonic Suppression  
*Qiao Li (Academy of Space Electronic Information Technology); Jin-Gang Gong (Academy of Space Electronic Information Technology); Xiang-Ke Deng (Academy of Space Electronic Information Technology); Hui Xu (Academy of Space Electronic Information Technology); Yi Wang (Academy of Space Electronic Information Technology);*
- 51 Mode Converters in Overmoded Circular Waveguide for a 250 GHz CARM Source  
*Gian Luca Ravera (ENEA); Silvio Ceccuzzi ("Roma Tre" University); G. Dattoli (ENEA); E. Di Palma (ENEA); A. Doria (ENEA); G. P. Gallerano (ENEA); E. Giovenale (ENEA); F. Mirizzi (Consorzio Create); Giuseppe Schettini ("Roma Tre" University); Ivan Spassovsky (ENEA Centro Ricerche Frascati); A. A. Tuccillo (ENEA);*
- 52 Resonance Method for Measurement of Absorbing Magnetodielectric EM-parameters  
*Victor Nikolaevich Egorov (Eastern-Siberian Branch of FSUE "VNIIFTRI"); Elena Yu. Tokareva (East-Siberian Branch of FSUE "VNIIFTRI");*

- 53 Phaseless Arrays Diagnostic by Phaselift in Near Zone: Numerical Experiments  
*Maria Antonia Maisto (Universita degli studi della Campania Luigi Vanvitelli); Raffaele Moretta (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);*
- 54 Closely Spaced Multi-band MIMO Antenna for Mobile Terminals  
*Yaohui Yang (University of Electronic Science and Technology of China); Zhiqin Zhao (University of Electronic Science and Technology of China); Zaiping Nie (University of Electronic Science and Technology of China);*
- 55 The Use of Navigation Satellites Signals for Measurement the Absorbance of the Forest Canopy  
*Alexandr Sergeevich Yashchenko (Omsk State Pedagogical University); Pavel Petrovich Bobrov (Omsk State Pedagogical University); Valery L. Mironov (Kirensky Institute of Physics, Siberian Branch, Russian Academy of Sciences);*
- 56 Super-resolution Imaging for Fully Polarimetric Radar Based on Efficient Analysis of EM Scattering from Objects within a Half-space  
*Yue Wang (University of Electronic Science and Technology of China); Zai-Ping Nie (University of Electronic Science and Technology of China); Xin Qi (University of Electronic Science and Technology of China); Dongwei Lu (University of Electronic Science and Technology of China); Xiaofeng Que (University of Electronic Science and Technology of China);*
- 57 Monostatic ISAR Coherent 3-D Imaging of Space Target Based on Sparse Constraint  
*Libing Jiang (National University of Defense Technology); Peng Yang (National University of Defense Technology); Zhuang Wang (National University of Defense Technology);*
- 58 SAR Imaging for Targets within a Half-space Using Efficient Numerical Simulation of Maxwell's Equation  
*Xin Qi (University of Electronic Science and Technology of China); Zaiping Nie (University of Electronic Science and Technology of China); Dongwei Lu (University of Electronic Science and Technology of China); Yue Wang (University of Electronic Science and Technology of China); Xiaofeng Que (University of Electronic Science and Technology of China); Jun Hu (University of Electronic Science and Technology of China);*
- 59 3D Print X-band Horn Antenna for Ground-based SAR Application  
*Yohandri (Universitas Negeri Padang); Rahmad Arif Syafrindo (Universitas Negeri Padang); Josaphat Tetuko Sri Sumantyo (Chiba University); Cahya Edi Santosa (Chiba University); Achmad Munir (Institut Teknologi Bandung);*
- 60 Road Shape Imaging System Using Monopulse FMCW Radar  
*Tae-Yun Lee (Yonsei University); Vladimir Skvortsov (Yonsei University); Young-Gu Kang (Yonsei University); Min-Ho Ka (Yonsei University);*
- 61 A Power Allocation Algorithm of Distributed Interference in Global Positioning System  
*Fang Ye (Harbin Engineering University); Hongbo Tian (Harbin Engineering University); Fei Che (Harbin Engineering University);*
- 63 Design of a Compact Full Ka-band Low Loss Waveguide-based Spatial Power Divider/Combiner  
*Lei Tan (Southeast University); Kang Yin (Southeast University); Jinping Xu (Southeast University);*
- 65 Reconfigurable Sparse Concentric Ring Arrays with Optimized Number of Rings and Elements  
*Said Esmail El-Khamy (Alexandria University); Magdy A. Abdelhay (Alexandria Institute of Engineering and Technology);*
- 66 Design of Triple Band ACS Fed Antenna with M and Rectangular Shaped Radiating Branches for WLAN and WiMAX Applications  
*Praveen Vummadisetty Naidu (Velagapudi Ramakrishna Siddhartha Engineering College); Arvind Kumar (Kautilya Institute of Technology and Engineering);*
- 67 A Compact Modified Rectangular Shaped Microstrip Antenna for WLAN/WiMAX and UWB Applications  
*Praveen Vummadisetty Naidu (Velagapudi Ramakrishna Siddhartha Engineering College); V. Ravi (Velagapudi Ramakrishna Siddhartha Engineering College); Arvind Kumar (Kautilya Institute of Technology and Engineering);*
- 68 Design and Simulation of Semi Circular Microstrip Antenna with  $\mathbf{\Psi}$  Shaped Slot for WiBro/WLAN/WiMAX and UWB Applications  
*Praveen Vummadisetty Naidu (Velagapudi Ramakrishna Siddhartha Engineering College); K. Rohini (Velagapudi Ramakrishna Siddhartha Engineering College); Arvind Kumar (Kautilya Institute of Technology and Engineering);*

- 69 A New Six-way Broadband Spatial Power Combiner/Divider Based on Conical Cavity  
*Mohsen Abdolahi (Isfahan University of Technology (IUT)); Zohre Pourgholamhossein (Isfahan University of Technology (IUT)); Mohammad Mahdi Sabahi (Isfahan University of Technology (IUT)); Hassan Pakarzadeh (Shiraz University of Technology);*

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**Session 2P1**

**Optical Manipulation by Nano-scale Objects**

**Tuesday PM, May 23, 2017**

**Room G5**

Organized by Robert A. Suris, Andrey A. Bogdanov

Chaired by Andrey A. Bogdanov

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- 14:00 Optical Trapping of Non-spherical Plasmonic Nanoparticles  
*Oto Brzobohaty (Institute of Scientific Instruments of the ASCR, v.v.i.); V. Karasek (Institute of Scientific Instruments of the ASCR, v.v.i.); M. Siler (Institute of Scientific Instruments of the ASCR, v.v.i.); L. Chvatal (Institute of Scientific Instruments of the ASCR, v.v.i.); Pavel Zemanek (Institute of Scientific Instruments of the ASCR, v.v.i.);*
- 14:20 Optical Antitrapping of Nanoparticles in Gaussian Beam Due to Surface Modes of a Substrate  
*Aliaksandra Ivinskaya (ITMO University); Mikhail I. Petrov (ITMO University); Andrey A. Bogdanov (ITMO University); I. Shishkin (Tel Aviv University); Pavel Ginzburg (ITMO University); Alexander Sergeevich Shalin (Ulyanovsk Branch of the Institute of Radio Engineering and Electronics, Russian Academy of Sciences);*
- 14:40 Spectral Signatures of Axially Rotating Scatterers  
*D. Filonov (Tel Aviv University); V. Kozlov (Tel Aviv University); Pavel Ginzburg (Tel Aviv University);*
- 15:00 Particle Trapping and Manipulation Using Near-field Optics  
*Sile Nic Chormaic (Okinawa Institute of Science and Technology Graduate University); Mark Daly (OIST Graduate University); Aili Maimaiti (OIST Graduate University); Xue Han (OIST Graduate University); Aysen Gurkan (OIST Graduate University); Cindy Esporlas (OIST Graduate University); Viet Giang Truong (OIST Graduate University);*
- 15:20 Applications of Integrated Optomechanical Devices  
*Lei Shi (Huazhong University of Science and Technology);*

- 15:40 Optomechanics of Fabry-Perot Resonator with Movable Mirrors  
*Almas F. Sadreev (L. V. Kirensky Institute of Physics); E. Ya. Sherman (Universidad del Pais Vasco UPV-EHU);*

**16:00 Coffee Break**

- 16:20 Structured Light for Manipulating Anisotropic Nanoparticles  
*Alexander A. Zharov (Institute for Physics of Microstructures of the Russian Academy of Sciences); Alexander A. Zharov, Jr. (Institute for Physics of Microstructures of the Russian Academy of Sciences); Ilya V. Shadrivov (Australian National University); Nina A. Zharova (The Australian National University);*
- 16:40 Particle Dynamics in an Unstable Optical Potential  
*Oto Brzobohaty (Institute of Scientific Instruments of the ASCR, v.v.i.); P. Jakl (Institute of Scientific Instruments of the ASCR, v.v.i.); M. Siler (Institute of Scientific Instruments of the ASCR, v.v.i.); V. Svak (Institute of Scientific Instruments of the ASCR, v.v.i.); S. Simpson (Institute of Scientific Instruments of the ASCR, v.v.i.); A. Ryabov (Charles University in Prague); R. Filip (Palacky University); Pavel Zemanek (Institute of Scientific Instruments of the ASCR, v.v.i.);*
- 17:00 Cavity Optomechanics with Optically Trapped Nano-objects  
*Pau Mestres (The Barcelona Institute of Science and Technology); Johann Berthelot (Institut Fresnel - UMR 7249); Srdjan S. Acimovic (Chalmers University of Technology); Romain Quidant (The Barcelona Institute of Science and Technology);*
- 17:20 Advanced Light Manipulation Techniques with Monolayers of Colloidal Particles: Generation of Non-diffracting Beam Lattices and Control over Individual Photonic Jets for Surface Patterning  
*Nikolai Mitin (Institute of Applied Physics RAS); Alexander Pikulin (Institute of Applied Physics RAS);*
- 17:40 Lateral and Repulsive Optical Forces on Particles near Surfaces  
*Francisco J. Rodriguez Fortuno (King's College London);*
- 18:00 Plasmon Drag Effect in Metal Nanostructures and Effects of Plasmonic Spin  
*Maxim Durach (Georgia Southern University); Natalia Noginova (Norfolk State University);*

- 18:20 Recoil Force of Surface Plasmon Polariton  
*Andrey A. Bogdanov (ITMO University); Mikhail I. Petrov (ITMO University); S. V. Sukhov (University of Central Florida); A. S. Shalin (ITMO University); Aristide Dogariu (University of Central Florida);*
- 18:40 Light Source-free Manipulation by Nanoparticles Using Lateral-drag Propulsion Forces, Induced by Anisotropy  
*Igor S. Nefedov (Helsinki University of Technology); J. Miguel Rubi (University of Barcelona);*
- 19:00 Optical Forces on Dielectric Particles in Light-guiding Structures  
*Alexey V. Maslov (University of Nizhny Novgorod);*

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### Session 2P2

#### Fundamental Aspects in the Problems of the EM High-frequency Wave Propagation in the Ionosphere 2

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**Tuesday PM, May 23, 2017**

**Room G6**

Organized by Nikolay N. Zernov

Chaired by Nikolay N. Zernov, Vadim E. Gherm

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- 14:00 Developments in HF Propagation Predictions to Support Communications with Aircraft on Trans-polar Routes  
*Invited E. Mike Warrington (University of Leicester); Neil C. Rogers (Lancaster University); A. J. Stocker (University of Leicester); D. R. Siddle (University of Leicester); H. A. H. Al-Behadili (University of Leicester); Farideh Honary (Lancaster University); M. J. Beharrell (Lancaster University); David H. Boteler (Natural Resources Canada); D. W. Danskin (Natural Resources Canada); Nikolay Y. Zaalov (Saint Petersburg State University);*
- 14:20 Ionospheric Providing of HF Propagation in High Latitudinal Regions  
*Olga A. Maltseva (Southern Federal University); M. M. Anishin (Southern Federal University);*

- 14:40 Observations of Traveling Ionospheric Disturbances on the Basis of Vertical and Near-vertical Sounding Data  
*Invited Vladimir Ivanovich Kurkin (Institute of Solar-Terrestrial Physics, Siberian Branch, Russian Academy of Sciences); Oleg A. Laryunin (Irkutsk State University); Aleksey V. Podlesnyi (Institute of Solar — Terrestrial Physics, Siberian Branch, Russian Academy of Sciences); M. D. Pezhemskaya (Institute of Solar — Terrestrial Physics, Siberian Branch, Russian Academy of Sciences); Lidiya V. Chistyakova (Institute of Solar — Terrestrial Physics, Siberian Branch, Russian Academy of Sciences);*

15:00 Geophysical Conditions for Round-the-World Propagation of HF Radio Signals  
*Vera Ivanova (Institute of Solar-Terrestrial Physics SB RAS); Vladimir Ivanovich Kurkin (Institute of Solar-Terrestrial Physics, Siberian Branch, Russian Academy of Sciences); Igor Poddelsky (Institute of Cosmophysical Researches and Radio Wave Propagation, FEB RAS);*

15:20 The Real-time Forecast of HF Radio Channel on the Base of Backscatter Sounding Data  
*Sergey N. Ponomarchuk (Institute of Solar-Terrestrial Physics SB RAS); V. P. Grozov (Institute of Solar-Terrestrial Physics SB RAS); G. V. Kotovich (Institute of Solar-Terrestrial Physics SB RAS); Vladimir Ivanovich Kurkin (Institute of Solar-Terrestrial Physics SB RAS); Maksim Sergeevich Penzin (Institute of Solar-Terrestrial Physics of the Siberian Branch of the RAS);*

15:40 Peculiarities of Decameter Radio Wave Propagation over High-latitude Paths Using Data of LFM-ionosondes Network  
*Vera A. Ivanova (Institute of Solar-Terrestrial Physics SB RAS); Vladimir Ivanovich Kurkin (Institute of Solar-Terrestrial Physics, Siberian Branch, Russian Academy of Sciences); Lidiya V. Chistyakova (Institute of Solar — Terrestrial Physics, Siberian Branch, Russian Academy of Sciences); Aleksey V. Podlesnyi (Institute of Solar — Terrestrial Physics, Siberian Branch, Russian Academy of Sciences); Sergey N. Ponomarchuk (Institute of Solar-Terrestrial Physics SB RAS); Igor N. Poddelsky (Institute of Cosmophysical Researches and Radio Wave Propagation, FEB RAS); Aleksey I. Poddelsky (Institute of Cosmophysical Researches and Radio Wave Propagation, FEB RAS);*

16:00 Coffee Break



- 16:20 Features of Plasma Perturbations HF-induced in the  
Invited Outer Ionosphere  
*Vladimir L. Frolov (Radio Physical Research Institute (NIRFI NNSU));*
- 16:40 The Study of HF and VLF Artificial Emission at High Latitudes in the Heating Experiments on EISCAT and SPEAR Facilities  
*Roman Yu. Yurik (Polar Geophysical Institute RAS); E. D. Tereshchenko (Polar Geophysical Institute RAS);*
- 17:00 Ionospheric Disturbances during 17–19 March 2015 Magnetic Storm over Northern Region of Russia  
*Vladimir Ivanovich Kurkin (Institute of Solar — Terrestrial Physics, Siberian Branch, Russian Academy of Sciences); N. A. Zolotukhina (Institute of Solar-Terrestrial Physics SB RAS); N. M. Polekh (Institute of Solar-Terrestrial Physics SD RAS); Denis D. Rogov (Arctic and Antarctic Research Institute); E. B. Romanova (Institute of Solar-Terrestrial Physics SD RAS); M. Chelpanov (Institute of Solar — Terrestrial Physics, Siberian Branch, Russian Academy of Sciences);*
- 17:20 Sources of Longitudinal Variations in the High-middle  
Invited Latitude Ionosphere over Eurasia  
*Boris G. Shpynev (Institute of Solar-Terrestrial Physics of Siberian Branch of Russian Academy of Sciences); Marina A. Chernigovskaya (Institute of Solar-Terrestrial Physics of Siberian Branch of Russian Academy of Sciences);*
- 17:40 Expanding the Diagnostic Capabilities of Incoherent Scatter Radar Technique  
*Boris G. Shpynev (Institute of Solar-Terrestrial Physics of Siberian Branch of Russian Academy of Sciences); Geliy A. Zhrebtsov (Institute of Solar-Terrestrial Physics, SB RAS); Dmitry S. Kushnarev (Institute of Solar-Terrestrial Physics of Siberian Branch of Russian Academy of Sciences); Sergey S. Alsatkin (Institute of Solar-Terrestrial Physics SB RAS); Denis S. Khabituev (Institute of Solar Terrestrial Physics); Alexander L. Voronov (Institute of Solar-Terrestrial Physics, SB RAS);*
- 18:00 Study on Plasma Blob to Result in Radio Signal Scintillations in Low Latitude Ionosphere  
Invited  
*Jiankui Shi (National Space Science Center, CAS); Zheng Wang (National Space Science Center, CAS); Klaus Torkar (Space Research Institute, AAS); Gely Zhrebtsov (Institute of Solar Terrestrial Space Physics, RAS/SB); Konstantin G. Ratovsky (Institute of Solar-Terrestrial Physics, SB RAS); Elena B. Romanova (Institute of Solar Terrestrial Space Physics, RAS/SB);*
- 18:20 The Use of GNSS Data for Constructing the Indices of Electron Density Perturbation in the Ionosphere  
*I. A. Nesterov (M. V. Lomonosov Moscow State University); Elena S. Andreeva (M. V. Lomonosov Moscow State University); M. O. Nazarenko (M. V. Lomonosov Moscow State University); Artem M. Padokhin (M. V. Lomonosov Moscow State University); Yulia S. Tumanova (M. V. Lomonosov Moscow State University);*
- 18:40 Seasonal and Helio-geomagnetic Activity Pattern of the Ionospheric Variability over Russia's Eastern Siberia and Far East Region from the GPS/GLONASS Data  
*Anna S. Yasyukevich (Institute of Solar-Terrestrial Physics of Siberian Branch of Russian Academy of Sciences); Marina A. Chernigovskaya (Institute of Solar-Terrestrial Physics of Siberian Branch of Russian Academy of Sciences); Anna A. Mylnikova (Institute of Solar-Terrestrial Physics (ISTP), Siberian Branch of Russian Academy of Sciences); Boris G. Shpynev (Institute of Solar-Terrestrial Physics of Siberian Branch of Russian Academy of Sciences); Denis S. Khabituev (Institute of Solar Terrestrial Physics);*

### Session 2P3

#### Radar Cross Section and Inverse Problems in Electromagnetics

Tuesday PM, May 23, 2017

Room G7

Organized by Yury Vladimirovich Yukhanov

Chaired by Yury Vladimirovich Yukhanov

- 14:00 Broadband THz Time Domain Bistatic Radar Cross Section Measurements  
*Bo Wang (Science and Technology on Electromagnetic Scattering Laboratory); Yajun Wu (Science and Technology on Electromagnetic Scattering Laboratory); Xiao-Bing Wang (Xidian University);*
- 14:20 Radiation and Scattering Characteristics of a Conformal Magnetic Antenna of a Large Aircraft  
*Andrey I. Semenikhin (Southern Federal University); A. I. Chernokolpakov (Southern Federal University); Diana V. Semenikhina (Southern Federal University);*
- 14:40 Cross-eye Monopulse Jammer Located on UAV  
*Imren Kalinbacak (Ege University); Mustafa Pehlivan (Ege University); Korkut Yegin (Yeditepe University);*

- 15:00 Scattering of Radio Waves from HF-induced Ionospheric Irregularities  
*Vladimir L. Frolov (Radio Physical Research Institute (NIRFI NNSU));*
- 15:20 Reducing Radar Cross Section of TEM Horn Antenna Component with Predetermined Radiation Characteristics  
*Yuliya Dmitriyevna Gavrilova (AO "NII" Vector); A. Suslov (AO "NII" Vector); Sukhov Igor Alexandrovich (AO "NII" Vector);*
- 15:40 Synthesis of Anisotropic Plane with an Array of Randomly Oriented Impedance Strips  
*Yury V. Yukhanov (Southern Federal University); T. Yu. Privalova (Southern Federal University); E. E. Privalov (Southern Federal University);*
- 16:00 **Coffee Break**
- 16:20 Damping of the Scattered Field of a Plane Object by a Waveguide Array  
*Yury Vladimirovich Yukhanov (Southern Federal University); Tatyana Yurievna Privalova (Southern Federal University); A. V. Gevorkyan (Southern Federal University);*
- 16:40 VHF-UHF Radio Monitoring Antenna with a Small Radar Cross Section  
*Aleksandr Sergeevich Suslov (AO "NII" Vector); Igor Alexandrovich Suhov (AO "NII" Vector); Julia Dmitriyevna Gavrilova (AO "NII" Vector);*
- 17:00 Surface Synthesis of the Reflector Antenna with Radiation Pattern of Special Form  
*Aleksandr N. Veselov (AO "NII" Vector); Yuliya Dmitriyevna Gavrilova (AO "NII" Vector);*
- 17:20 Controlling Van-Atta Array Scattering Characteristics with HITITE HMC247 Phase Shifter  
*Feruz Setmerovich Topalov (Southern Federal University); Yury Vladimirovich Yukhanov (Southern Federal University); Igor Vasilyevich Ilin (Southern Federal University); Tatyana Yurievna Privalova (Southern Federal University);*
- 17:40 High Efficiency Horn with Hexagonal Aperture for Antenna Arrays  
*Yury V. Krivosheev (JSC Radiofizika); A. V. Shishlov (Moscow Institute of Physics and Technology);*
- 18:00 Wideband Quad-ridged TEM-horn with Switched Polarization  
*Igor Alexandrovich Suhov (AO "NII" Vector); Julia Dmitriyevna Gavrilova (AO "NII" Vector); Aleksandr Sergeevich Suslov (AO "NII" Vector); A. N. Veselov (AO "NII" Vector);*

- 18:20 Estimation of the Groove's and the Through-thickness Gap's RCS  
*Andrey M. Lebedev (Institute for Theoretical and Applied Electromagnetics, Russian Academy of Sciences); I. I. Krasnolobov (Institute for Theoretical and Applied Electromagnetics, Russian Academy of Sciences); Anatoli I. Fedorenko (Institute for Theoretical and Applied Electromagnetics, Russian Academy of Sciences); T. A. Furmanova (Institute for Theoretical and Applied Electromagnetics, Russian Academy of Sciences);*

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### Session 2P4

### The Modern Hybrid Methods in the Problems of Computational Electromagnetics 1

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Tuesday PM, May 23, 2017

### Room G8

Organized by Victor Filippovich Kravchenko,  
Alexander Nikolaevich Bogolyubov

Chaired by Alexander Nikolaevich Bogolyubov,  
Victor Filippovich Kravchenko

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- 14:00 The Novel Waveguide Filters on Complex Multilayered Metal-dielectric Structures  
*Viacheslav V. Zemlyakov (Southern Federal University); Sergey V. Krutiev (Southern Federal University); Daria V. Lonkina (Southern Federal University);*
- 14:20 Electrodynamics Analysis of Electromagnetic Fields in the Ridge Waveguides with Piecewise-layered Dielectric Filling  
*Alexey V. Donchenko (Southern Federal University); Gennady F. Zargano (Southern Federal University); Viacheslav V. Zemlyakov (Southern Federal University);*
- 14:40 Wave Propagation of Induced Soft X-ray Radiation (VUV) through  $\mu$ -capillary Holes of Ordered Structures of Glass Micro-Channel Plate: Comparison among Theoretical and Experimental Data  
*Mikhail I. Mazuritskiy (Southern Federal University); Alexander M. Lerer (Southern Federal University); Viacheslav V. Zemlyakov (Southern Federal University);*
- 15:00 Investigation of Algorithms Utilizing Wavelets to Solve Various Partial Differential Equations  
*Oleg V. Kravchenko (Scientific and Technological Center of Unique Instrumentation of RAS); K. P. Mredula (Sardar Vallabhbhai Patel Institute of Technology); D. C. Vakaskar (The Maharaja Sayajirao University of Baroda);*

- 15:20 Numerical Investigation of Ion Drag Force Influence on Dusty Plasma Void Formation  
*Oleg V. Kravchenko (Scientific and Technological Center of Unique Instrumentation of RAS); J. K. Atul (Institute for Plasma Research);*
- 15:40 Incorporation of Non-local Optical Response into the Discrete Sources Method to Solve 3D Scattering Problems of Nanoplasmonics  
*Ivan V. Lopushenko (Lomonosov Moscow State University);*
- 16:00 **Coffee Break**
- 16:20 Solution of Boundary Problems for Elliptic Equation in Domains with Conical or Corner Points  
*Vladimir V. Rovenko (Lomonosov Moscow State University); Ilya E. Mogilevsky (M. V. Lomonosov Moscow State University);*
- 16:40 Mathematical Modeling of Mirror Collimator with Impedance Rolled Edges  
*Fedor B. Khlebnikov (Lomonosov Moscow State University); Denis A. Konyaev (Lomonosov Moscow State University); Natalya E. Shapkina (Lomonosov Moscow State University); Vladimir V. Rovenko (Lomonosov Moscow State University);*
- 17:00 Mathematical Problems of the Diffraction Theory on Bodies with Irregularly Boundary  
*Alexander Nikolaevich Bogolyubov (Lomonosov Moscow State University); Ilya E. Mogilevskiy (Moscow State University); Vladimir V. Rovenko (Lomonosov Moscow State University);*
- 17:20 Modeling of Periodic Rectangular Ladder-type Waveguide Systems  
*Mikhail I. Svetkin (Lomonosov Moscow State University); Alexander Igorevich Erokhin (M.V. Lomonosov Moscow State University);*
- 17:40 Synthesis of Layered Waveguiding Systems Based on Metamaterials  
*Nikolay A. Bogolyubov (Lomonosov Moscow State University); Ivan A. Butkarev (Lomonosov Moscow State University); Yulia V. Mukhartova (Moscow State University); Mikhail I. Svetkin (Lomonosov Moscow State University);*
- 18:00 Conservative Algorithms for the Quantitative Design of the Millimeter-wave Klystrons  
*Alexey A. Bykov (Lomonosov Moscow State University); Alexander Nikolaevich Bogolyubov (Lomonosov Moscow State University); Alexey G. Sveshnikov (Lomonosov Moscow State University); Ivan V. Lopushenko (Lomonosov Moscow State University);*

- 18:20 Error Estimations for the Regularized Double Period Method  
*Alexander A. Belov (Lomonosov Moscow State University); Nikolay N. Kalitkin (Keldysh Institute of Applied Mathematics);*

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**Session 2P5**
**Advanced Photonic Technologies for Energy Harvesting**


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**Tuesday PM, May 23, 2017**

**Room G9**

Organized by Feng Yan, Zhiyong Fan

Chaired by Yuen Hong Tsang, Jinhua Li

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- 14:00 Interface and Tandem Design for Polymer and Perovskite Solar Cells  
*Hin-Lap Yip (South China University of Technology);*
- 14:20 Transition Metal Phosphides for Harvesting Light Energy  
Invited  
*Jingqi Tian (Nanyang Technological University); Peng Chen (Nanyang Technological University);*
- 14:40 High Performance Planner Perovskite Solar Cells with Oxide Electron Transport Layer  
*Weihai Zhang (Hubei University); Xiong Juan (Hubei University); Jinhua Li (Hubei University);*
- 15:00 Self-assembly of Crystalline, Large-area and Regular  
Invited  
 $\text{TiO}_2$  Nanotube Arrays on Different Substrates  
*Xiaoguang Liang (City University of Hong Kong); Dapang Li (City University of Hong Kong); Sen Po Yip (City University of Hong Kong); Johnny Chung Ho (City University of Hong Kong);*
- 15:20 Efficient Semitransparent Perovskite Solar Cells with Graphene Electrodes  
*Peng You (The Hong Kong Polytechnic University); Zhike Liu (The Hong Kong Polytechnic University); Qidong Tai (The Hong Kong Polytechnic University); Shenghua Liu (The Hong Kong Polytechnic University); Feng Yan (The Hong Kong Polytechnic University);*
- 15:40 Perovskite Nanowire Arrays with Improved Stability and Optoelectronic Devices  
*Zhiyong Fan (The Hong Kong University of Science and Technology); Aashir Waleed (The Hong Kong University of Science and Technology); Leilei Gu (The Hong Kong University of Science and Technology); Mohammad Mahdi Tavakoli (The Hong Kong University of Science and Technology); Daquan Zhang (The Hong Kong University of Science and Technology); Qianpeng Zhang (The Hong Kong University of Science and Technology);*

16:00 **Coffee Break**

16:20 Plasmonic Black Absorbers for Photocurrent Enhancement under Visible Light  
Invited

*Furui Tan (Hong Kong Polytechnic University); Ning Wang (Hong Kong Polytechnic University); Yang Liu (Hong Kong Polytechnic University); Xuming Zhang (Hong Kong Polytechnic University);*

16:40 Photocatalytic Activity Enhancement of WS<sub>2</sub> Film by Laser Treatment

*Sainan Ma (The Hong Kong Polytechnic University); Longhui Zeng (The Hong Kong Polytechnic University); Lili Tao (The Hong Kong Polytechnic University); Chun Yin Tang (The Hong Kong Polytechnic University); Hui Long (The Hong Kong Polytechnic University); Ping Kwong Cheng (The Hong Kong Polytechnic University); Yang Chai (The Hong Kong Polytechnic University); Xuming Zhang (The Hong Kong Polytechnic University); Yuen Hong Tsang (The Hong Kong Polytechnic University);*

17:00 Optical Buffer in Waveguide Lattices Using Discrete Harmonic Oscillation Effect  
Invited

*Tenghao Li (The Hong Kong Polytechnic University); Xuming Zhang (Hong Kong Polytechnic University);*

17:20 Design and Performance Analysis of Cockroft-Walton Voltage Multiplier (CWVM) Energy Harvesting for Low Power Applications

*Nitika Rani (Punjabi University); Jasleen Kaur (Punjabi University); Hemant Bhatia (Punjabi University); Simarjit Singh Saini (Punjabi University); Ranjit Kaur (Punjabi University); Ekambir Sidhu (Punjabi University);*

17:40 CH<sub>3</sub>NH<sub>3</sub>PbI<sub>3</sub> Perovskite Bulk Single Crystal: Growth and Photodetectors

*Zhipeng Lian (Tsinghua University); Jie Ding (Tsinghua University); Huajing Fang (The Hong Kong Polytechnic University); Qianrui Lv (Tsinghua University); Qingfeng Yan (Tsinghua University);*

18:00 Van der Waals Multilayers for Photovoltaic Applications

*Dawei He (Beijing Jiaotong University); Yongsheng Wang (Beijing Jiaotong University); Hui Zhao (University of Kansas);*

18:20 Annealing Effect of Sputtered Crystalline MoO<sub>3</sub> Films on Hole Transporting in Inverted Type Perovskite Solar Cells

*Lung-Chien Chen (National Taipei University of Technology); Zong-Liang Tseng (National Taipei University of Technology); Jian-Hong Chen (National Taipei University of Technology); Kuan-Lin Lee (National Taipei University of Technology);*

**Session 2P6****Remote Sensing Techniques of Earth System Related Components 2****Tuesday PM, May 23, 2017****Room G10**

Organized by Jian-Cheng Shi

Chaired by Peng Gong, Shunlin Liang

14:00 Estimation of Solar and Geomagnetic Activity Contribution in Solar Cycle Variations of Median Peak Electron Density NmF<sub>2</sub>

*Konstantin G. Ratovsky (Institute of Solar-Terrestrial Physics, SB RAS); M. V. Klimenko (Immanuel Kant Baltic Federal University); A. R. Abdullaev (Immanuel Kant Baltic Federal University); A. V. Markov (Immanuel Kant Baltic Federal University); Nina A. Korenkova (Ionosphere and Radio wave Propagation RAS);*

14:20 Solar and Geomagnetic Activity Dependence of Mid-latitude F-spread Occurrence

*Konstantin G. Ratovsky (Institute of Solar-Terrestrial Physics, SB RAS); Jiankui Shi (National Space Science Center, CAS); Guojun Wang (National Space Science Center, Chinese Academy of Sciences); Zhenzhan Wang (National Space Science Center/Center for Space Science and Applied Research, Chinese Academy of Sciences);*

14:40 On the Effect of Refractive Index Perturbations on Propagation of Radio Waves in the Evaporation Duct  
*M. V. Isakov (JSC SPP Salyut); A. M. Makhalov (National Research University); Mikhail Sergeevich Mikhailov (National Research University "Moscow Power Engineering Institute"); Valery A. Permyakov (Moscow Power Engineering Institute (Technical University));*

15:00 Global Changes Studies Using the Global Land Surface Satellite (GLASS) Products

*Shunlin Liang (University of Maryland);*

- 15:20 Estimation of Annual Daily Averaged Evapotranspiration across China during 1996–2015 Using Passive Microwave Observations  
*Xiao-Jing Han (Institute of Agricultural Resources and Regional Planning, Chinese Academy of Agricultural Sciences); Si-Bo Duan (Institute of Agricultural Resources and Regional Planning, Chinese Academy of Agricultural Sciences); Pei Leng (Institute of Agricultural Resources and Regional Planning, Chinese Academy of Agricultural Sciences); Wei Wang (ICube (UMR7357)); Zhao-Liang Li (Institute of Agricultural Resources and Regional Planning, Chinese Academy of Agricultural Sciences);*
- 15:40 Daily Mapping of Global Surface Water by Long-term Modis Time Series  
*Peng Gong (Tsinghua University); Luyan Ji (Tsinghua University);*
- 16:00 **Coffee Break**
- 16:20 Convolutional Neural Network for Multi-source Deep Learning Land Use Mapping in the Three Gorges Reservoir Area  
*Xin Zhang (Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences); Liang Zhu (Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences); Fuyou Tian (Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences); Zonghan Ma (Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences); Bingfang Wu (Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences);*
- 16:40 Single-frequency Dielectric Model of Frozen Mineral Soils for Frequencies of the Basic Satellites  
*Valery L. Mironov (Kirensky Institute of Physics, Siberian Branch, Russian Academy of Sciences); Sergey Viktorovich Fomin (Kirensky Institute of Physics, Siberian Branch, Russian Academy of Sciences); Yury I. Lukin (Kirensky Institute of Physics, Siberian Branch, Russian Academy of Sciences); A. Y. Karavaysky (Kirensky Institute of Physics, Siberian Branch, Russian Academy of Sciences); I. P. Molostov (Altai State University);*
- 17:00 A General Dielectric Model for Organic Soils at a Frequency of 1.4 GHz  
*Valery L. Mironov (Kirensky Institute of Physics, Siberian Branch, Russian Academy of Sciences); Lidumila G. Kosolapova (Kirensky Institute of Physics, Siberian Branch, Russian Academy of Sciences); Igor V. Savin (Kirensky Institute of Physics, Siberian Branch, Russian Academy of Sciences); Sergey Viktorovich Fomin (Kirensky Institute of Physics, Siberian Branch, Russian Academy of Sciences);*
- 17:20 High Resolution Near-surface Freeze/Thaw State Estimation over China by Integration Use of Microwave and Thermal Infrared Remote Sensing Data  
*Tianjie Zhao (Jointly Sponsored by Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences); Tongxi Hu (The Ohio State University); Jian-Cheng Shi (Institute of Remote Sensing Applications, Chinese Academy of Sciences); Tianxing Wang (Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences); Dabin Ji (Jointly Sponsored by Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences); Rui Li (Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences); Pingkai Wang (Jointly Sponsored by Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences);*
- 17:40 Landslide Mapping in the Kaikoura Earthquake Using Multisource Remote Sensing Data  
*Liwei Li (Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences); Xianfeng Zhou (Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences); Linyi Liu (Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences); Yunxia Wen (Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences); Liping Lei (Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences); Wenjiang Huang (Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences); Bing Zhang (Institute of Remote Sensing and Digital Earth, CAS);*
- 18:20 Comparison of Mass Change Estimation of the Mountain Glaciers from the C and L Band SAR Data  
*Zhen Li (Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences); Jianmin Zhou (Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences); Ping Zhang (Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences);*

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**Session 2P7**
**Semiconductor Quantum Structures,  
Microcavities and Polariton Lasers**


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**Tuesday PM, May 23, 2017**
**Room B1**

Organized by Alexey V. Kavokin, Ivan V. Ignatiev  
 Chaired by Sven Hoffling, Nina Voronova

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- 14:00 Terahertz Emission from Multiple-microcavity  
Invited Exciton-polariton Lasers  
*S. Huppert (PSL Research University); O. Lafont (PSL Research University); E. Baudin (PSL Research University); Jerome Tignon (PSL Research University); R. Ferreira (PSL Research University);*
- 14:20 Adiabatic Design of Micropillar Cavities for 1.55- $\mu\text{m}$   
Invited Quantum-dot Single-photon Sources  
*Hai-Zhi Song (Southwest Institute of Technical Physics); Libo Yu (Southwest Institute of Technical Physics); Zhiming M. Wang (University of Electronic Science and Technology of China);*
- 14:40 Non-linear Regimes of Exciton-polariton Rabi Oscillations  
Invited  
*Nina Voronova (National Research Nuclear University MEPhI (Moscow Engineering Physics Institute) & Russian Quantum Center); Andrei Elistratov (N. L. Dukhov All-Russia Research Institute of Automatics); Yurii E. Lozovik (Institute of Spectroscopy of the Russian Academy of Sciences);*
- 15:00 Coupled Exciton-photon Bose Condensate in an Open System: **ab Initio** Approach  
*Andrei A. Elistratov (N. L. Dukhov All-Russia Research Institute of Automatics); Yurii E. Lozovik (Institute of Spectroscopy of the Russian Academy of Sciences);*
- 15:20 Optical Spin Control of a Single Spin in a Zero-dimensional Microcavity  
Invited  
*E. L. Ivchenko (Ioffe Physical-Technical Institute); M. M. Glazov (Ioffe Physical-Technical Institute of the RAS);*
- 15:40 Spin Noise in Quantum Dot Microcavities in Strong Coupling Regime  
*Dmitry S. Smirnov (Ioffe Institute); Bogdan Reznichenko (Institut Néel); Alexia Auffeves (Institut Néel); Loic Lanco (Université Paris-Saclay);*
- 16:00 **Coffee Break**
- 16:20 Light-matter Interaction in Microcavities Filled with Fluorescent Proteins  
Invited  
*C. P. Dietrich (Universitat Wurzburg); S. Betzold (Universitat Wurzburg); M. Dusel (Universitat Wurzburg); M. Emmerling (Universitat Wurzburg); J. Ohmer (University of Wurzburg); U. Fischer (University of Wurzburg); M. C. Gather (University of St Andrews); Sven Hofling (Universitat Wurzburg);*
- 16:40 Evaluation of Multi-channel Amplification for Highly Stacked Quantum Dot Semiconductor Optical Amplifiers  
*Kouichi Akahane (National Institute of Information and Communications Technology); Naoya Yoshida (Aoyama Gakuin University); Yu Fukae (Aoyama Gakuin University); Atsushi Matsumoto (National Institute of Information and Communications Technology); Toshimasa Umezawa (National Institute of Information and Communications Technology); Atsushi Kanno (National Institute of Information and Communications Technology); Hideyuki Sotobayashi (Aoyama Gakuin University); Naokatsu Yamamoto (National Institute of Information and Communications Technology);*
- 17:00 Room Temperature Exciton-polariton Resonant Reflection and Suppressed Absorption in Periodic Systems of InGaN Quantum Wells  
*Vladimir V. Chaldyshev (The Ioffe Institute); A. S. Bolshakov (The Ioffe Institute); E. E. Zavarin (The Ioffe Institute); A. V. Sakharov (The Ioffe Institute); W. V. Lundin (The Ioffe Institute); A. F. Tsatsulnikov (The Ioffe Institute); M. A. Yagovkina (The Ioffe Institute);*
- 17:20 Photoluminescence Enhancement by Coupling of Localized Surface Plasmons to Excitons in Self-organized InAs Quantum Dots  
*Alexander Nikolaevich Kosarev (Ioffe Institute); Vladimir V. Chaldyshev (Ioffe Institute); Nikita Toropov (ITMO University); Igor Gladskikh (ITMO University); Polina Gladskikh (ITMO University); Valeriy Preobrazhenskiy (Rzhanov Institute of Semiconductor Physics); Michael Putyato (Rzhanov Institute of Semiconductor Physics); Boris Semyagin (Rzhanov Institute of Semiconductor Physics); Alexey Kondikov (Peter the Great St. Petersburg Polytechnic University); Tigran Vartanyan (ITMO University);*
- 17:40 Exciton-assisted Enhancement of TMOKE in the Semiconductor Structures  
*Olga Borovkova (Russian Quantum Center); Nikolai Evgenyevich Khokhlov (Lomonosov Moscow State University); Felix Spitzer (Technische Universität Dortmund); Ilya A. Akimov (University of Dortmund); Vladimir I. Belotelov (Russian Quantum Center); Maciej Wiater (Institute of Physics, Polish Academy of Sciences); Tomasz Wojtowicz (Institute of Physics, Polish Academy of Sciences); Grzegorz Karcewski (Institute of Physics, Polish Academy of Sciences); Dmitri Yakovlev (University of Dortmund); Manfred Bayer (Technische Universität Dortmund);*

18:00 Phonon-mediated Light-matter Interaction Processes  
Invited in H-BN  
*Bernard Gil (Université de Montpellier);*

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**Session 2P8**

**FocusSession.SC3: Photonic Topological Materials and Quantum Optics**

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**Tuesday PM, May 23, 2017**

**Room B5**

Organized by Mauro Antezza, George W. Hanson

Chaired by Mauro Antezza, George W. Hanson

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14:10 Optical Spin Hall Effect in Spatially Inhomogeneous  
Invited Tellegen Media  
*Ruo-Yang Zhang (The Hong Kong University of Science and Technology); Mo-Lin Ge (Beijing Institute Technology); Che Ting Chan (The Hong Kong University of Science and Technology);*

14:30 Ultrafast and Quantum Phenomena with Graphene  
KeynotePlasmons  
*Javier Garcia De Abajo (ICFO-Institut de Ciències Fotoniques, The Barcelona Institute of Science and Technology);*

15:00 Robust Qubit Entanglement in Photonic Topological  
Invited Insulator Environments  
*Seyyed Ali Hassani Gangaraj (Iran University of Science & Technology); George W. Hanson (University of Wisconsin-Milwaukee); Mauro Antezza (Université de Montpellier);*

15:20 Combining One-dimensional Nanoscale Waveguide  
Invited and Cold Atoms  
*N. V. Corzo (ENS-PSL Research University, College de France); B. Gouraud (ENS-PSL Research University, College de France); A. Chandra (ENS-PSL Research University, College de France); J. Raskop (ENS-PSL Research University, College de France); D. Kupriyanov (ENS-PSL Research University, College de France); A. S. Sheremet (ENS-PSL Research University, College de France); Julien Lurat (ENS-PSL Research University, College de France);*

15:40 Implementation of Photonic Anomalous Floquet  
Topological Insulators  
*Julia M. Zeuner (Friedrich-Schiller-Universität Jena); Lukas J. Maczewsky (Friedrich-Schiller-Universität Jena); Stefan Nolte (Friedrich-Schiller-Universität Jena); Alexander Szameit (Friedrich-Schiller-Universität Jena);*

16:00 **Coffee Break**

16:20 Coupling Spin Excitons to an Anisotropic Nanopho-  
Keynote tonic Vacuum  
*Stephen Hughes (Queen's University);*

16:50 Two-dimensional Topological Plasmonics

Keynote

*Thomas Christensen (Massachusetts Institute of Technology); D. Jin (University of California); Nicholas X. Fang (Massachusetts Institute of Technology); X. Zhang (University of California); L. Lu (Institute of Physics, Chinese Academy of Sciences); M. Soljacic (Massachusetts Institute of Technology);*

17:20 Quantum Electrodynamics of Topological Insulators:  
Invited From Rotating Dipole Moments to CP Violation

*Stefan Yoshi Buhmann (University of Freiburg); S. Fuchs (University of Freiburg); J. A. Crosse (New York University Shanghai & New York University); Valery N. Marachevsky (Saint Petersburg State University); S. Scheel (University of Rostock);*

17:40 Observation of Topological Edge States in One-, Two-, and Three-dimensional Electromagnetic Structures  
*Alexey P. Slobozhanyuk (ITMO University); Alexander N. Poddubny (ITMO University); Alexander B. Khanikaev (ITMO University); Yuri S. Kivshar (Australian National University);*

17:55 Dissipative and Dispersive Quantum Electromagnet-  
Invited ics: A Novel Approach

*Wei E. I. Sha (The University of Hong Kong); Aiyin Y. Liu (University of Illinois); Weng Cho Chew (University of Illinois);*

18:15 Experiment Realization of Synthetic Weyl Points in  
Invited Optical Regime

*Qiang Wang (Nanjing University); Meng Xiao (Stanford University); Hui Liu (Nanjing University); Shi-Ning Zhu (Nanjing University); C. T. Chan (The Hong Kong University of Science and Technology);*

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**Session 2P9**

**Novel Frequency Selective Structures and Antennas**

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**Tuesday PM, May 23, 2017**

**Room B3**

Organized by Zhongxiang Shen

Chaired by Zhongxiang Shen

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14:20 RCS Enhancement of Cylindrical Objects Based on  
Metasurfaces

*Yuping Shang (Nanyang Technological University); Zhongxiang Shen (Nanyang Technological University);*

- 14:40 Power Combining in THz Band by Quasi Optical Technique  
*L. H. Huang (Southeast University); Wen-Bin Dou (Southeast University);*
- 15:00 Far-infrared Single-band and Dual-band Absorbers Based on Metal-insulator-metal Microcavities with Arrays of Joint Cross Holes  
*Pei-Kang Chung (National Chiao Tung University); Shun-Tung Yen (National Chiao Tung University);*
- 15:20 Stop-band Frequency-selective Structures for Controlling Back-scattering Pattern of L-band Linear Antenna Arrays  
*A. Yu. Grinev (Moscow Aviation Institute); Alexander P. Volkov (Moscow Aviation Institute, JSC Corporation "Vega"); I. I. Krasnolobov (Institute for Theoretical and Applied Electromagnetics of The Russian Academy of Sciences); K. M. Baskov (Institute for Theoretical and Applied Electromagnetics of The Russian Academy of Sciences); V. V. Kakshin (JSC Corporation "Vega");*
- 15:40 Adaptive Impedance-matching Network for Wireless Power Transfer System with Off-center Receiver  
*Vladimir N. Yashchenko (St. Petersburg Electrotechnical University "LETI"); Viacheslav M. Turgaliev (St. Petersburg Electrotechnical University "LETI"); Dmitry S. Kozlov (St. Petersburg Electrotechnical University "LETI"); Irina Vendik (Saint Petersburg Electrotechnical University); Alexandr Katsay (High-Tech Ltd.);*
- 16:00 **Coffee Break**
- 16:20 Enhancing Diamond Fluorescence via Optimized Single and Dimer Nanorod Configurations  
*Andras Szenes (University of Szeged); Balazs Banhelyi (University of Szeged); Tibor Csendes (University of Szeged); Maria Csete (University of Szeged);*
- 16:40 Dual-band Dual-polarized Hybrid Cylindrical Dielectric Resonator Antenna for Wireless Applications  
*Anand Sharma (Indian School of Mines); Gourab Das (Indian School of Mines); Ravi Kumar Gangwar (Indian School of Mines);*
- 17:00 Experimental Investigation on Probe Feed Equilateral Triangular Dielectric Resonator Antenna for 5.8 GHz ISM Band (IEEE 802.11)  
*Pinku Ranjan (Indian Institute of Technology (Indian School of Mines)); Anand Sharma (Indian School of Mines); Ravi Kumar Gangwar (Indian School of Mines);*

- 17:20 Power Characteristics of Varactor-controlled Tunable Bandpass Filters on Lumped Elements  
*Alexandra Baskakova (St. Petersburg Electrotechnical University "LETI"); Viacheslav M. Turgaliev (St. Petersburg Electrotechnical University "LETI"); Dmitry V. Kholodnyak (St. Petersburg Electrotechnical University "LETI");*

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### Session 2P\_10

### FocusSession.SC2: Metamaterials and Transformation Optics 2

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Tuesday PM, May 23, 2017

Room R11

Organized by Hongsheng Chen, Yu Luo

Chaired by Bin Zheng, Guixin Li

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- 14:20 Multipolar Interference Effects in Nanophotonics  
Invited  
*Wei Liu (National University of Defense Technology);*
- 14:40 Rotational Doppler Effect and Nonlinear Geometry  
Invited  
Berry Phase  
*Guixin Li (Southern University of Science and Technology); Thomas Zentgraf (University of Paderborn); Shuang Zhang (University of Birmingham);*
- 15:00 Hot-electron Photodetection Based on Tamm Plasmons from One-dimensional Photonic Structure  
Invited  
*Cheng Zhang (Soochow University); Runfeng Li (Soochow University); Xiaofeng Li (Soochow University);*
- 15:20 Conformal Talbot Effect  
Invited  
*Xiang Yang Wang (Nanjing University); Huanyang Chen (Xiamen University); Hui Liu (Nanjing University); Lin Xu (Xiamen University); Shi-Ning Zhu (Nanjing University);*
- 15:40 Nanofocusing with Full Impedance-matched Hyperlenses  
Invited  
*Lian Shen (Zhejiang University); Ludmila J. Prokopenko (Purdue University); Hongsheng Chen (Zhejiang University); Alexander V. Kildishev (Purdue University);*
- 16:00 **Coffee Break**
- 16:20 Transformation-optics Description of Fano Resonances  
*Jing Jiang (Nanyang Technological University); Yu Luo (Nanyang Technological University); Baile Zhang (Nanyang Technological University);*



- 16:40 Design and Optimization of Artificial Magnetic Conductor for Aperture Coupled SatCom Antenna  
*Yavuz Asci (Ege University); Mustafa Pehlivan (Ege University); Olcay Yigit (Ege University); Korkut Yegin (Ege University);*
- 17:00 All-band GNSS Antenna with Artificial Magnetic Conductor  
*Olcay Yigit (Ege University); Korkut Yegin (Ege University);*
- 17:20 Metasurface Holograms Based on Multi-layered Chiral Nanostructures  
*Fei Fei Qin (Harbin Institute of Technology); Jun Jun Xiao (Harbin Institute of Technology);*
- 17:40 Anderson Transition in Metamaterials  
Invited  
*Kenneth Morgan Golden (University of Utah);*
- 18:00 Time-varying Metamaterials for RFID Applications  
Invited  
*D. Filonov (Tel Aviv University); Amir Boag (Tel Aviv University); Pavel B. Ginzburg (ITMO University);*

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**Session 2P\_11a**

**SC3: Ultrafast Nonlinear Optics: Nonlinear Sources and Materials 2**

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**Tuesday PM, May 23, 2017**

**Room R10**

Organized by Michelle Y. Sander, Zhiwen Liu  
Chaired by Michelle Y. Sander, Jungwon Kim

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- 14:00 Giant Red-shift of a Supercontinuum under Filamentation of near-IR Femtosecond Radiation in Pure and Neodymium Doped YAG Crystals  
*F. V. Potemkin (M.V.Lomonosov Moscow State University); E. A. Migal (M.V.Lomonosov Moscow State University); Kirill Vyacheslavovich Lvov (M.V.Lomonosov Moscow State University);*
- 14:20 Elliptically-polarized High Harmonics Generation in Bichromatic Circular-polarized Laser Fields  
*Andrey A. Yakovlev (M.V. Lomonosov Moscow State University); A. V. Andreev (M.V. Lomonosov Moscow State University); Sergey Yurievich Stremoukhov (M. V. Lomonosov Moscow State University);*

- 14:40 Superresonant Parametric Generation in Nonlinear Photonic Crystals  
*Ottavia Jedrkiewicz (CNR and CNISM UdR Com); Alessandra Gatti (CNR and CNISM UdR Com); Enrico Brambilla (Universita dell'Insubria); Gintaras Tamosauskas (Vilnius University); Paolo Di Trapani (University of Insubria and CNISM UdR Como); Katia Gallo (KTH — Royal Institute of Technology);*

- 15:00 Measuring the Electro-optic Kerr Effect in Air via the Keynote Carrier-envelope Phase

*T. Feng (Max-Born-Institut); N. Raabe (Max-Born-Institut); P. Rustige (Max-Born-Institut); Guenter Steinmeyer (Max-Born-Institut fur Nichtlineare Optik und Kurzzeitspektroskopie);*

- 15:30 Nonlinear Chalcogenide Materials and Devices

Invited

*Juliet T. Gopinath (University of Colorado Boulder);*

- 15:50 Resonant Processes of Quantum Electrodynamics in a Pulsed Laser Field

*Sergei P. Roshchupkin (Peter the Great St. Petersburg Polytechnic University); Viktor V. Dubov (Peter the Great St. Petersburg Polytechnic University);*

- 16:00 **Coffee Break**

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**Session 2P\_11b**

**FocusSession.SC3: Nanolasers: Physics, Technology, Applications 2**

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**Tuesday PM, May 23, 2017**

**Room R10**

Organized by Eli Kapon  
Chaired by Eli Kapon

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- 16:20 Exploration of Pulse Generation at the Meso- and Nanolaser Threshold  
*T. Wang (INRS-EMT); H. Vergnet (Ecole Normale Supérieure de Lyon); Gian Luca Lippi (Universite Cote Azur);*
- 17:00 Lasing in Dark and Bright Modes of a Finite-sized Plasmonic Lattice at Visible Wavelengths  
*Tommi K. Hakala (Aalto University); H. T. Rekola (Aalto University); Aaro I. Väkeväinen (Aalto University); J.-P. Martikainen (Aalto University); Marek Nečada (Aalto University); A. J. Moilanen (Aalto University); Päivi Törmä (Aalto University);*

## 17:20 2D Materials Based Nanolasers

Invited

*Yongzhuo Li (Tsinghua University); Jianxing Zhang (Tsinghua University); Dandan Huang (Tsinghua University); Hao Sun (Tsinghua University); Fan Fan (Tsinghua University); Jiabin Feng (Tsinghua University); Zhen Wang (Tsinghua University); Cun-Zheng Ning (Arizona State University);*

## 17:40 Photon Statistics and Non-equilibrium Dynamics in Photonic Crystal Coupled Nanolasers

Invited

*M. Marconi (Universite Paris-Sud); J. Javaloyes (Universitat de les Illes Balears); F. Raineri (Universite Paris-Sud); Ariel Levenson (Laboratoire de Photonique et de Nanostructures (CNRS UPR20)); A. M. Yacomotti (Laboratoire de Photonique et de Nanostructures (CNRS UPR20));*

18:00 Spontaneous Emission and Lasing Dynamics of Buried-heterostructure and Sub- $\lambda$  Nanowire Nanolasers in Photonic Crystal Platform

Invited

*Masaya Notomi (NTT Corporation);*

## 18:20 Nanoscale Light Emitters and Their Dynamics for Chip-scale Integration

Invited

*Yeshiahu Shaya Fainman (University of California at San Diego);*

## 14:40 A Distributed Fiber-optic Vibration Sensor for Power-frequency Electric-field Sensing

*Lutang Wang (Shanghai University); Nian Fang (Shanghai University);*

## 15:00 Distributed Optical Fiber Sensing System Based on Active Interference in a Semiconductor Optical Amplifier

*Nian Fang (Shanghai University); Sujie Guo (Shanghai University); Lutang Wang (Shanghai University); Zhaoming Huang (Shanghai University);*

## 15:20 Phase-sensitive Optical Time-domain Reflectometry with Pulse Mode EDFA: Probe Pulse Preparation

*Anton O. Chernutsky (Bauman Moscow State Technical University); A. A. Zhirnov (Bauman Moscow State Technical University); A. K. Fedorov (Bauman Moscow State Technical University); E. T. Nesterov (Bauman Moscow State Technical University); K. V. Stepanov (Bauman Moscow State Technical University); Ya. A. Tezadov (Scientific and Technological Enterprise IRE-Polyus); E. V. Kondrashin (Scientific and Technological Enterprise IRE-Polyus); V. E. Karasik (Bauman Moscow State Technical University); A. B. Pnev (Bauman Moscow State Technical University);*

## 16:00 Coffee Break

**Session 2P\_12a****SC3: Optical Fiber Sensors****Tuesday PM, May 23, 2017****Room R9**

Organized by Xuewen Shu

Chaired by Xuewen Shu

## 14:00 The Design and Performance of a Fully Distributed Optical Fiber Acoustic Field Sensor

Invited

*Xuping Zhang (Nanjing University); Feng Wang (Nanjing University); Yixin Zhang (Nanjing University); Yanzhu Hu (Beijing University of Posts and Telecommunications);*

## 14:20 Wavelength Dependence of Gamma-ray Radiation Sensitivity of Co/Fe Co-doped Alumino-silicate Glass Optical Fiber for Dosimeter Application

*Seongmin Ju (Gwangju Institute of Science and Technology); Ju Hyun Lee (EXATTO Co. Ltd.); Seung Ho Lee (Gwangju Institute of Science and Technology); Yuseung Lee (Gwangju Institute of Science and Technology); Jihoon Kim (Gwangju Institute of Science and Technology); Yong-Tak Ryu (Gwangju Institute of Science and Technology); Won-Taek Han (Gwangju Institute of Science and Technology);*

**Session 2P\_12b****Integrated and Fiber-based Photonic Circuits and Devices 2****Tuesday PM, May 23, 2017****Room R9**

Organized by Alexander S. Sigov, Mikhail E. Belkin

Chaired by Alexander S. Sigov, Mikhail E. Belkin

## 16:20 Asymmetric Waveguide Design of Laser Diodes for Pico- and Nanosecond Pulse Generation in the Eye Safe Spectral Range: Linear and Nonlinear Electromagnetic Effects

*Eugene A. Avrutin (University of York); Boris S. Ryvkin (University of Oulu); Juha T. Kostamovaara (University of Oulu);*

## 16:40 Analysis of Fast Electro-optical Modulation of Vertically Integrated Coupled-cavity VCSELs

*Naser F. Albugami (University of York); Eugene A. Avrutin (University of York);*

- 17:00 Optical RF Self-interference Cancellation for Full-duplex Communication Using an Integrated DP-MZM  
*Xiuyou Han (Dalian University of Technology); Bofan Huo (Dalian University of Technology); Yuchen Shao (Dalian University of Technology); Mingshan Zhao (Dalian University of Technology);*
- 17:20 Efficient on Chip Single Photon Sources Using Slow Light and Site Controlled QDs  
*Bruno Rigal (Ecole Polytechnique Federale de Lausanne); T. Produit (Ecole Polytechnique Federale de Lausanne); C. Jarlov (Ecole Polytechnique Federale de Lausanne); Benjamin Dwir (Ecole Polytechnique Federale de Lausanne (EPFL)); Alok Rudra (Ecole Polytechnique Federale de Lausanne (EPFL)); A. Delgoffe (Ecole Polytechnique Federale de Lausanne); Alexey Lyasota (Ecole Polytechnique Federale de Lausanne); Eli Kapon (Ecole Polytechnique Federale de Lausanne (EPFL));*
- 17:40 Long Optical Path on Chip with Photonic Crystal Based 2D Integrating Cell  
*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);*
- 18:00 Design of Millimeter-wave Band Electro-optical Modulators Using Off-the-shelf Microwave Electronic CAD Tool NI AWRDE  
*Mikhail E. Belkin (Moscow Technological University MIREA); Vladislav Golovin (Sevastopol State University (SevSU)); Yuri Tyschuk (Sevastopol State University (SevSU)); Alexander S. Sigov (Moscow Technological University (MIREA));*
- 18:20 Electrically Driven Magnetic Domain Wall as a Magneto-optical Nanodevice for Radiophotonics  
*Nikolai Evgenyevich Khokhlov (Lomonosov Moscow State University); Anastasiya Evgenyevna Khramova (Lomonosov Moscow State University); Elena Petrovna Nikolaeva (Lomonosov Moscow State University); Tatiyana Borisovna Kosykh (Lomonosov Moscow State University); A. V. Nikolaev (Lomonosov Moscow State University); Alexander Pavlovich Pyatakov (Lomonosov Moscow State University); V. I. Belotelov (Lomonosov Moscow State University);*

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**Session 2P\_13**  
**Microwave Filters and Resonators**

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**Tuesday PM, May 23, 2017**

**Room R8**

Chaired by Thottam S. Kalkur

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- 14:00 A Novel Tunable Dual-band Bandstop Filter (DBBSF) Using Spurlines with a Stepped Impedance Resonator  
*Hamad G. Alrwuili (University of Colorado Colorado Springs); Thottam S. Kalkur (University of Colorado Colorado Springs);*
- 14:20 Dual-mode Bandpass Filter with Tunable Transmission Zeros Based on Liquid Crystal Technology  
*Zhihui Cao (Chinese Academy of Sciences, University of Science and Technology of China); Chang Chen (Chinese Academy of Sciences, University of Science and Technology of China); Mingkan Li (Chinese Academy of Sciences, University of Science and Technology of China); Zhiping Yin (Hefei University of Technology); Lingyun Zhou (Chinese Academy of Sciences, University of Science and Technology of China); Weidong Chen (University of Science and Technology of China);*
- 14:40 Lossy Acoustic Filter Synthesis by Gradient-based Optimization Technique  
*Iuliia Evdokimova (Universitat Autònoma de Barcelona); Jordi Verdu (Universitat Autònoma de Barcelona); Pedro de Paco (Universitat Autònoma de Barcelona);*
- 15:00 Switchable and Tunable Band Stop Filter  
*Abdulhamid Matoug (University of Colorado Colorado Springs); Thottam S. Kalkur (University of Colorado Colorado Springs);*
- 15:20 Design of SHF 3-bit Reconfigurable Band Rejection Filter  
*Yusuke Imai (The University of Electro-Communications); Yuki Kada (The University of Electro-Communications); Yasushi Yamao (The University of Electro-Communications);*
- 15:40 A Narrowband Absorptive Band-stop Filter Based on a Resistor-loaded Compact Resonator  
*Gang Liu (Southeast University); Jinping Xu (Southeast University); Zhiqiang Liu (Southeast University);*
- 16:00 **Coffee Break**
- 16:20 Compact Dual-band Power Divider with Highly Selective Bandpass Response  
*Chi-Feng Chen (Tunghai University); Guo-Yun Wang (Tunghai University); Jhong-Jhen Li (Tunghai University);*

- 16:40 Compact Ezy Array Reconfiguration for Filter Design  
*Hayder S. Ahmed (Home 8, Street 36, Site 409, Utaifiyya);*
- 17:00 A Novel Dual-band Bandpass Filter Using Nested Quarter-mode Substrate Integrated Waveguides  
*Mingkang Li (Chinese Academy of Sciences, University of Science and Technology of China); Chang Chen (Chinese Academy of Sciences, University of Science and Technology of China); Xiang Zhang (Chinese Academy of Sciences, University of Science and Technology of China); Zhihui Cao (Chinese Academy of Sciences, University of Science and Technology of China); Weidong Chen (University of Science and Technology of China);*
- 17:20 Circuit Analysis of Coupled Lines and Open Stubs Based UWB Microstrip BPF  
*Achmad Munir (Institut Teknologi Bandung);*
- 17:40 Finite Element Simulation of Switchable and Tunable Resonators with BST  
*Daw Asderah (University of Colorado Colorado Springs); Thottam S. Kalkur (University of Colorado Colorado Springs);*
- 15:00 Color Digital Holographic Microscopy for In-flow Observation of Plankton Microorganisms  
*Jerome Dohet-Eraly (Universite Libre de Bruxelles); Catherine Yourassowsky (Universite Libre de Bruxelles); Frank Dubois (Universite Libre de Bruxelles);*
- 15:20 3D Printing of Polymer Structures by Two-photon Polymerization Using Q-switched Microchip Laser  
*D. Perevoznik (Laser Zentrum Hannover e.V.); Kestutis Kurselis (Laser Zentrum Hannover e.V.); R. Kiyan (Laser Zentrum Hannover e.V.); Elina K. Nepomnyashchaya (Peter the Great Saint Petersburg Polytechnic University); Evgenii T. Aksenov (St. Petersburg State Polytechnical University); E. N. Velichko (Peter the Great Saint Petersburg Polytechnic University); Boris N. Chichkov (Laser Zentrum Hannover e.V.);*
- 15:40 Brillouin Optical Spectrum Analyzer Based on Self-sweeping Fiber Laser  
*Alina Yu. Tkachenko (Institute of Automation and Electrometry of SB RAS); Ivan A. Lobach (Institute of Automation and Electrometry SB RAS); S. I. Kablukov (Institute of Automation and Electrometry, SB, RAS);*

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#### Session 2P\_14a

#### Oral Presentations for Best Student Paper Awards — SC3: Optics and Photonics

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Tuesday PM, May 23, 2017

Room B4

Chaired by Atsushi Kanno, Cees Ronda

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- 14:00 Classification of Interference Signals Using Advanced Baseband Statistics in  $\pi/4$ -DQPSK Systems  
*Maximilian Wolfel (Laboratory for Circuit Design, Hochschule Aschaffenburg); Ulrich Bochtler (University of Applied Sciences Aschaffenburg); Thomas F. Eibert (Technical University of Munich); Christoph Schmitt (KaiTec GmbH);*
- 14:20 Optoelectronic Oscillator with Delay Elements in Optical and RF Domain  
*Larissa Aguiar Dantas de Britto (Sao Jose dos Campos); Jognes Panasiewicz Junior (National Institute for Space Research — INPE); Gefeson Mendes Pacheco (Aeronautics Technical Institute);*
- 14:40 Photonic Interferometry Based Optical Carrier Cancellation for Optical Interference Noise Reduction  
*S. M. Kang (Yonsei University); S. M. Jung (Yonsei University); K. H. Mun (Yonsei University); Sang-Kook Han (Yonsei University);*

16:00 Coffee Break

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#### Session 2P\_14b

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

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Tuesday PM, May 23, 2017

Room B4

Chaired by Tsuneki Yamasaki, Michael A. Bisyarin

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- 16:20 Edge States of Bound Photon Pairs: Topology and Interactions  
*Maxim A. Gorlach (ITMO University); Alexander N. Poddubny (ITMO University; Ioffe Institute);*
- 16:40 Toroidal Dipole Associated Resonant Forward Scattering of Light by Silicon Nanoparticles  
*Pavel D. Terekhov (ITMO University); Kseniia V. Baryshnikova (ITMO University); Alexander Sergeevich Shalin (Ulyanovsk Branch of the Institute of Radio Engineering and Electronics, Russian Academy of Sciences); Alina Karabchevsky (Ben-Gurion University of the Negev); Andrey B. Evlyukhin (Laser Zentrum Hannover e.V.);*

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| <p>17:00 Towards Solving Lippmann-Schwinger Integral Equation in 2D with Polylogarithmic Complexity with Quantized Tensor Train Decomposition<br/><i>Alexey I. Boyko (Skolkovo Institute of Science and Technology); Ivan V. Oseledets (Institute for Numerical Mathematics RAS); Nikolai A. Gippius (Skolkovo Institute of Science and Technology);</i></p> <p>17:20 Vico-Greengard-Ferrando Quadratures in the Tensor Solver for Integral Equations<br/><i>Valentin Khrulkov (Skolkovo Institute of Science and Technology); M. Rakhuba (Skolkovo Institute of Science and Technology); Ivan V. Oseledets (Institute for Numerical Mathematics RAS);</i></p> <p>17:40 Collective Behavior of Multiple Atoms in General Electromagnetic Environments: Dressed Atom Fields and Bound States<br/><i>Aiyin Y. Liu (University of Illinois); Weng Cho Chew (University of Illinois);</i></p> <p>18:00 The Riemann-Silberstein Vectors Theory and Vector Spherical Expansion<br/><i>Igor V. Belkovich (JSC "Special Research Bureau of Moscow Power Engineering Institute (OKB MEI)"); Boris L. Kogan (JSC "Special Research Bureau of Moscow Power Engineering Institute (OKB MEI)");</i></p> <p>18:20 Radiation of a Charge Intersecting the Boundary between Area with Dielectric Layer and Vacuum Area inside a Cylindrical Waveguide<br/><i>Aleksandra Andreevna Grigoreva (St. Petersburg State University); Sergey Nikolaevich Galyamin (St. Petersburg State University); Andrey Viktorovich Tyukhtin (St. Petersburg State University); Viktor Viktorovich Vorobev (St. Petersburg State University);</i></p> | <p>2 Sparse Normalized Maximum Correntropy Criterion Algorithm with <math>l_1</math>-norm Penalties for Channel Estimation<br/><i>Yingsong Li (Harbin Engineering University); Zhan Jin (Harbin Engineering University); Yanyan Wang (Harbin Engineering University); Rui Yang (Huazhong Agricultural University);</i></p> <p>3 An Enhanced Mixed Norm Error Criterion Adaptive Filtering Algorithm for Sparse Channel Estimation<br/><i>Yanyan Wang (Harbin Engineering University); Yingsong Li (Harbin Engineering University); Ming Diao (Harbin Engineering University);</i></p> <p>4 The Freshness Analysis of an Apple and a Potato Using Dielectric Properties at the Microwave Frequency Region<br/><i>Kayhan Ates (Akdeniz University); Hamza Feza Carlak (Akdeniz University); Sukru Ozen (Akdeniz University);</i></p> <p>5 Investigation of Interaction Femtosecond Laser on Chicken Skin<br/><i>Pavel Yu. Rogov (ITMO University); Victor G. Besspalov (ITMO University); Sergey E. Putilin (ITMO University); S. S. Nalegaev (ITMO University);</i></p> <p>6 Communication Technology for Industry 4.0<br/><i>Petr Marcon (Brno University of Technology); Frantisek Zezulka (Brno University of Technology); Ivo Vesely (Brno University of Technology); Zoltan Szabo (Brno University of Technology); Zdenek Roubal (Brno University of Technology); Ondrej Sajdl (Brno University of Technology); Eva Gescheidtova (Brno University of Technology); Premysl Dohnal (Brno University of Technology);</i></p> <p>7 Periodical Structures and Multiscale Modelling<br/><i>Pavel Fiala (Brno University of Technology); P. Werner (Brno University of Technology); Pavel Osmera (Brno University of Technology); Eva Gescheidtova (Brno University of Technology); Petr Drexler (Brno University of Technology); Tomas Kriz (Brno University of Technology);</i></p> <p>8 Electronic Transmission of Ethynyl-oestradiol in Menopausal Women<br/><i>Ida Ferrara (Clinical Biophysics International Research Group); Alberto Foletti (University of Applied Sciences of Southern Switzerland — SUPSI);</i></p> <p>9 Towards a Biophysical Management of Neck Pain and Disability<br/><i>Alberto Foletti (Clinical Biophysics International Research Group); Paolo Baron (Clinical Biophysics International Research Group);</i></p> |
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- Session 2P0**

**Poster Session 4**

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**Tuesday PM, May 23, 2017**

**14:00 PM - 19:00 PM**

**Room B2**

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| <p>1 UV to THz Photo-detection with Ferroelectric Single Crystals Using MoS<sub>2</sub> and Ag Nanowire Electrodes<br/><i>Huajing Fang (The Hong Kong Polytechnic University); Qingfeng Yan (Tsinghua University); Jiyang Dai (The Hong Kong Polytechnic University);</i></p> |  |
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- 10 Electrical Impedance Tomography Methods and Algorithms Processed with a GPU  
*Jan Dusek (Brno University of Technology); David Hladky (Brno University of Technology); Jan Mikulka (Brno University of Technology);*
- 11 Digital Signal Processing of the Doppler Blood Flow Meter Using the Methods of Nonlinear Dynamics  
*Mikhail A. Basarab (Bauman Moscow State Technical University); Natalia Konnova (Bauman Moscow State Technical University); Dmitrii Basarab (St. Ioasaf's Belgorod Regional Hospital); Dmitrii D. Matsievskiy (Institute of General Pathology and Pathophysiology);*
- 12 Vital Signs Detection via Doppler Radar and CFAR in Complex Environment  
*Fengbo Yang (National University of Defense Technology); Yi Su (National University Of Defense Technology);*
- 13 Wearable Wireless ECG Sensor  
*Vladimir Pleskachev (St. Petersburg Electrotechnical University);*
- 14 Optimization of Microwave Hyperthermia Applicator System for Deep Placed Tumors Treatment in Head and Neck Area  
*Ondrej Fiser (Czech Technical University in Prague); Ilja Merunka (Czech Technical University in Prague); Jan Vrba (Czech Technical University in Prague);*
- 15 Pulse Sensing Using Flipped-phase Frequency of the Reflection Coefficient of a Radiator  
*Yao-Chiang Kan (Yuan Ze University); Huey-Ru Chuang (National Cheng Kung University); H.-C. Lin (China Medical University);*
- 16 Effects of 2G Mobile Phone Exposure on Both Behavioural Performance and Levels of Enzyme from NMDA-dependent Pathway  
*Cigdem Gokcek-Sarac (Akdeniz University); Sukru Ozen (Akdeniz University); Narin Derin (Akdeniz University);*
- 17 Magnetic Field Risk Analysis for Employees and Patients Due to Power Transformers in Hospital Buildings  
*Sukru Ozen (Akdeniz University); Hamza Feza Carlak (Akdeniz University); Omer H. Colak (Akdeniz University); Selcuk Helhel (Akdeniz University);*
- 18 Optical Properties of Nanostructured Cerium Dioxide-on-aluminium Films for SERS-active Substrates  
*A. D. Brozhek (A. M. Prokhorov General Physics Institute, Russian Academy of Sciences); V. I. Fabelinskii (A. M. Prokhorov General Physics Institute, Russian Academy of Sciences); Dimitrii N. Kozlov (A. M. Prokhorov General Physics Institute, Russian Academy of Sciences); S. N. Orlov (A. M. Prokhorov General Physics Institute, Russian Academy of Sciences); Yu. N. Polivanov (A. M. Prokhorov General Physics Institute, Russian Academy of Sciences); I. A. Shcherbakov (A. M. Prokhorov General Physics Institute, Russian Academy of Sciences); V. V. Smirnov (A. M. Prokhorov General Physics Institute, Russian Academy of Sciences); K. A. Vereshchagin (A. M. Prokhorov General Physics Institute, Russian Academy of Sciences); K. N. Afanasiev (Institute for Theoretical and Applied Electromagnetics, Russian Academy of Sciences); Andrey N. Lagarkov (Institute for Theoretical and Applied Electromagnetics, Russian Academy of Sciences); Alexander M. Merzlikin (Institute for Theoretical and Applied Electromagnetics of the Russian Academy of Sciences); Ilya A. Ryzhikov (VNIIA); Andrey K. Sarychev (Institute for Theoretical and Applied Electrodynamics);*
- 19 Waveguide Plasmon Resonance of Arrayed Metallic Nanostructures Patterned on a Soft Substrate by Direct Contact Printing Lithography  
*Wei-Xiang Su (National Cheng-Kung University); Chun-Ying Wu (National Cheng-Kung University); Yung-Chun Lee (National Cheng-Kung University);*
- 20 Suppression of CC-FWM Inter-channel Crosstalk Using Unequal Channel Spacing in an 8-channel WDM Transmission System with Parametric Amplification  
*Sergejs Olonkins (Riga Technical University); Igors Stankunovs (Riga Technical University); Dmitrijs Pilats (Riga Technical University); Vjaceslavs Bobrovs (Riga Technical University);*
- 21 Investigation of Amplification Span Length Impact on the Quality of the Signal in WDM Transmission Systems with Erbium-doped Fiber Amplifiers  
*Julija Putrina (Riga Technical University); Sergejs Olonkins (Riga Technical University); Vjaceslavs Bobrovs (Riga Technical University);*
- 22 High-sensitivity Fabry-Pérot Strain Sensor Based on Splicing Collapse at the PCF-SMF Joint  
*Haifeng Liu (Nankai University); Bo Liu (Nankai University);*

- 23 Influence of Structure and Doping Concentration on SBS Fast Light in Photonic Crystal Fibers  
*Shuaibin Niu (Lanzhou University of Technology); Shanglin Hou (Lanzhou University of Technology); Daobin Wang (Lanzhou University of Technology); Jingli Lei (Lanzhou University of Technology); Xiaoxiao Li (Lanzhou University of Technology); Yuanyuan Ma (Lanzhou University of Technology);*
- 24 Effects of Power and Shape of Pump Light on Pulse Compression Based on Stimulated Brillouin Scattering  
*Yuanyuan Ma (Lanzhou University of Technology); Shanglin Hou (Lanzhou University of Technology); Daobin Wang (Lanzhou University of Technology); Jingli Lei (Lanzhou University of Technology); Xiaoxiao Li (Lanzhou University of Technology);*
- 25 Radiofrequency Fiber-optic Probe for Surface Temperature Measurement with High Spatial Resolution  
*Dmitrii V. Protasenya (Moscow Institute of Physics and Technology (State University)); Georgy A. Aloyan (Moscow Institute of Physics and Technology (State University)); Anastasia S. Alexahina (Moscow Institute of Physics and Technology (State University)); Oleg A. Ryabushkin (State University);*
- 26 Measurements of Value and Location of Multiple Spots of Thermal Impacts on Long FBG  
*Sergey S. Yakushin (Novosibirsk State University); Alexandr V. Dostovalov (Novosibirsk National Research State University); A. A. Wolf (Novosibirsk State University); A. V. Parygin (Institute of Automation and Electroetry, SB, RAS); S. A. Babin (Institute of Automation and Electroetry, SB, RAS);*
- 27 Spectral Effective Solutions for Mixed Line Rate WDM-PON Systems  
*Inna Kurbatska (Riga Technical University); Vjaceslavs Bobrovs (Riga Technical University); Anita Alsevska (Riga Technical University); Ilya Lyashuk (Riga Technical University); Lilita Gegere (Riga Technical University);*
- 28 An ACO-OFDM Receiver Design and Implementation for Optical Wireless Communications  
*Muh-Tian Shiue (National Central University); Syu-Siang Long (National Central University); Yang-Chieh Ou (National Central University);*
- 29 A Compact Dual-band MIMO WLAN and Bluetooth Antenna  
*Mehmet Abbak (Vestel Elektronik Sanayi ve Ticaret); Hakan Falakalioglu (Vestel Elektronik Sanayi ve Ticaret); Mehmet Akif Bakirli (Vestel Elektronik Sanayi ve Ticaret); Ali Bas (Vestel Elektronik Sanayi ve Ticaret);*
- 30 Ferroelectric Film mm-wave Tripler for Elevated Power Applications  
*Valentina V. Medvedeva (Saint Petersburg Electrotechnical University "LETI"); Tatyana Borisovna Samoilo (Saint Petersburg Electrotechnical University "LETI"); Anatoly Konstantinovich Mikhailov (Saint-Petersburg State Electrotechnical University (LETI)); Roman Andreevich Platonov (Saint Petersburg Electrotechnical University "LETI"); Andrey Borisovich Kozyrev (Saint-Petersburg Electrotechnical University);*
- 31 A New MEM-DOA Proposal for DSM in a Grid Connected Smart Microgrid  
*Chafaa Hamrouni (University of Gabes); Abdessalem Bsis (University of Gabes); Rached Hamza (University of AL MANAR); Mohamed Naceur Abdelkrim (Ecole Nationale d'Ingenieurs de Gabes);*
- 32 Development of the Concept and the Layout of the Spacecraft Docking Station Based on Bulk High-temperature Superconductors  
*Mikhail A. Basarab (Bauman Moscow State Technical University); Vladimir N. Gerdy (Bauman Moscow State Technical University); Boris S. Lumin (MSU named after M.V. Lomonosov); Valerii A. Matveev (Bauman MSTU); Nikolay A. Nizhelsky (Bauman Moscow State Technical University); Mikhail A. Sysoev (Bauman Moscow State Technical University);*
- 33 Implement the Digitally Controlled Current-mode DC-DC Buck Converter with Wide-load Regulation  
*Muh-Tian Shiue (National Central University); Yang-Chieh Ou (National Central University); Syu-Siang Long (National Central University);*
- 34 Equipment for Power Line Communication Based on Single-carrier System for Home Automation System  
*Jan Slacik (Brno University of Technology); Petr Mlynek (Brno University of Technology); Radek Fudjak (Brno University of Technology); Jiri Misurec (Brno University of Technology);*
- 35 Analyze Punch-through and Reach-through Breakdown Voltage in N+PN+ and N+P+NN+ Sandwich Structures  
*Lei Zhao (Southwest Jiaotong University); Quanyuan Feng (Southwest Jiaotong University); Jinyan Liu (Southwest Jiaotong University); Zhixiong Di (Southwest Jiaotong University); Qianying Xiang (Southwest Jiaotong University);*

- 36 Influence of SiO<sub>2</sub>/Si Interface Charge on Performance of UMOS  
*Sijie Zeng (Southwest Jiaotong University); Quanyuan Feng (Southwest Jiaotong University); Xiaopei Chen (Southwest Jiaotong University); Tao Jin (Southwest Jiaotong University); Zhengxi Zhao (Southwest Jiaotong University);*
- 37 The Research of Threshold Voltage between Theoretical Computation and Simulation  
*Xiaopei Chen (Southwest Jiaotong University); Quanyuan Feng (Southwest Jiaotong University); Tao Jin (Southwest Jiaotong University); Sijie Zeng (Southwest Jiaotong University); Zhengxi Zhao (Southwest Jiaotong University);*
- 38 Buried-Oxide-In-Drift-Region Technique for Breakdown Voltage of Trench Power MOSFETs  
*Zhengxi Zhao (Southwest Jiaotong University); Quanyuan Feng (Southwest Jiaotong University); Xiaopei Chen (Southwest Jiaotong University); Sijie Zeng (Southwest Jiaotong University);*
- 39 A Compact S-band GaN Quasi-MMIC Power Amplifier Using Silicon IPDs  
*Dongsu Kim (Korea Electronics Technology Institute); Hyeok Kim (Korea Electronics Technology Institute); Hongsun Yoon (Korea Electronics Technology Institute); Jong Min Yook (Korea Electronics Technology Institute); Jun-Chul Kim (Korea Electronics Technology Institute); Youngcheol Park (Hankuk University of Foreign Studies);*
- 40 A GaN X-band Power Amplifier with Internal Capacitor Array Matching Networks  
*Hyeok Kim (Korea Electronics Technology Institute); Dongsu Kim (Korea Electronics Technology Institute); Jong Min Yook (Korea Electronics Technology Institute); Jae-Woong Park (RFHIC Corporation); Byoung-Gon Han (RFHIC Corporation); Samuel Cho (RFHIC Corporation);*
- 41 Electrical and Thermal Modeling of through Glass Vias in 2.5D Integration  
*Libo Qian (Ningbo University); Ge Shi (Ningbo University); Yidie Ye (Ningbo University);*
- 42 Compact Dual-band Microstrip Band Pass Filter Design Based on Stub Loaded Resonator for Wireless Applications  
*Mohammed Fadhel Hasan (University of Technology); Ali Sadeq Abdulhadi Jalal (Al-Nahrain University); Emad Shehab Ahmed (University of Technology);*
- 43 Compact Dual-band Bandpass Filter Based on Fractal Stub-loaded Resonator  
*Hadi T. Ziboon (University of Technology); Jawad K. Ali (University of Technology);*
- 44 Modeling of a Novel Microstrip Ring Resonator for Wireless Applications  
*Seyi Stephen Olokede (University of Johannesburg); Babu Sena Paul (University of Johannesburg);*
- 45 Equivalent Circuit Characterization of a Novel Microstrip Ring Resonator Bandpass Filter  
*Seyi Stephen Olokede (University of Johannesburg); Babu Sena Paul (University of Johannesburg);*
- 46 Design of a Narrow-band Microstrip Ring Resonator Bandpass Filter  
*Seyi Stephen Olokede (University of Johannesburg); Babu Sena Paul (University of Johannesburg);*
- 47 Broadband Eight-way Coaxial Waveguide High Power Combiner/Divider  
*Mohsen Abdolahi (Isfahan University of Technology (IUT)); Mohammad Mahdi Sabahi (Isfahan University of Technology (IUT)); Zohre Pourgholamhossein (Isfahan University of Technology (IUT)); Hamid Mir-mohammad Sadeghi (Isfahan University of Technology (IUT));*
- 48 Development and Application of the Multifractal Model of Ionospheric Turbulence for Characterization of Fluctuations of Transionospheric Signals  
*Vadim E. Gherm (University of St. Petersburg); E. V. Makarenkova (University of St. Petersburg);*
- 49 Study on Dual-threshold Detection Method for Dual-polarization Receiving Radar  
*Longfei Shi (National University of Defense Technology); Chuqiao Mao (National University of Defense Technology); Gang Cui (National University of Defense Technology); Jiazi Ma (National University of Defense Technology); Yongzhen Li (National University of Defense Technology);*
- 50 Ionosphere Effect Estimation in Micro-Doppler Signature Extraction for P-band Radar Targets  
*Wenjue Yue (National University of Defense Technology); Bo Peng (National University of Defense Technology); Xizhang Wei (National University of Defense Technology); Xiang Li (National University of Defense Technology);*
- 51 The Troposcatter Channel Fading and Diffusion Modeling for Multi-beamforming in Receiving Antennas  
*Mengnan Wang (National University of Defense Technology); Zhuang Wang (National University of Defense Technology); Cheng Zhu (National University of Defense Technology);*



- 52 Possible Enhancements of TEC and Their Effects on Radio Propagation in Mexican Region  
*Olga A. Maltseva (Southern Federal University); M. A. Sergeeva (Universidad Nacional Autonoma de Mexico); J. A. Gonzalez-Esparza (Universidad Nacional Autonoma de Mexico); V. De la Luz (Universidad Nacional Autonoma de Mexico);*
- 53 The Response of the Ionospheric TEC on Travelling Convection Vortices  
*Vladimir Eugenievich Pronin (M. V. Lomonosov Moscow State University); V. A. Pilipenko (Institute of Physics of the Earth); V. I. Zakharov (M. V. Lomonosov Moscow State University); D. L. Murr (Augsburg College);*
- 54 Strong Range SF Observed in Low Latitude Ionosphere over Ascension IS in Atlantic Ocean  
*Zheng Wang (National Space Science Center, CAS); Jiankui Shi (National Space Science Center, CAS); Guojun Wang (Center for Space Science and Applied Research, CAS); Xiao Wang (National Space Science Center, CAS); Konstantin G. Ratovsky (Institute of Solar-Terrestrial Physics, SB RAS); Elena B. Romanova (Institute of Solar-Terrestrial Physics, SB RAS);*
- 55 Efficient Pumping Scheme of Er-doped DFB Fiber Laser with Suppressed Relaxation Oscillations  
*Vladimir A. Akulov (Inversion Fiber Co. Ltd.); Aleksandr A. Vlasov (Institute of Automation and Electrometry); Sergey A. Babin (Institute of Automation and Electrometry SB RAS); Mikhail I. Skvortsov (Institute of Automation and Electroetry, SB, RAS);*
- 57 An Ultra-thin Polarization-insensitive Wide-angle Metamaterial Absorber  
*Zhiming Liu (Nanjing University of Aeronautics and Astronautics); Hai Feng Zhang (Nanjing University of Aeronautics and Astronautics); Shaobin Liu (Nanjing University of Aeronautics and Astronautics); Bo-Rui Bian (Nanjing University of Aeronautics and Astronautics); Xiang-Kun Kong (Nanjing University of Aeronautics and Astronautics);*
- 58 A Novel Reconfigurable Electromagnetically Induced Transparency Based on Solid State Plasma  
*Xue Feng (Nanjing University of Aeronautics and Astronautics); Shaobin Liu (Nanjing University of Aeronautics and Astronautics); Hai Feng Zhang (Nanjing University of Aeronautics and Astronautics); Yong-Diao Wen (Nanjing University of Aeronautics and Astronautics); Xiang-Kun Kong (Nanjing University of Aeronautics and Astronautics); Ling-Ling Wang (Nanjing University of Aeronautics and Astronautics);*
- 61 Detection Mechanism and Magnetic Field Distribution Characteristics for Plate Remote-field Eddy-current Testing  
*Peihua Chen (Wenzhou Medical University); Pingjie Huang (Zhejiang University);*
- 62  $\pm$ Electron's Helical Structure and Mass Radius Relation  
*Sen Nian Chen ((National) Hua Qiao University);*
- 63 Multiphysics Simulation of InP NWT for High Speed Digital Applications  
*Neel Chatterjee (Amity University Uttar Pradesh); Pradeep Kumar (Amity University Uttar Pradesh); Hemender Pal Singh (Amity University); Malay Ranjan Tripathy (Amity University Uttar Pradesh); Sujata Pandey (Amity University);*
- 64 Simulations of a Few-mode Fiber Optic Link  
*Vladimir A. Burdin (Povolzhskiy State University of Telecommunications and Informatics (PSUTI)); Anton V. Bourdine (Povolzhskiy State University of Telecommunications and Informatics (PSUTI));*
- 65 Microwave Radio Radiation — Modern Threat to the Life of Humanity  
*Victor A. Ovsyannikov (Ioffe Institute);*
- 66 GLR Test for Minimum Detectable Velocity Indication in OFDM Radar  
*Jiahua Zhu (National University of Defense Technology); Chongyi Fan (National University of Defense Technology); Pengzheng Lei (National University of Defense Technology); Xiaotao Huang (National University of Defense Technology); Zhi-Min Zhou (National University of Defense Technology);*
- 67 Fast Algorithm for Suppressing Sidelobes at Specified Intervals  
*Liang Tang (National University of Defense Technology); Yongfeng Zhu (National University of Defense Technology); Qiang Fu (National University of Defense Technology);*
- 68 SAR Target Recognition via Linear t-stochastic Neighbor Embedding and Sparse Representation  
*Meiting Yu (National University of Defense Technology); Lingjun Zhao (National University of Defense Technology); Siqian Zhang (National University of Defense Technology); Gangyao Kuang (National University of Defense Technology);*
- 69 Analysis of Micro-motion Model for Radar Target  
*Wenchao Li (National University of Defense Technology); Boli Xiong (National University of Defense Technology); Gangyao Kuang (National University of Defense Technology);*

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**Session 3A1a**  
**SC3: Optical Materials: Fundamentals and Applications**

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**Wednesday AM, May 24, 2017**

**Room G5**

Organized by Cees Ronda

Chaired by Cees Ronda

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**09:00 SiN<sub>x</sub>-based Hybrid Integrated Photonic Devices**

*Yujie Chen (Sun Yat-sen University); Zengkai Shao (Sun Yat-sen University); Zeru Wu (Sun Yat-sen University); Pengfei Xu (Sun Yat-sen University); Tianyou Zhang (Sun Yat-sen University); Zeming Fan (Sun Yat-sen University); Yuanhui Wen (Sun Yat-sen University); Zhuohui Yang (Sun Yat-sen University); Lin Liu (Sun Yat-sen University); Lidan Zhou (Sun Yat-sen University); Chunchuan Yang (Sun Yat-sen University); Zhiren Qiu (Sun Yat-sen University); Yanfeng Zhang (Sun Yat-sen University); Siyuan Yu (Sun Yat-sen University);*

**09:20 The Effect of Band Bending on Luminescence Properties of Zinc Oxide Ceramics**

*Kirill A. Chernenko (Peter the Great Saint-Petersburg State Polytechnic University); E. I. Gorokhova (Research and Technological Institute of Optical Materials All-Russia Scientific Center "S.I. Vavilov State Optical Institute"); Herfried Wiczorek (Philips Research Eindhoven); D. Buettner (Philips Research Eindhoven); W. Keur (Philips Research Eindhoven); Piotr A. Rodnyi (Peter the Great Saint-Petersburg Polytechnic University);*

**09:40 Temperature Dependence of Photo- and Radioluminescence of (Gd,Y)<sub>3</sub>Al<sub>5</sub>O<sub>12</sub>:Ce<sup>3+</sup> Mixed Oxide Garnet Ceramics**

*Ivan D. Venevtsev (Peter the Great Saint-Petersburg Polytechnic University); Vasilii Khanin (Peter the Great Saint-Petersburg Polytechnic University); Piotr A. Rodnyi (Peter the Great Saint-Petersburg Polytechnic University); Herfried Wiczorek (Philips Research Eindhoven); Cees Ronda (Philips Research Eindhoven);*

**10:00 Optical Properties of Hybrid Photonic Crystals Ge<sub>2</sub>Sb<sub>2</sub>Te<sub>5</sub>/opal: Theory and Experiment**

*Sergey A. Dyakov (Skolkovo Institute of Science and Technology); M. M. Voronov (Physical-Technical Institute); S. A. Yakovlev (Ioffe Physical-Technical Institute of the Russian Academy of Sciences); Ilya A. Akimov (University of Dortmund); A. B. Pevtsov (Ioffe Physical-Technical Institute of the Russian Academy of Sciences); Sergei G. Tikhodeev (Lomonosov Moscow State University); N. A. Gippius (Skolkovo Institute of Science and Technology);*

**10:20 Multi-photon Phosphors**

Invited

*Andries Meijerink (Utrecht University); T. Senden (Utrecht University); D. Yu (Utrecht University); Q.-Y. Zhang (Utrecht University); M. De Jong (Utrecht University); Freddy T. Rabouw (Utrecht University);*

**10:40 Influence of Traps on Afterglow Properties in Mixed Oxide Garnet Scintillators**

Invited

*Vasilii Khanin (Peter the Great Saint-Petersburg Polytechnic University); Ivan D. Venevtsev (Peter the Great Saint-Petersburg Polytechnic University); Kirill A. Chernenko (Peter the Great Saint-Petersburg State Polytechnic University); Piotr A. Rodnyi (Peter the Great Saint-Petersburg Polytechnic University); Jack Boerekamp (Philips Research Eindhoven); Sandra Spoor (Philips Research Eindhoven); Daniela Buettner (Philips Research Eindhoven); Anne-Marie Van Dongen (Philips Research Eindhoven); Herfried Wiczorek (Philips Research Eindhoven); Cees Ronda (Philips Research Eindhoven);*

**11:00 Coffee Break**

**11:20 Efficient Combination of Interference and Plasmon Resonance Raman Amplification by Optimized Heterostructures for Optical Microscopy and Molecule Detection**

*Leo Alvarez-Fraga (Instituto de Ciencia de Materiales de Madrid); Esteban Climent-Pascual (Instituto de Ciencia de Materiales de Madrid); Montserrat Aguilar-Pujol (Instituto de Ciencia de Materiales de Madrid); Rafael Ramirez-Jimenez (Universidad Carlos III de Madrid); Felix Jimenez-Villacorta (Instituto de Ciencia de Materiales de Madrid); Carlos Prieto (Instituto de Ciencia de Materiales de Madrid); Alicia de Andres (Instituto de Ciencia de Materiales de Madrid);*

**Session 3A1b****Plasmas, Nonlinear Media, Fractal, Chiral Media****Wednesday AM, May 24, 2017****Room G5**

Chaired by Chuxin Chen, Hao Jun Xu

- 11:40 Numerical Blow-up Diagnostics for Differential Equation Solutions  
*Alexander A. Belov (Lomonosov Moscow State University); Maxim O. Korpusov (Lomonosov Moscow State University);*
- 12:00 Substorm Onset: A Switch on the Sequence of Transport from Decreasing Entropy to Increasing Entropy  
*Chuxin Chen (University of Science and Technology of China);*
- 12:20 Reconfiguration of Plasma Antenna Using 3D FDTD Method  
*Selcuk Alparslan Avci (Gazi University); Erkan Afacan (Gazi University);*
- 12:40 Study on Application of Closed Cavity ICP in Inlet Stealth  
*Jun Lin Chen (Air Force Engineering University); Hao Jun Xu (Air Force Engineering University); Xiao Long Wei (Air Force Engineering University); Zhi Jie Song (Air Force Engineering University);*

**Session 3A2****Chaotic Signals: Generation, Emission, Propagation and Reception 1****Wednesday AM, May 24, 2017****Room G6**

Organized by Alexander S. Dmitriev

Chaired by Alexander S. Dmitriev

- 09:00 Chaotic Synchronous Response in Multipath Channel  
*Lev V. Kuzmin (Institute of Radio Engineering and Electronics of the RAS); Yuri V. Andreyev (Moscow Institute of Physics and Technology);*
- 09:20 The Interaction between Ultrawideband Chaotic Radio Pulses and Medium within Living Organisms  
*Anton Igorevich Ryzhov (Institute of Radio Engineering and Electronics of RAS); Maxim G. Popov (Institute of Radio Engineering and Electronics of RAS);*

- 09:40 Multipath Propagation of Ultrawideband Chaotic Radio Pulses in Wireless Local Area Networks  
*Lev V. Kuzmin (Institute of Radio Engineering and Electronics of the RAS); Vadim Lazarev (Moscow Institute of Physics and Technology (State University)); Maxim Popov (Institute of Radio Engineering and Electronics of the RAS);*

- 10:00 Radiation Characteristics of Ensemble of UWB Chaotic Sources  
*Yuri V. Andreyev (Moscow Institute of Physics and Technology);*

- 10:20 Chaotic Communications for the Internet of Things  
*Alexander S. Dmitriev (Kotel'nikov Institute of Radio Engineering and Electronics of RAS);*

- 10:40 Identification System Based on Ultrawideband Direct Chaotic Communication System  
*Maxim G. Popov (Institute of Radio Engineering and Electronics of RAS); V. A. Lazarev (Kotel'nikov Institute of Radio-engineering and Electronics of RAS); Mark Yu. Gerasimov (Kotel'nikov Institute of Radio Engineering and Electronics of RAS);*

**11:00 Coffee Break**

- 11:20 Chaos, Nonlinear Waves and Structure of Decisions Nonlinear Differential Equation  
*Roman I. Dzerzhinskiy (Moscow Technological University (MIREA)); S. V. Sidorov (Moscow State Academy of Water Transport);*

- 11:40 Designing a Printed Miniature Antenna for 3–5 GHz Range Integrated on PCB with UWB Direct Chaotic Transceiver Module  
*Anton V. Uvarov (Moscow Institute of Physics and Technology (State University)); Mark Yu. Gerasimov (Kotel'nikov Institute of Radio Engineering and Electronics of RAS); Andrey V. Uvarov (Moscow Institute of Physics and Technology (State University));*

- 12:00 Remote Wireless Control of Modeling Parameters of Interacting Dynamical Systems in Active Ultrawideband Wireless Networks  
*Ruslan Yemelyanov (Institute of Radio Engineering and Electronics of RAS); Mark Gerasimov (Institute of Radio Engineering and Electronics of RAS); Alexander S. Dmitriev (Kotel'nikov Institute of Radio Engineering and Electronics of RAS); Yuri V. Andreyev (Moscow Institute of Physics and Technology);*

- 12:20 Topological Properties of Networks of Microwave Oscillators  
*Ansar R. Safin (National Research University "Moscow Power Engineering Institute"); N. Udalov (National Research University "MPEI"); M. Kapranov (National Research University "MPEI"); Elena D. Surovyatkina (Space Research Institute of Russian Academy of Sciences); J. Kurths (University of Potsdam);*

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### Session 3A3

#### Noninvasive Examination Techniques in Industry and Biomedicine 1

Wednesday AM, May 24, 2017

Room G7

Organized by Fedor Alexandrovich Gubarev

Chaired by Prabhu Rajagopal, Fedor Alexandrovich Gubarev

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- 09:00 Feature-enhanced Guided Ultrasonic Waves: New Paradigms for NDE & SHM  
*Invited Prabhu Rajagopal (Indian Institute of Technology-Madras);*
- 09:20 Interaction of Guided Ultrasonic Waves with Transverse Cracks in Laminated Composite Plate Structures  
*Saurabh Gupta (Indian Institute of Technology-Madras); Prabhu Rajagopal (Indian Institute of Technology-Madras);*
- 09:40 Topographic Metamaterials for Ultrasonic Non-destructive Evaluation  
*C. T. Manjunath (IIT Madras); Prabhu Rajagopal (Indian Institute of Technology-Madras);*
- 10:00 Aluminum Nanopowder Combustion Monitoring Using an Optical System with Brightness Amplification  
*Fedor Alexandrovich Gubarev (Tomsk Polytechnic University); Andrei Vladimirovich Mostovshchikov (Tomsk Polytechnic University); Alexander Petrovich Il'in (Tomsk Polytechnic University); Lin Li (Tomsk Polytechnic University);*
- 10:20 The Assessment of Crack Formation Processes in Reinforced Concrete under Uniaxial Compression by Parameters of the Electric Response to Mechanical Impact  
*Tatyana V. Fursa (National Research Tomsk Polytechnic University); Maxim V. Petrov (National Research Tomsk Polytechnic University); Denis D. Dann (National Research Tomsk Polytechnic University);*

- 10:40 Subwavelength Imaging of Cracks in Metallic Materials  
*Kiran Kumar Amireddy (Indian Institute of Technology-Madras); Krishnan Balasubramaniam (Indian Institute of Technology); Prabhu Rajagopal (Indian Institute of Technology-Madras);*

#### 11:00 Coffee Break

- 11:20 Terahertz Spectroscopy of Polymerization Process: Prospectives in Terahertz Non-destructive Evaluations of Polymer Composite Materials Manufacturing  
*Egor V. Yakovlev (Bauman Moscow Technical University (BMSTU)); Kirill I. Zaytsev (Bauman Moscow State Technical University); Arseniy A. Gavdush (Bauman Moscow Technical University (BMSTU)); Arsen K. Zotov (Bauman Moscow Technical University (BMSTU)); Nikita V. Chernomyrdin (Bauman Moscow State Technical University); Stanislav O. Yurchenko (Bauman Moscow State Technical University);*
- 11:40 Spectral Characteristics of Magnetic Fluid with Particles of Different Dimensions in the Terahertz Frequency Range  
*Denis Olegovich Zytkov (National Research Tomsk Polytechnic University); Alexey Vasilievich Yurchenko (National Research Tomsk Polytechnic University); Vladimir Borisovich Balashov (Research Institute of Semiconductor Devices); Basil Yurchenko (Research Institute of Semiconductor Devices); Alexey Borisov (National Research Tomsk State University);*
- 12:00 Fluctuations in the Values of the Activity Parameters of Micron Iron Powder after Microwave Irradiation  
*Andrei Vladimirovich Mostovshchikov (Tomsk Polytechnic University); Alexander Petrovich Il'in (Tomsk Polytechnic University); P. Yu. Chumerin (Tomsk Polytechnic University); I. K. Kalinich (Tomsk Polytechnic University); A. S. Tsibanev (Tomsk Polytechnic University); Fedor Alexandrovich Gubarev (Tomsk Polytechnic University);*

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### Session 3A4a

#### Computational Electromagnetics 2

Wednesday AM, May 24, 2017

Room G8

Organized by Alexander B. Samokhin

Chaired by Alexander B. Samokhin

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- 09:00 Core Losses Estimation of High Speed Electrical Machines Based on Corrections in Epstein Frame Method Data  
*Wei-Ming Su (National Tsing Hua University); Shang-Hsun Mao (ANSYS Taiwan); Pei Jen Wang (National Tsing Hua University);*
- 09:20 The Bistatic Radar Experiment at Pluto: Surface Characterization through Electromagnetic Modeling  
*Ivan R. Linscott (Stanford University); Michael Bird (Universitat Koln); Chris DeBoy (The Johns Hopkins University); Becca Sepan (The Johns Hopkins University); S. A. Stern (Southwest Research Institute); Michael Vincent (Southwest Research Institute); George Leonard Tyler (Stanford University); L. A. Young (Southwest Research Institute); K. Ennico (NASA Ames Research Center); C. B. Olkin (Southwest Research Institute); H. A. Weaver (The Johns Hopkins University); W. W. Woods (SETI Institute); The New Horizons ATM, COMP and GGI Theme Teams ();*
- 09:40 Numerical Solution of Problem of Electromagnetic Wave Diffraction by a Perfectly Conducting Body of Small Thickness  
*Sergey Nikolaevich Fetisov (Institute of Numerical Mathematics of the Russian Academy of Sciences); Aleksey Viktorovich Setukha (Lomonosov Moscow State University);*
- 10:00 Case Study of Hypersingularity at Sharp Edges in the Simplest Lamellar Grating: Further Mathematical Results  
*Lifeng Li (Tsinghua University); Gunther Schmidt (Weierstrass Institute);*
- 10:20 Modified Thin Dielectric Sheet Model to Efficiently Analyze the High Contrast Problem  
*Yi-Ling Wang (University of Electronic Science and Technology of China (UESTC)); Zaiping Nie (University of Electronic Science and Technology of China); Dingbang Wen (University of Electronic Science and Technology of China);*
- 11:00 **Coffee Break**

**Session 3A4b****The Modern Hybrid Methods in the Problems of Computational Electromagnetics 2****Wednesday AM, May 24, 2017****Room G8**Organized by Victor Filippovich Kravchenko,  
Alexander Nikolaevich BogolyubovChaired by Alexander Nikolaevich Bogolyubov,  
Victor Filippovich Kravchenko

- 11:20 Effective FDTD Modeling of Microwave Ceramics  
*Zhanna O. Dombrovskaya (Lomonosov Moscow State University); Alexander Nikolaevich Bogolyubov (Lomonosov Moscow State University);*
- 11:40 Effects of Cavities RF Field Radial Non-uniformity on Multiple-beam Klystron Efficiency  
*Vladimir E. Rodyakin (Lomonosov Moscow State University); Alexander Nikolaevich Bogolyubov (Lomonosov Moscow State University); Viktor M. Pikunov (Lomonosov Moscow State University); Mikhail I. Svetkin (Lomonosov Moscow State University);*
- 12:00 Joint Application of the Finite Element Method and the Scattering Matrix Method for Solving Diffraction Problems on Multilayer Reflection Gratings  
*Alexey V. Smirnov (M. V. Lomonosov Moscow State University); Andrey A. Petukhov (Moscow State University); D. A. Konyaev (M. V. Lomonosov Moscow State University);*
- 12:20 Stability of the Optical Characteristics of Approximant Structures with Fractal Properties  
*Yuliya Vladimirovna Ryzhikova (Lomonosov Moscow State University); Pavel Vasil'evich Korolenko (Lomonosov Moscow State University); Sergey Borisovich Ryzhikov (Lomonosov Moscow State University);*
- 12:40 The Galerkin-Homotopy Exact Electromagnetic Design of the Waveguide-ladder Structure for the Terahertz Electronics  
*Alexey A. Bykov (Lomonosov Moscow State University); Ivan V. Lopushenko (Lomonosov Moscow State University);*

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**Session 3A5**  
**Terahertz Photonics 1**

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**Wednesday AM, May 24, 2017**

**Room G9**

Organized by Mikhail Konstantinovich Khodzitsky

Chaired by Mikhail Konstantinovich Khodzitsky

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- 09:00 Terahertz Waveguiding in Sapphire Shaped Photonic Crystal  
*Gleb M. Katyba (Institute of the Solid State Physics of Russian Academy of Sciences); Kirill I. Zaytsev (Bauman Moscow State Technical University); Irina A. Shkunova (Institute of Solid State Physics of Russian Academy of Sciences); Stanislav O. Yurchenko (Bauman Moscow State Technical University); Vladimir N. Kurlov (Institute of Solid State Physics of Russian Academy of Sciences);*
- 09:20 High-resolution Terahertz Imaging and Spectroscopy  
*Nikita V. Chernomyrdin (Bauman Moscow State Technical University); Sergey P. Lebedev (A. M. Prokhorov General Physics Institute of the Russian Academy of Sciences); Igor E. Spektor (A. M. Prokhorov General Physics Institute of the Russian Academy of Sciences); Stanislav O. Yurchenko (Bauman Moscow State Technical University); Vladimir N. Kurlov (Institute of Solid State Physics of Russian Academy of Sciences); Kirill I. Zaytsev (Bauman Moscow State Technical University);*
- 09:40 Local Excitation of Resonance Modes in the Sub-THz Planar Resonators by AC Josephson Effect  
*Alexander Snezhko (Kotelnikov Institute of Radio Engineering and Electronics of RAS); Irina Gundareva (Kotelnikov Institute of Radio Engineering and Electronics of RAS); Yuriy Y. Divin (Kotel'nikov Institute of Radio Engineering and Electronics of Russian Academy of Sciences); Valery Pavlovsky (Kotelnikov Institute of Radio Engineering and Electronics of RAS); Vadim Pokalyakin (Kotelnikov Institute of Radio Engineering and Electronics of RAS);*
- 10:00 Antenna Radiation Imitation out Its Real Location Using Hyperbolic Metamaterial Lens via Transformation Optics  
*Viktoriiia Vladimirovna Gill (ITMO University); Anna V. Vozianova (ITMO University); M. K. Khodzitsky (ITMO University);*

- 10:20 Terahertz Plasmon Instabilities in High Mobility Transistors with Grating Gate  
*Aleksandr S. Petrov (Moscow Institute of Physics and Technology); Dmitry Svintsov (Moscow Institute of Physics and Technology); Victor Ryzhii (Tohoku University); Michael Shur (Rensselaer Polytechnic Institute);*
- 10:40 Terahertz Biomedical Imaging: From Multivariate Analysis and Detection to Material Parameter Extraction  
*A. Al-Ibadi (Bordeaux University); J. Bou Sleiman (Bordeaux University); Q. Cassar (Bordeaux University); G. Macgrogan (Institut Bergonie); H. Balacey (Bordeaux University); T. Zimmer (Bordeaux University); P. Mounaix (Bordeaux University); Jean-Paul Guillet (Bordeaux University);*
- 11:00 **Coffee Break**
- 11:20 Investigation of Artificial Dielectric Periodical Structures for Formation of Terajets  
*Alexander Vladimirovich Chernyadiev (ITMO University); A. N. Grebenchukov (ITMO University); Anna V. Vozianova (ITMO University); Mikhail Konstantinovich Khodzitsky (ITMO University);*
- 12:00 Convergence of Electronics and Photonics for THz Systems and Applications — Beamforming  
Invited *Alvaro Morales Vicente (Technical University of Denmark); Idelfonso Tafur Monroy (Technical University of Denmark);*

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**Session 3A6**  
**Remote Sensing Techniques of Earth System Related Components 3**

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**Wednesday AM, May 24, 2017**

**Room G10**

Organized by Jian-Cheng Shi

Chaired by Konstantin Victorovich Muzalevskiy,  
Zhao-Liang Li

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- 09:00 A Generalized Split-window Algorithm for Retrieving Land Surface Temperature from GF-5 Thermal Infrared Data  
*Yu-Ze Zhang (University of Chinese Academy of Sciences); Xiaoguang Jiang (University of Chinese Academy of Sciences); Hua Wu (Institute of Geographic Sciences and Natural Resources Research, Chinese Academy of Sciences);*

- 09:20 On Estimation of Land Surface Longwave Radiation under All-sky Conditions by Combining Multiple Satellite Data of A-train  
*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); Tianjie Zhao (Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences); Dabin Ji (Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences); Chuan Xiong (Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences); Rui Li (Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences);*
- 09:40 The Empirical Method of Soil Temperature Retrieval Based on Radiometer Data MTVZA-GYa on Aboard Russian Satellite Meteor-M No. 2  
*Konstantin Victorovich Muzalevskiy (Kirensky Institute of Physics, Siberian Branch, Russian Academy of Sciences); Z. Ruzicka (Kirensky Institute of Physics, Siberian Branch, Russian Academy of Sciences); Igor V. Savin (Kirensky Institute of Physics, Siberian Branch, Russian Academy of Sciences); M. G. Zahvatov (SRC "Planeta");*
- 10:00 Internal-Blackbody Calibration (IBBC) Approach and Its Operational Application in FY-2 Meteorological Satellites  
*Qiang Guo (National Satellite Meteorological Center);*
- 10:20 A Method of Floor Area Ratio Calculation Based on Remote Sensing Data  
*Zhengchao Chen (Institute of Remote Sensing and Digital Earth, CAS); Bing Zhang (Institute of Remote Sensing and Digital Earth, CAS); Junjie Zhu (Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences); 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);*
- 10:40 Land-cover Classification of Suburban Areas Based on Multi-polarized Airborne SAR Data Using Texture Measures  
*Fumio Yamazaki (Chiba University); Natsuki Samuta (Chiba University); Wen Liu (Chiba University);*
- 11:00 **Coffee Break**
- 11:20 Sentinel-1 SAR Imaging the Dynamic Ocean  
*Xiaofeng Li (National Oceanic and Atmospheric Administration (NOAA));*
- 11:40 Synthetic Aperture Radar Backscattering from Hurricane Wind and Rain Roughened Ocean Surface  
*Xiaofeng Li (National Oceanic and Atmospheric Administration (NOAA)); Guosheng Zhang (Bedford Institute of Oceanography);*
- 12:00 Millimeterwave Clutter Measurements at the Mediterranean Sea at Low Grazing Angles  
*Andreas Danklmayer (Fraunhofer Institute for High Frequency Physics and Radar Techniques (FHR)); Joerg Foerster (Fed Armed Forces Underwater & Marine Geophys Res); Vincent Fabbro (ONERA); Gregor Biegel (Fraunhofer Institute for High Frequency Physics and Radar Techniques); Thorsten Brehm (Fraunhofer FHR); Laurent Castanet (ONERA); J.-P. Marcellin (ONERA); Y. Hurtaud (DGA MI/CGN2/SDO);*
- 12:20 Normalized Radar Backscattering Cross-section and Doppler Shifts of the Sea Surface in Ka-band  
*Yury Yu Yurovsky (FSBSI Marine Hydrophysical Institute RAS); V. N. Kudryavtsev (FSBSI Marine Hydrophysical Institute RAS); S. A. Grodsky (University of Maryland); Bertrand Chapron (IFREMER);*
- 12:40 The Concept Design of a Fore-field Camera for the Intelligent Hyperspectral Remote Sensing Satellite  
*Hao Zhang (Institute of Remote Sensing and Digital Earth, CAS); Zhihua Huang (China University of Mining & Technology); Bing Zhang (Institute of Remote Sensing and Digital Earth, CAS); Zhengchao Chen (Institute of Remote Sensing and Digital Earth, CAS);*

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### Session 3A7

#### Numerical Methods and Simulations in Meta-materials and Photonics

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Wednesday AM, May 24, 2017

Room B1

Organized by Wei Cai, Qing Huo Liu

Chaired by Wei Cai, Qing Huo Liu

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- 09:00 A 3D Discontinuous Galerkin Time-domain Method for Nano Plasmonics with a Nonlocal Dispersion Model  
*Nikolai Schmitt (Cote d'Azur University, Inria, CNRS, LJAD); Jonathan Viquerat (Cote d'Azur, Inria, CNRS, LJAD); Claire Scheid (Cote d'Azur, Inria, CNRS, LJAD); Stephane Lanteri (Cote d'Azur, Inria, CNRS, LJAD); M. Moefertdt (Humboldt-Universitat zu Berlin); Kurt Busch (Humboldt Universitat zu Berlin);*

- 09:20 Maxwell-hydrodynamic Model for Characterizing Nonlinear Plasmonics  
*Ming Fang (University of Hong Kong); Xi-aoyan Y. Z. Xiong (University of Hong Kong); Wei E. I. Sha (University of Hong Kong); Li Jun Jiang (University of Hong Kong); Zhi-Xiang Huang (Anhui University);*
- 09:40 Wide-angle Boundary Models for Metasurfaces  
*Ya Yan Lu (City University of Hong Kong);*
- 10:00 Spectral Element Method for Electromagnetic and Elastic Metamaterials and Periodic Structures  
*Qing Huo Liu (Duke University); Jun Niu (Duke University); Linlin Shi (Xiamen University); Na Liu (Xiamen University);*
- 10:20 Scattering from Finite Periodic Arrays Using Broad-band Green's Function of Periodic Scatterers with Low Wavenumber Extraction (BBGFL)  
*Shurun Tan (University of Michigan); Leung Tsang (University of Michigan);*
- 10:40 The Mixed Finite Element Method for Maxwell's Equations in Metamaterials  
*Ying Cao (Xiamen University); Na Liu (Xiamen University); Qing Huo Liu (Duke University);*
- 11:00 **Coffee Break**
- 11:40 I-shaped Metamaterial Antenna for X-band Applications  
*Prince Jain (PEC University of Technology); Archana Thourwal (PEC University of Technology); Neha Sardana (Institute of Nano Science and Technology); Sanjeev Kumar (PEC University of Technology); Neena Gupta (PEC University of Technology); Arun Kumar Singh (PEC University of Technology);*
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- Session 3A8**  
**MS-2: BRICS Mini-symposium on Nonlinear Photonics and Photonic Assisted Technologies**  
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- Wednesday AM, May 24, 2017**  
**Room B5**  
 Organized by Alexander. P. Alodjants, Yikun Liu  
 Chaired by Alexander. P. Alodjants
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- 09:00 Stabilization of Multidimensional Matter-wave and Keynote Optical Solitons by Spin-orbit Coupling  
*Boris A. Malomed (Tel Aviv University);*
- 09:30 Magnetic vs Electric Nonlinear Response in Nanophotonics  
*Sergey S. Kruk (Australian National University); Dragomir N. Neshev (Australian National University); Yuri S. Kivshar (Australian National University);*
- 10:00 Formation and Dynamics of Exciton Polariton Condensate in a One-dimensional Periodic Lattices  
*Alexander. P. Alodjants (ITMO University); I. Yu. Chestnov (Vladimir State University named after A. G. and N. G. Stoletovs); A. V. Yulin (ITMO University); O. A. Egorov (Friedrich-Schiller-Universitat Jena);*
- 10:20 Spatio-temporal Continuum Generation in Polariton Nonlinear Waveguides  
*Paul M. Walker (University of Sheffield); C. E. Whitaker (University of Sheffield); M. Sich (University of Sheffield); B. Royall (University of Sheffield); I. Farrer (University of Sheffield); M. S. Skolnick (University of Sheffield); D. N. Krizhanovskii (University of Sheffield);*
- 10:40 Light Propagation in Semiconductor Resonant Exciton-polariton Hyperbolic Metamaterials  
*Evgeny S. Sedov (University of Southampton); E. D. Cherotchenko (University of Southampton); I. E. Sedova (Vladimir State University Named after A. G. and N. G. Stoletovs); S. M. Arakelian (Vladimir State University Named after A. G. and N. G. Stoletovs); Alexey V. Kavokin (University of Southampton (GB));*
- 11:00 **Coffee Break**
- 11:20 Effects of Nanoscale V-shaped Pits on GaN Based Light Emitting Diodes  
*Heng Li (National Chiao Tung University); Shuo-Wei Chen (National Chiao Tung University); Chia-Jui Chang (National Chiao Tung University); Tien-Chang Lu (National Chiao Tung University);*
- 12:00 One-dimentional Photonic Crystals Based on Porous Anodic Aluminum Oxide Films  
*Sergey O. Klimonsky (M. V. Lomonosov Moscow State University); V. S. Gorelik (P. N. Lebedev Physical Institute, Russian Academy of Sciences); K. S. Napolskii (M. V. Lomonosov Moscow State University);*
- 12:20 Manipulation of Femtosecond Pulse by Using Cholesteric Liquid Crystals  
*Yikun Liu (Sun Yat-sen University); Tsung-Hsien Lin (National Sun Yat-Sen University); Jianying Zhou (Sun Yat-sen University); Iam-Choon Khoo (Pennsylvania State University);*



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**Session 3A9**
**SC2: Wave Manipulations by Metasurfaces**


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**Wednesday AM, May 24, 2017**
**Room B3**

Organized by Shulin Sun

 Chaired by Shulin Sun, Xiang Xiong
 

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- 09:00 Generation of Isocratic Coherent Optical Beams by  
Invited Binary Geometrical Phase on Metasurface  
*Xiang Xiong (Nanjing University); Z. H. Wang (Nanjing University); S. C. Jiang (Nanjing University); M. Wang (Nanjing University); Ru-Wen Peng (Nanjing University);*
- 09:20 Water-based Metasurfaces — Numerical and Experimental Characterization  
*Rasmus E. Jacobsen (Technical University of Denmark); Andrei V. Lavrinenko (Technical University of Denmark); Samel Arslanagic (Technical University of Denmark);*
- 09:40 Design of Carbon Nanotube/Piezoelectric/Magnetite-based Radar Absorber for Ka-band Frequency Range  
*Dzmitry Bychanok (Research Institute for Nuclear Problems Belarusian State University); Gleb Gorokhov (Research Institute for Nuclear Problems Belarusian State University); Darya Meisak (Research Institute for Nuclear Problems Belarusian State University); Artyom Plyushch (Research Institute for Nuclear Problems Belarusian State University); Polina Kuzhir (Belarusian State University); A. Sokol (Belarusian State University); Konstantin Lapko (Research Institute for Physical Chemical Problems of the Belarusian State University); Angela Sanchez-Sanchez (Institut Jean Lamour — UMR Universite de Lorraine); Vanessa Fierro (Institut Jean Lamour — UMR Universite de Lorraine); Alain Celzard (Institut Jean Lamour — UMR Universite de Lorraine); C. P. Gallagher (University of Exeter); Alastair P. Hibbins (University of Exeter); Feodor Y. Ogrin (University of Exeter); Christian Brosseau (Universite de Bretagne Occidentale);*
- 10:00 Wavefront Shaping to Enhance RF Energy Harvesting in Reverberating Environments  
*Philipp Del Hougne (ESPCI Paris & CNRS); Geoffrey Lerozey (ESPCI Paris and CNRS);*

- 10:20 Pancharatnam-Berry Metasurfaces to Achieve High-efficiency Spoof Surface Plasmon Excitations  
*Jingwen Duan (Fudan University); Huijie Guo (Fudan University); Shaohua Dong (Fudan University); Tong Cai (Fudan University); Weijie Luo (Fudan University); Qiong He (Fudan University); Lei Zhou (Fudan University); Shulin Sun (Fudan University);*
- 10:40 Invisibility Cloak Scheme with Composite Plasmonic Waveguides and Metasurface Overlayers  
*Y. Galutin (Ben-Gurion University of the Negev); E. Falek (Ben-Gurion University of the Negev); Alina Karabchevsky (Ben-Gurion University of the Negev);*
- 11:00 **Coffee Break**
- 11:20 Metamaterials Based on Microstrip Lines: A Physically Reasonable Circuit Model and Its Application  
*Tianlong Wu (Wuhan University of Technology); Jin Yang (Wuhan University of Technology); Wei Li (Wuhan University of Technology); Jie Cao (Wuhan University of Technology); Dawei Hu (Wuhan University of Technology); Yukun Li (Wuhan University of Technology); Jianguo Guan (Wuhan University of Technology);*
- 11:40 Magnetic Light in HRI Metafilms through an Electric and Magnetic Dipole Formulation  
*Diego Romero Abujetas (Consejo Superior de Investigaciones Cientificas (CSIC)); J. J. Saenz (Donostia International Physics Center (DIPC)); Jose A. Sanchez-Gil (CSIC);*
- 12:00 Limitation of the Caustic Method in Tailoring Accelerating Beams  
*Yuanhui Wen (Sun Yat-sen University); Yujie Chen (Sun Yat-sen University); Siyuan Yu (Sun Yat-sen University);*
- 12:20 All-dielectric Metasurface Devices at Visible Wavelengths  
*Qing Zhang (Research Center of Laser Fusion, China Academy of Engineering Physics); Gongwen Gan (University of Electronic Science and Technology of China); Xudong Cui (Research Center of Laser Fusion, China Academy of Engineering Physics);*

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**Session 3A\_10****MS-1: Mini-symposium on Nanophotonics and Metamaterials 3**

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**Wednesday AM, May 24, 2017****Room R11**

Organized by Pavel A. Belov, Andrey A. Bogdanov

Chaired by V. A. Milichko

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09:00 Spectral Behavior of Radially Anisotropic Plasmonic  
Invited Nanospheres*Ari Sihvola (Aalto University); Dimitrios C. Tzarouchis (Aalto University); Pasi Yla-Oijala (Aalto University); Henrik Wallen (Aalto University);*09:20 Resonant-state Expansion — A New Tool in Physics  
Invited*Egor A. Muljarov (Cardiff University);*09:40 Enhanced Opto-acoustics in Non-resonant Metamaterials  
Invited*M. J. A. Smith (University of Sydney); Christian Wolff (University of Technology Sydney (UTS)); Boris T. Kuhlmei (University of Sydney); Christopher G. Poulton (University of Technology Sydney); C. Martijn de Sterke (University of Sydney); Mikhail Lapine (University of Technology Sydney);*

10:00 Optimization for Spatial Separation of Optical Fields' Components in All-dielectric Structures

*Kseniia V. Baryshnikova (ITMO University); Dmitry S. Filonov (National Research University of Information Technologies, Mechanics and Optics (ITMO)); C. R. Simovski (St. Petersburg Institute of Fine Mechanics and Optics); Andrey B. Evlyukhin (Laser Zentrum Hannover e.V.); A. S. Shalin (ITMO University);*10:20 Bound States in the Continuum with Orbital Angular  
Invited Momentum in a Periodic Array of Dielectric Rods and Spheres*Evgeny Bulgakov (Kirensky Institute of Physics); Almas F. Sadreev (L. V. Kirensky Institute of Physics);*

10:40 Optical Bound State in the Continuum in the One-dimensional Photonic Structures: Transition into a Resonant State

*Zarina Failevna Sadrieva (ITMO University); Ivan S. Sinev (ITMO University); Anton K. Samusev (ITMO University); Ivan V. Iorsh (ITMO University); Andrey A. Bogdanov (ITMO University); K. L. Koshelev (ITMO University); O. Takayama (Technical University of Denmark); Radu Malureanu (Technical University of Denmark); Andrei V. Lavrinenko (Technical University of Denmark);*

11:00 Coffee Break

11:20 Mie Bands in All-dielectric High-index Metamaterials  
*M. F. Limonov (ITMO University); A. V. Nikulin (ITMO University); S. V. Li (ITMO University); K. B. Samusev (ITMO University); Yuri S. Kivshar (Australian National University); Mikhail V. Rybin (National Research University for Information Technology, Mechanics and Optics);*

11:40 Highly Absorptive Weakly Reflective Terahertz Metamaterials with Compensated Chirality

*Sergey V. Golod (Institute of Semiconductor Physics, SB RAS); Elena V. Naumova (Institute of Semiconductor Physics, SB RAS); Victor Yakovlevich Prinz (Institute of Semiconductor Physics, SB RAS); Alexander G. Milekhin (Rzhanov Institute of Semiconductor Physics, Russian Academy of Science); Igor V. Semchenko (Francisk Skorina Gomel State University); Sergei A. Khakhomov (Francisk Skorina Gomel State University); Viktor S. Asadchy (Aalto University); Andrei M. Goncharenko (Stepanov Institute of Physics, National Academy of Sciences of Belarus); George V. Sinitsyn (Stepanov Institute of Physics, National Academy of Sciences of Belarus); Andrey V. Lyakhnovich (Stepanov Institute of Physics, National Academy of Sciences of Belarus); Vitalij L. Malevich (Stepanov Institute of Physics, National Academy of Sciences of Belarus);*

12:00 Truncation Effects on the Resonant Properties of Active Coated Nano Particles — From 2D to 3D Active Nano-pills

*Rasmus E. Jacobsen (Technical University of Denmark); Samel Arslanagic (Technical University of Denmark);*12:20 Multipole Scattering of Light by Arbitrary Shaped  
Invited Nanoparticles and Optical Theorem*Andrey B. Evlyukhin (Laser Zentrum Hannover e.V.);*

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**Session 3A\_11****FocusSession.SC3: Advanced Photonic Technologies for Spectroscopic Applications 1**

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**Wednesday AM, May 24, 2017****Room R10**

Organized by Wei Dong Chen, Vincenzo Spagnolo

Chaired by Wei Dong Chen, Vincenzo Spagnolo

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- 09:00 GaSb-based Interband Cascade Lasers Emitting beyond 6  $\mu\text{m}$   
Invited  
*Sven Hoeffling (Universitat Wurzburg); Anne Schade (Universitat Wurzburg); Robert Weih (Universitat Wurzburg); Matthias Dallner (Universitat Wurzburg); Martin Kamp (University of Wurzburg);*
- 09:20 Recent Advances in Quartz Enhanced Photoacoustic Sensors Exploiting Custom Tuning Forks  
Invited  
*Vincenzo Spagnolo (Technical University of Bari); P. Patimisco (Universita degli Studi di Bari and Politecnico di Bari); A. Sampaolo (Technical University of Bari); M. Giglio (Technical University of Bari); H. Zheng (Rice University); L. Dong (Shanxi University); F. K. Tittel (Rice University);*
- 09:40 Development of GaSb Superluminescent LEDs for Integrated Sensing Light Sources  
Invited  
*Soile Suomalainen (Tampere University of Technology); J. Viheriä (Tampere University of Technology); N. Zia (Tampere University of Technology); R. Koskinen (Tampere University of Technology); A. T. Aho (Tampere University of Technology); M. Guina (Tampere University of Technology);*
- 10:00 Photoacoustic Spectroscopy in Gas Mixtures  
Invited  
*Ulrike Willer (Clausthal University of Technology); Mario Mordmüller (Clausthal University of Technology); Wolfgang Schade (Clausthal University of Technology);*
- 10:20 Flame Temperature Measurements in CI Engines Using an Emission Spectroscopy Sensor System  
*Fabian Feldhaus (University of Siegen); Ingo Schmitz (University of Siegen); Thomas Seeger (University of Siegen);*
- 10:35 Industrial Gas Sensing Applications for Cascade Lasers  
Invited  
*Peter Geiser (Norsk Elektro Optikk A/S);*
- 11:00 **Coffee Break**
- 11:20 Frequency-Stabilized Cavity Ring-Down Spectroscopy for Traceable Measurements of Amount of Substance: Application to Water Vapor  
Invited  
*Antonio Castrillo (Universita della Campania "Luigi Vanvitelli"); Eugenio Fasci (Universita della Campania); Livio Gianfrani (Universita della Campania "Luigi Vanvitelli");*
- 11:40 Quartz-enhanced Photoacoustic Sensing Operating in Pure Amplitude and Wavelength Modulation with a 3-section Quantum Cascade Laser  
Invited  
*Pietro Patimisco (Universita degli Studi di Bari and Politecnico di Bari); Angelo Sampaolo (Universita degli Studi di Bari and Politecnico di Bari); Yves Bidaux (Alpes Lasers SA); Alfredo Bismuto (Alpes Lasers SA); Marshall Scott (Thorlabs Inc.); James Jiang (Thorlabs Inc.); Frank K. Tittel (Rice University); Vincenzo Spagnolo (Technical University of Bari);*
- 12:00 Optimization of the Evanescent Wave Fiber Sensors for Mid-infrared Spectroscopy  
*Svetlana V. Korsakova (Saratov State University); Elena A. Romanova (Saratov State University); Andrei G. Rozhnev (Saratov State University); Alexander P. Velmuzhov (Institute of Chemistry of High Purity Substances of the RAS); Tatyana V. Kotereva (Institute of Chemistry of High Purity Substances of the RAS); Maxim V. Sukhanov (Institute of Chemistry of High Purity Substances of the RAS); Vladimir S. Shiryayev (Institute of Chemistry of High Purity Substances of the RAS);*
- 12:15 Mid-infrared Photothermal Spectroscopy: Linear and Nonlinear Techniques for High Resolution Sensing  
*Atcha Totachawattana (Boston University); Shyamsunder Erramilli (Boston University); Michelle Y. Sander (Boston University);*
- 12:30 Identification of Pure Rotational CARS Spectra Influenced by High Temperature Gradients  
*Christian Meissner (University of Siegen); Thomas Seeger (University of Siegen);*
- 12:45 Near-infrared Cavity-enhanced Absorption Spectroscopy for Detection of Natural Gases  
*Neeraj Prakash (University of Calgary); Ke Du (University of Calgary); Arun Ramachandran (National Institute of Technology Calicut); Ravi Varma (National Institute of Technology Calicut); Jun Chen (University of Shanghai for Science and Technology); Shuaishuai Yu (University of Shanghai for Science and Technology); Claudio Mazzoleni (Michigan Technological University);*

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**Session 3A\_12**
**Nonlinear and Extreme Nanophotonics 1**


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**Wednesday AM, May 24, 2017**
**Room R9**

Organized by Andrey A. Fedyanin, Yuri S. Kivshar

Chaired by Yuri S. Kivshar

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- 09:20 Multipolar and Multimodal Nonlinear Nanophotonics  
*Daria A. Smirnova (Australian National University); Yuri S. Kivshar (Australian National University);*
- 09:40 Chip-based Optical Isolator with Parametric Amplification in a High-Q Microcavity System  
*Min Xiao (Nanjing University); Xiaoshun Jiang (Nanjing University); Shiyue Hua (Nanjing University); Jianming Wen (Yale University); Liang Jiang (Yale University);*
- 10:00 Third-order Optical Nonlinearity in Metallic Nanostructures: Experiments and Modeling  
*Invited Giuseppe Della Valle (Politecnico di Milano); Stefano Longhi (Politecnico di Milano); Giulio Cerullo (Politecnico di Milano);*
- 10:20 Efficient Third Harmonic Generation in All-dielectric and Dielectric-metallic Nanoantennas Excited at Anapole Modes  
*Gustavo Grinblat (Imperial College London); Y. Li (Imperial College London); T. Shibanuma (Imperial College London); Michael P. Nielsen (Imperial College London); Pablo Albella (Imperial College London); Rupert Francis Oulton (Imperial College London); Stefan Alexander Maier (Imperial College London);*
- 11:00 **Coffee Break**
- 11:20 Controlling Second-harmonic Generation at the Nanoscale with Monolithic AlGaAs-on-AlO<sub>x</sub> Antennas  
*Costantino De Angelis (University of Brescia); L. Carletti (University of Brescia); D. Rocco (University of Brescia); Andrea Locatelli (Università degli Studi di Brescia); V. F. Gili (Université Paris Diderot-CNRS); M. Ravaro (Université Paris Diderot-CNRS); Ivan Favero (Université Paris Diderot, UMR7162, CNRS); Giuseppe Leo (Université Paris Diderot); Marco Finazzi (Politecnico di Milano); L. Ghirardini (Politecnico di Milano); M. Celebrano (Politecnico di Milano); Giuseppe Marino (King's College London); Anatoly V. Zayats (King's College London);*
- 11:40 THz Electric Field-induced Second Harmonic Generation in Ferroelectric Thin Film BaSrTiO<sub>3</sub>  
*Kirill Grishunin (MIREA, Moscow Technological University); Nikita A. Ilyin (MIREA, Moscow Technological University); Natalia E. Sherstyuk (MIREA, Moscow Technological University); Elena D. Mishina (MIREA, Moscow Technological University); Alexey Kimel (Radboud University Nijmegen); Vladimir M. Mukhortov (Southern Scientific Center of Russian Academy of Sciences); Andrey V. Ovchinnikov (Joint Institute for High Temperatures of the Russian Academy of Sciences (JIHT RAS)); Oleg Chefonov (Joint Institute for High Temperatures of the Russian Academy of Sciences (JIHT RAS)); Mikhail B. Agranat (Joint Institute for High Temperatures of the Russian Academy of Sciences (JIHT RAS));*
- 12:00 Highly Sensitive Photodetector Based on Transition Metal Dichalcogenides Monolayer  
*Anastasia Pavlovna Shestakova (Moscow Technological University (MIREA)); Sergey Lavrov (Moscow Technological University (MIREA)); Elena D. Mishina (Moscow State Technical University of Radioengineering, Electronics and Automation (MSTU-MIREA)); Yurii Efimenkov (NPP "PULSAR");*

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### Session 3A\_13

#### Plasmon-assisted Effects in Nanoparticles and Nanostructures: From Field Enhancement to Material Modifications 1

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Wednesday AM, May 24, 2017

Room R8

Organized by Tatiana E. Itina

Chaired by Tatiana E. Itina

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- 09:00 Combined SPR, Electrochemistry, and Fluorescence  
*Invited Spectroscopy Approach for Biomarkers Detection*  
*Lang Zhou (Auburn University); Bryan A. Chin (Auburn University); Aleksandr L. Simonian (National Science Foundation);*
- 09:20 Plasmon Resonances Metal Nanoparticle Arrays with  
*Invited Quadrupole Coupling*  
*Andrey B. Evlyukhin (Laser Zentrum Hannover e.V.);*

09:40 Picosecond Control of Plasmonic Nanoantennas Driven by Hot-spot Induced Phase-transition in VO<sub>2</sub>  
*Luca Bergamini (University of the Basque Country UPV-EHU); Y. Wang (University of Southampton); J. M. Gaskell (University of Salford); Nerea Zabala (University of the Basque Country UPV-EHU); C. H. de Groot (University of Southampton); David W. Sheel (Salford University); J. Aizpurua (Donostia International Physics Center DIPC); Otto L. Muskens (University of Southampton);*

10:00 Metal-carbyne Clusters for SERS Realization

Invited

*Alexey O. Kucherik (Stoletovs' Vladimir State University); Alexandre A. Antipov (Stoletovs' Vladimir State University); Stella V. Kutrovskaia (Stoletovs' Vladimir State University); Anton Osipov (Stoletovs' Vladimir State University); Sergey M. Arakelyan (Stoletovs' Vladimir State University);*

10:20 White Light Generation in Gold Films near Percolation Threshold

*Sergey M. Novikov (University of Southern Denmark); Christian Frydendahl (Technical University of Denmark); Jonas Beermann (University of Southern Denmark); Vladimir A. Zenin (University of Southern Denmark); Nicolas Stenger (Technical University of Denmark); Victor Coello (CICESE Monterrey); N. Asger Mortensen (Technical University of Denmark); Sergey I. Bozhevolnyi (University of Southern Denmark);*

11:00 **Coffee Break**

11:20 Plasmon Modes of Vertically Aligned Superlattices  
*Konstantin Filonenko (Syddansk Universitet); Lars Duggen (Syddansk Universitet); Morten Willatzen (Technical University of Denmark);*

11:40 Bulk Photoemission from Plasmonic Nanoparticles: Physical Models and Software Tools

*Renat Sh. Ikhsanov (National Research University Higher School of Economics); A. V. Novitsky (Technical University of Denmark); Igor E. Protsenko (Lebedev Physical Institute); Alexander V. Uskov (Lebedev Physical Institute);*

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**Session 3A\_14**  
**Quantum Optics 1**

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**Wednesday AM, May 24, 2017**

**Room B4**

Organized by Byoung Seung Ham, Xiaoying Li

Chaired by Xiaoying Li, Ruifang Dong

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09:00 Coherent Population Oscillation-based Light Storage  
*P. Neveu (Universite Paris-Sud); M.-A. Maynard (Universite Paris-Sud); R. Bouchez (Universite Paris-Sud); J. Lugani (Universite Paris-Sud); R. Ghosh (Shiv Nadar University); F. Bretenaker (CNRS); F. Goldfarb (Universite Paris-Sud); Etienne Brion (CNRS/Universite Paris-Sud/ENS-Cachan);*

09:20 Understanding of Collective Coherence Conversion in Photon Echoes for Quantum Memory Applications  
*Byoung Seung Ham (Gwangju Institute of Science and Technology);*

09:40 Quantum State Model of Non-radiative Decay for Description of Superradiance  
*Igor E. Protsenko (Lebedev Physical Institute); A. V. Uskov (Lebedev Physical Institute);*

10:00 States Tomography of Quantum Systems via Twisted Light  
*Alexander F. Klinskikh (Voronezh State University); Peter A. Meleshenko (Voronezh State University); Hang T. T. Nguyen (Vietnam National University); Svetlana A. Sokolova (Voronezh State Agricultural University); Mikhail E. Semenov (Zhukovsky-Gagarin Air Force Academy); Olesya I. Kanishcheva (Zhukovsky-Gagarin Air Force Academy); Vladimir A. Gorlov (Zhukovsky-Gagarin Air Force Academy);*

10:20 Charge Polarization Effect on the Optical Response of Ultraviolet Emitting Superlattices  
*Pedro Pereyra (Universidad Autonoma Metropolitana); Fatna Assaoui (University Mohammed V);*

10:40 Hybrid Homodyne-like Detection Scheme with Photon-Number-Resolving Detectors  
*Alessia Allevi (University of Insubria); Matteo Bina (University of Milan (Italy)); Stefano Olivares (University of Milan (Italy)); Maria Bondani (Institute for Photonics and Nanotechnology — National Research Council (CNR));*

11:00 **Coffee Break**

## 11:20 Quantum Walks in Laser-written Integrated Photonic Structures: Part I

Markus Grafe (Friedrich-Schiller-Universität Jena); Armando Perez-Leija (Friedrich-Schiller-Universität Jena); Maxime Lebugle (Friedrich-Schiller-Universität Jena); Steffen Weimann (Friedrich-Schiller-Universität Jena); Rene Heilmann (Friedrich-Schiller-Universität Jena); Diego Guzman-Silva (Friedrich-Schiller-Universität Jena); Matthias Heinrich (Friedrich-Schiller-Universität Jena); Robert Keil (Universität Innsbruck); Roberto De J. Leon-Montiel (Universidad Nacional Autónoma de México); Kurt Busch (Max-Born Institute for Nonlinear Optics and Short Pulse Spectroscopy); Stefan Nolte (Friedrich-Schiller-Universität Jena); Gregor Weihs (Universität Innsbruck); Demetrios N. Christodoulides (CREOL, The College of Optics & Photonics); Alexander Szameit (Friedrich-Schiller-Universität Jena);

## 11:40 Quantum Walks in Laser-written Integrated Photonic Structures: Part II

Markus Grafe (Friedrich-Schiller-Universität Jena); Armando Perez-Leija (Friedrich-Schiller-Universität Jena); Maxime Lebugle (Friedrich-Schiller-Universität Jena); Steffen Weimann (Friedrich-Schiller-Universität Jena); Rene Heilmann (Friedrich-Schiller-Universität Jena); Diego Guzman-Silva (Friedrich-Schiller-Universität Jena); Matthias Heinrich (Friedrich-Schiller-Universität Jena); Robert Keil (Universität Innsbruck); Roberto De J. Leon-Montiel (Universidad Nacional Autónoma de México); Kurt Busch (Max-Born Institute for Nonlinear Optics and Short Pulse Spectroscopy); Stefan Nolte (Friedrich-Schiller-Universität Jena); Gregor Weihs (Universität Innsbruck); Demetrios N. Christodoulides (CREOL, The College of Optics and Photonics); Alexander Szameit (Friedrich-Schiller-Universität Jena);

## 12:00 Quantum Walks in Laser-written Integrated Photonic Structures: Part III

Markus Grafe (Friedrich-Schiller-Universität Jena); Armando Perez-Leija (Friedrich-Schiller-Universität Jena); Maxime Lebugle (Friedrich-Schiller-Universität Jena); Steffen Weimann (Friedrich-Schiller-Universität Jena); Rene Heilmann (Friedrich-Schiller-Universität Jena); Diego Guzman-Silva (Friedrich-Schiller-Universität Jena); Matthias Heinrich (Friedrich-Schiller-Universität Jena); Robert Keil (Universität Innsbruck); Roberto De J. Leon-Montiel (Universidad Nacional Autónoma de México); Kurt Busch (Max-Born Institute for Nonlinear Optics and Short Pulse Spectroscopy); Stefan Nolte (Friedrich-Schiller-Universität Jena); Gregor Weihs (Universität Innsbruck); Demetrios N. Christodoulides (CREOL, The College of Optics and Photonics); Alexander Szameit (Friedrich-Schiller-Universität Jena);

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**Session 3A0****Poster Session 5**

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**Wednesday AM, May 24, 2017****9:00 AM - 13:00 AM****Room B2**

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## 1 Design and Development for a Fine Spectral Microwave Radiometer

Jieying He (National Space Science Center, Chinese Academy of Sciences); Shengwei Zhang (National Space Science Center, Chinese Academy of Sciences); Na Li (National Space Science Center, Chinese Academy of Sciences);

## 2 Registration of Ionospheric Response to Operation of the Engine of Spacecraft "Progress" According to GNSS Data

Artem Borisovich Ishin (Institute of Solar-Terrestrial Physics, SB RAS); Sergey Victorovich Voeykov (Institute of Solar-Terrestrial Physics (ISTP), Siberian Branch of Russian Academy of Sciences); Nataly Petrovna Perevalova (Institute of Solar-Terrestrial Physics (ISTP) SB RAS); Mariia Viktorovna Globa (Institute of Solar-Terrestrial Physics, Siberian Branch of Russian Academy of Science);

## 3 Buffer Layer Effects on Magnetic Resonance in Ferrite-piezoelectric Bilayer

Vladimir Mikhailovich Petrov (Novgorod State University); Alexander Sergeevich Tatarenko (Novgorod State University); Mirza Imamovich Bichurin (Novgorod State University); A. F. Saplev (Novgorod State University);

- 4 Breast Cancer Detection Using Sequential Likelihood Test and Frechet Mean Estimation  
*Aleksandar Jeremic (McMaster University);*
- 5 A Study of the Dielectric Properties of Biological Tissues: Ex-vivo vs Preserved Samples  
*Irina L. Alborova (Bauman Moscow State Technical University); Julian Bonello (University of Malta); Lourdes Farrugia (University of Malta); Charles V. Sammut (University of Malta); Lesya N. Anishchenko (Bauman Moscow State Technical University);*
- 6 Speed of Light in Vacuum Revisited  
*Namik Yener (Kocaeli University);*
- 7 A Novel Menu Interaction Method Using Head-mounted Display for Smartphone-based Virtual Reality  
*Changchong Sheng (Ational University of Defense Technology); Libing Jiang (National University of Defense Technology); Bo Tang (Ational University of Defense Technology); Xiao-An Tang (National University of Defense Technology);*
- 8 Image Enhancement and Denoising for Fringe Projection Patterns  
*Chung-Hsin Huang (Taipei College of Maritime Technology); Ching-Huang Hsieh (Chinese Culture University); Wei-Chih Hsu (Chinese Culture University); Ssu-Chia He (Chinese Culture University); Chen-Chia Chu (Taipei College of Maritime Technology); Han-Yen Tu (Chinese Culture University);*
- 9 Crosstalk Distortion Reduction in Color Fringe Projection Profilometry  
*Chung-Hsin Huang (Taipei College of Maritime Technology); Ching-Huang Hsieh (Chinese Culture University); Chih-Wei Hsu (Chinese Culture University); Wen-Ling Hsieh (Chinese Culture University); Chen-Chia Chu (Taipei College of Maritime Technology); Han-Yen Tu (Chinese Culture University);*
- 10 Point-like Source of Extreme Ultraviolet Radiation Based on the Plasma of THz Gas Discharge in a Focused Beam  
*Dmitry Sidorov (Federal State Budgetary Scientific Institution "Federal Research Center The Institute of Applied Physics of the Russian Academy of Sciences"); Alexander Vodopyanov (Federal State Budgetary Scientific Institution "Federal Research Center The Institute of Applied Physics of the Russian Academy of Sciences"); Alexander Sidorov (Federal State Budgetary Scientific Institution "Federal Research Center The Institute of Applied Physics of the Russian Academy of Sciences"); Alexey Luchinin (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"); Sergey Razin (Federal State Budgetary Scientific Institution "Federal Research Center The Institute of Applied Physics of the Russian Academy of Sciences"); Sergey Golubev (Federal State Budgetary Scientific Institution "Federal Research Center The Institute of Applied Physics of the Russian Academy of Sciences");*
- 11 On the Impact of Motion of Strongly Magnetized Plasma to the Radiation of Traveling-wave Antenna at Frequency Lower than Plasma Frequency  
*D. D. Bareev (Lobachevsky State University of Nizhni Novgorod); Vladimir G. Gavrilenko (Nizhniy Novgorod State University); V. D. Pikulin (Lobachevsky State University of Nizhni Novgorod);*
- 12 Simulation of SiH<sub>4</sub> and N<sub>2</sub>O PECVD Process for Preparing SiO<sub>2</sub> Thin Film  
*Zhuwen Zhou (Key Laboratory of Photoelectron Materials Design and Simulation in Guizhou Province); Yiyan Yang (Key Laboratory of Photoelectron Materials Design and Simulation in Guizhou Province); Bo Kong (Key Laboratory of Photoelectron Materials Design and Simulation in Guizhou Province); Chen Lu (Key Laboratory of Photoelectron Materials Design and Simulation in Guizhou Province);*
- 13 Research on Electromagnetic Scattering and Plasma Stealth Design of S-shaped Inlet  
*Zhi Jie Song (Air Force Engineering University); Hao Jun Xu (Air Force Engineering University); Xiao Long Wei (Air Force Engineering University); Zeng Hui Chen (Air Force Engineering University);*

- 14 Metasandwich Ferrite Plate/Wire Grating/Longitudinal Copper Strip with Varactor to Achieving Controlled Microwave Nonreciprocal Absorption  
*Galina A. Kraftmakher (Kotelnikov Institute of Radioengineering & Electronics, RAS); Valery S. Butylkin (Kotelnikov Institute of Radioengineering & Electronics, RAS); Yuri N. Kazantsev (Kotelnikov Institute of Radioengineering & Electronics, RAS); Valeriy P. Mal'tsev (Kotelnikov Institute of Radioengineering & Electronics, RAS);*
- 15 Demonstration of Scalable Spectrum-sliced Optical WDM-PON Access System  
*Kristaps Dravnieks (Riga Technical University); Sandis Spolitis (Riga Technical University);*
- 16 Comparison of Dispersion Compensation Methods for 40 Gbit/s WDM-PON Transmission Systems  
*Valts Dilendorfs (Riga Technical University); Sandis Spolitis (Riga Technical University); Vjaceslavs Bobrovs (Riga Technical University);*
- 17 Performance Investigation of Dispersion Compensation Methods for WDM-PON Transmission Systems  
*Marina Aleksejeva (Riga Technical University); Sandis Spolitis (Riga Technical University);*
- 18 Hybrid Single and Multi-path Routing and Distance Adaptive Modulation Level Spectrum Allocation in OFDM-based Elastic Optical Networks  
*Kiarash Malekzadeh (Iran University of Science and Technology); Sadegh Abbasi Shahkooh (Iran Telecommunication Research Center);*
- 19 Investigation of 4-PAM Modulation Format for Use in WDM-PON Optical Access Systems  
*Toms Salgals (Riga Technical University); Sandis Spolitis (Riga Technical University); Sergejs Olonkins (Riga Technical University); Vjaceslavs Bobrovs (Riga Technical University);*
- 20 Algorithm of Objects Classification by Optoelectronic Systems of Unmanned Aerial Vehicles  
*Igor N. Ischuk (Zhukovsky-Gagarin Air Force Academy); Evgeny A. Stepanov (Zhukovsky-Gagarin Air Force); Andrey A. Bebenin (Zhukovsky-Gagarin Air Force); Mikhail E. Semenov (Zhukovsky-Gagarin Air Force Academy); Evgeniya G. Kabulova (National University of Science and Technology "MISIS"); Olesya I. Kanishcheva (Zhukovsky-Gagarin Air Force Academy); Alexander F. Klinskikh (Voronezh State University); Peter A. Meleshenko (Voronezh State University);*
- 21 Development of Y-type Receiver for Atmospheric Optical Communication  
*Changqi Yang (Xi'an Shiyou University);*
- 22 Portable Atmospheric Optical Communication System  
*Changqi Yang (Xi'an Shiyou University);*
- 23 A Low-cost, Compact OEIC without Equalizer for 5 Gb/s Application  
*Rong Wang (Southeast University); Chen Fan (Southeast University); Zhigong Wang (Southeast University);*
- 24 Modeling of a Straight Channel and Y-splitter Waveguides by Loading SiO<sub>2</sub> Planar Waveguide with MgF<sub>2</sub>  
*Muhammad Ali Butt (Samara National Research University); Elena Sergeevna Kozlova (Samara National Research University); Svetlana N. Khonina (Samara State Aerospace University);*
- 25 Polarization Switchings across Phase Boundary in Vertical-cavity Surface-emitting Lasers  
*Tsu-Chiang Yen (National Sun Yat-sen University);*
- 26 Tunable Frequency Selective Radome with Broadband Absorbing Properties  
*Hong Zhu (National University of Defense Technology); Jingjian Huang (National University of Defense Technology); Nai-Chang Yuan (National University of Defense Technology); Bo Yi (National University of Defense Technology);*
- 27 Design of Edge Coupled Open Loop Metamaterial Filters  
*Betsy George (Amrita University); Nair S. Bhuvana (Amrita Center for Wireless Networks and Applications); Sreedevi K. Menon (Amrita University);*
- 28 Fully Reconfigurable Evanescent Mode Bandpass Filter Embedded with Metallic Grid  
*Shang Yu Hung (University of California); G. P. Li (University of California);*
- 29 Implementation of a Wide Band VHF High Power Tubular Band Pass Filter  
*Zohre Pourgholamhossein (Isfahan University of Technology (IUT)); Gholamreza Askari (Isfahan University of Technology (IUT)); Hamid Mir Mohammad Sadeghi (Isfahan University of Technology (IUT)); Mehdi Fadaei (Isfahan University of Technology (IUT));*
- 30 Liquid Crystal WDM Filter in Si Photonic Crystal Technology with Individual Channel Fine-tuning Capability  
*Joaquin Faneca Ruedas (University of Exeter); Tatiana S. Perova (The University of Dublin & ITMO University); Vladimir A. Tolmacheva (Ioffe Physical Technical Institute); Geoffrey Richard Nash (University of Exeter); Anna Baldycheva (University of Exeter);*



- 31 Optimization of RF Chains of Smart Mobile Unit for Secure and Reliable Communication in Indoor Environment  
*Asad Husnain Baqar (Harbin Engineering University); Tao Jiang (Harbin Engineering University);*
- 32 Architecture and Research of M2M Wireless Mesh Networks  
*Vladislavs Nazarovs (Riga Technical University); Jans Jelinskis (Riga Technical University); Jurgis Porins (Riga Technical University); Ingrida Lavrinovica (Riga Technical University); Andis Supe (Riga Technical University); Vitalijs Aispurs (Riga Technical University);*
- 33 Simulation Analysis of Microwave Propagation Channel Based on Stochastic Modeling in Sea Environment  
*Lingfei Guo (Harbin Engineering University); Yan-jie Sun (Harbin Engineering University); Wenxing Li (Harbin Engineering University); Tao Jiang (Harbin Engineering University);*
- 34 A Novel Multi-corridor Path-Loss Model for Indoor Communications  
*Antonio Sorin Tasu (Constanta Maritime University); Ana Dumitrascu (Constanta Maritime University); Lilana Anchidin (Constanta Maritime University); Razvan Tamas (Maritime University of Constanta); Teodor Petrescu (University Politehnica of Bucharest);*
- 35 Electromagnetic Compatibility Assessment of LTE 700 Networks for Co-channel Case  
*Guntis Ancans (Riga Technical University); Tamara Sharashidze (Riga Technical University); Vjaceslavs Bobrov (Riga Technical University);*
- 36 Simulation of Intelligent Public Light System in Smart City  
*Radek Fujdiak (Brno University of Technology); Petr Mlynek (Brno University of Technology); Jiri Misurec (Brno University of Technology); Jan Slacik (Brno University of Technology);*
- 37 A Blocking Collision Tracking Tree Algorithm in Mobile RFID Systems  
*Jinyan Liu (Southwest Jiaotong University); Quanyuan Feng (Southwest Jiaotong University);*
- 38 Quality of Service Measurements and Service Mapping for the Mobile Internet Access  
*Elmars Lipenbergs (Riga Technical University); Alina Stafeca (Riga Technical University); Girts Ivanovs (Riga Technical University); Inga Smirnova (Public Utilities Commission);*
- 39 Single-satellite Positioning Algorithm Based on Direction-finding  
*Chunjing Wang (National University of Defense Technology); Weihua Wang (National University of Defense Technology); Zengping Chen (National University of Defense Technology);*
- 40 Strange Non-chaotic Self-oscillations  
*A. Yu. Jalnina (Institute of Radio-Engineering and Electronics of RAS); Sergey P. Kuznetsov (Institute of Radio-Engineering and Electronics of RAS);*
- 41 Design and Analysis Performance of a New Patch Array Antenna for SSR  
*Mohsen Abdolahi (Isfahan University of Technology (IUT)); Zohre Pourgholamhossein (Isfahan University of Technology (IUT)); Gholamreza Askari (Isfahan University of Technology (IUT)); Hamid Mir-mohammad Sadeghi (Isfahan University of Technology (IUT));*
- 42 Implementation of the IRI Model into the NIM-RT Software with Optimization of the Ionosphere Parameters to Day-to-day Variation  
*Nikolay Y. Zaalov (Saint Petersburg State University); E. V. Moskaleva (University of Saint Petersburg); T. S. Burmakina (University of Saint Petersburg);*
- 43 Frequency-, Temperature-, and Texture-dependent Dielectric Model for Frozen and Thawed Arctic Mineral Soils  
*Valery L. Mironov (Kirensky Institute of Physics, Siberian Branch, Russian Academy of Sciences); Ilya Molostov (Altai State University); Yury I. Lukin (Kirensky Institute of Physics, Siberian Branch, Russian Academy of Sciences); A. Y. Karavaysky (Kirensky Institute of Physics, Siberian Branch, Russian Academy of Sciences); Sergey Viktorovich Fomin (Kirensky Institute of Physics, Siberian Branch, Russian Academy of Sciences);*
- 44 Compensation of Turbulent Distortions in Multi-aperture Imaging  
*Anna S. Eremina (V.E. Zuev Institute of Atmospheric Optics, SB RAS); V. V. Dudorov (V.E. Zuev Institute of Atmospheric Optics, SB RAS);*

- 45 Evaluation of an Attenuation Correction Method for X-band Dual Polarization Weather Radars  
*Sanghun Lim (Korea Institute of Civil Engineering and Building Technology); Won Kim (Korea Institute of Civil Engineering and Building Technology); V. Chandrasekar (Colorado State University); Bong-Joo Jang (Korea Institute of Civil Engineering and Building Technology); Hyunjung Kim (Korea Institute of Civil Engineering and Building Technology); Jeongho Choi (JCOMS Co. Ltd.);*
- 46 An Improved PCA-SIFT Algorithm Application in Light Small UAV Image Registration  
*Xin Yang (National University of Defense Technology); Libing Jiang (National University of Defense Technology); Xiao-An Tang (National University of Defense Technology); Xiaoyuan Ren (National University of Defense Technology);*
- 47 Simultaneous Radar and Video Observations of the Sea Surface in Field Conditions  
*Yury Yu Yurovsky (FSBSI Marine Hydrophysical Institute RAS); V. N. Kudryavtsev (FSBSI Marine Hydrophysical Institute RAS); Bertrand Chapron (IFREMER);*
- 48 Triple-band Planar Unidirectional Broadside Slot Antenna  
*Ming-Sheng Siao (National Changhua University of Education); Wanchu Hong (National Changhua University of Education); Min-Hua Ho (National Changhua University of Education);*
- 49 Dynamics of Excitonic Polaritons in Semiconductor Heterostructures with Quantum Wells  
*A. V. Trifonov (St. Petersburg State University); Yu. P. Efimov (St. Petersburg State University); S. A. Eliseev (St. Petersburg State University); V. A. Lovtcius (St. Petersburg State University); P. Yu. Shapochkin (St. Petersburg State University); Ivan V. Ignatiev (St. Petersburg State University);*
- 50 Analytical Approximation-based Method for Calculation of Generalized Ambiguity Function and 3D Down-looking SAR Image Reconstruction  
*Gennady Slukin (Bauman Moscow State Technical University); Valery V. Chapursky (Bauman Moscow State Technical University); Maxim Golubtsov (Bauman Moscow State Technical University); Igor Kryuchkov (Bauman Moscow State Technical University); Nikolay Soloviev (Bauman Moscow State Technical University);*
- 51 Monitoring of the Moon as the Natural Satellite of the Earth in the Solar System  
*Shigehisa Nakamura (Kyoto University);*
- 52 A Dynamical Balance of the Moon on the Lunar Orbit  
*Shigehisa Nakamura (Kyoto University);*
- 56 A Broadband Polarization Insensitive Metamaterial Absorber Based on Three-dimensional Structure  
*Ling-Ling Wang (Nanjing University of Aeronautics and Astronautics); Shaobin Liu (Nanjing University of Aeronautics and Astronautics); Hai Feng Zhang (Nanjing University of Aeronautics and Astronautics); Yong-Diao Wen (Nanjing University of Aeronautics and Astronautics); Bo-Rui Bian (Nanjing University of Aeronautics and Astronautics); Xiang-Kun Kong (Nanjing University of Aeronautics and Astronautics); Xue Feng (Nanjing University of Aeronautics and Astronautics);*
- 57 A Tunable Microwave Metamaterial Absorber/Cross-polarization Reflector  
*Yong-Diao Wen (Nanjing University of Aeronautics and Astronautics); Shaobin Liu (Nanjing University of Aeronautics and Astronautics); Hai Feng Zhang (Nanjing University of Aeronautics and Astronautics); Xue Feng (Nanjing University of Aeronautics and Astronautics); Ling-Ling Wang (Nanjing University of Aeronautics and Astronautics);*
- 60 An Adaptive Information-Modeling System (AIMS) for Monitoring Aquatic Ecosystems  
*Ferdinand A. Mkrtchyan (V. A. Kotelnikov's Institute of Radioengineering and Electronics, Russian Academy of Sciences); V. F. Krapivin (V. A. Kotelnikov's Institute of Radioengineering and Electronics, Russian Academy of Sciences);*
- 61 Studying of the Permittivity in Early Process Stages  
*Nurgul Uzakkyzy (L.N. Gumilyov Eurasian National University); Kazizat Iskakov (L.N. Gumilyov Eurasian National University);*

- 62 Gas Breakdown by a Focused Beam of CW THz Radiation  
Alexander V. Sidorov (Federal Research Center "Institute of Applied Physics of the Russian Academy of Sciences (IAP RAS)"); Sergey V. Razin (Federal State Budgetary Scientific Institution "Federal Research Center The Institute of Applied Physics of the Russian Academy of Sciences"); Alexander I. Tsvetkov (Federal Research Center "Institute of Applied Physics of the Russian Academy of Sciences (IAP RAS)"); Andrey P. Fokin (Federal Research Center "Institute of Applied Physics of the Russian Academy of Sciences (IAP RAS)"); Alexey P. Veselov (Federal Research Center "Institute of Applied Physics of the Russian Academy of Sciences (IAP RAS)"); Sergey V. Golubev (Federal Research Center "Institute of Applied Physics of the Russian Academy of Sciences (IAP RAS)"); Alexander V. Vodopyanov (Federal Research Center "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");
- 63 Investigation on Structural, Ferroelectric and Magnetic Properties of  $\text{BiFeO}_3\text{-PbTiO}_3$  Multiferroic System  
N. Kumar (PEC University of Technology); N. Bastola (Indian Institute of Science); P. Jain (PEC University of Technology); Sanjeev Kumar (PEC University of Technology); A. K. Singh (PEC University of Technology); R. Ranjan (Indian Institute of Science);
- 64 Boundary Conditions for Surface Second Harmonic Generation at a Metal-dielectric Interface Revisited  
K. Nireekshan Reddy (Ben-Gurion University); Parry Y. Chen (Tel Aviv University); Antonio I. Fernandez-Dominguez (Universidad Autonoma de Madrid); Yonatan Sivan (Ben-Gurion University);
- 65 Hermite-Gaussian Stationary Solutions in Strongly Nonlocal Nonlinear Media  
Lanhua Zhong (South China Normal University); Zhanmei Ren (South China Normal University); Qi Guo (South China Normal University);
- 67 Design of Simulation System for Multi-function Radar Behaviour Analysis  
Jian Ou (National University of Defence Technology); Yongguang Chen (Beijing Institute of Tracking & Telecommunications Technology); Feng Zhao (National University of Defence Technology); Jianhua Yang (National University of Defence Technology); Shun-Ping Xiao (National University of Defence Technology);
- 68 Research on Extension of Hierarchical Structure for Multi-function Radar Signals  
Jian Ou (National University of Defence Technology); Yongguang Chen (Beijing Institute of Tracking & Telecommunications Technology); Feng Zhao (National University of Defence Technology); Xiaofeng Ai (National University of Defence Technology); Jianhua Yang (National University of Defence Technology);
- 69 Waveform Design and Imaging Method of MIMO ISAR Based on Orthogonal LFM Signal  
Xiaobin Liu (National University of Defence Technology); Jin Liu (National University of Defence Technology); Feng Zhao (National University of Defence Technology); Jianhua Yang (National University of Defence Technology); Guoyu Wang (National University of Defence Technology);
- 70 Estimation of Micro-Doppler Parameter Based on Adaptive PWV-Hough Transform  
Jin Liu (National University of Defence Technology); Xiaobin Liu (National University of Defence Technology); Qihua Wu (National University of Defence Technology); Jianhua Yang (National University of Defence Technology); Feng Zhao (National University of Defence Technology);

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**Session 3P1a**
**SC3: Optical Sensors for Industrial and Consumer Applications**


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**Wednesday PM, May 24, 2017**
**Room G5**

Organized by Cees Ronda

Chaired by Cees Ronda

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14:00 Future Gyros on the Base of Whispering Gallery Mode Resonators

Yuri V. Filatov (St.-Petersburg Electrotechnical University); Alexander S. Kukaev (St.-Petersburg State Electrotechnical University); Egor V. Shalymov (St.-Petersburg Electrotechnical University); Vladimir Yu. Venediktov (St.-Petersburg Electrotechnical University and St.-Petersburg State University);

- 14:20 High Confinement InP Nanophotonic Circuits for Optical Sensing Opportunities  
Invited

*Yuqing Jiao (Eindhoven University of Technology); Jos J. G. M. Van der Tol (Eindhoven University of Technology); Longfei Shen (Eindhoven University of Technology); Alonso Milan Mejia (Eindhoven University of Technology); Huub P. M. M. Ambrosius (Eindhoven University of Technology); Meint K. Smit (Technical University of Eindhoven); Kevin A. Williams (Eindhoven University of Technology);*

- 14:40 Overtone Spectroscopy with Reconfigurable Microfibers  
Invited

*Alina Karabchevsky (Ben-Gurion University of the Negev);*

- 15:00 Rectangular Parallelepiped-shaped Optical Cell for Sensing Particular Matter with Ultra-low Concentration by Mid-infrared Absorption

*Seung-Gol Lee (Inha University); Beom-Hoan O (Inha University); Se-Gun Park (Inha University);*

- 15:20 Biological Object Determination by Raman Scattering Enhancement Supported on the Multilayer Dielectric Thin Film

*Irina A. Boginskaya (Institute of Theoretical and Applied Electrodynamics, RAS); Konstantin N. Afanasyev (Institute of Theoretical and Applied Electrodynamics, RAS); Igor V. Bykov (Institute for Theoretical and Applied Electromagnetics, RAS); I. A. Budashov (Emanuel Institute of Biochemical Physics, RAS); I. N. Kurochkin (Moscow State University); Alexander V. Dorofeenko (Institute for Theoretical and Applied Electromagnetics, RAS); Alexey P. Vinogradov (Institute for Theoretical and Applied Electromagnetics, RAS); I. . Nechepurenko (All-Russia Research Institute of Automatics); Ilya A. Ryzhikov (Institute of Theoretical and Applied Electrodynamics, RAS); R. A. Sirazov (Moscow Institute for Physics and Technology (State University));*

- 15:40 Photonic Integration: The Fundament of the Next Industrial Revolution

*Ton Backx (Technical University Eindhoven);*

- 16:00 **Coffee Break**

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**Session 3P1b**  
**Optics and Photonics 1**

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**Wednesday PM, May 24, 2017**

**Room G5**

Chaired by Mikhail Konstantinovich Khodzitsky

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- 16:40 30-GHz OFDM Radar and Wireless Communication Experiment Using Radio over Fiber Technology

*Toshimasa Umezawa (National Institute of Information and Communications Technology); Kunihiisa Jitsuno (Waseda University); 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);*

- 17:00 Agar and Silica Gel Based Biotissue-mimicking Phantoms in THz Frequency Range

*Evgeniy L. Odlyanskiy (ITMO University); O. A. Smolyanskaya (National Research University of Information Technologies, Mechanics and Optics); O. V. Kravtsenyuk (ITMO University); Jean-Paul Guillet (Bordeaux University); A. P. Popov (National ITMO University); Mikhail Konstantinovich Khodzitsky (ITMO University);*

- 17:20 Optical Absorption at Free Electrons in Semiconductors Induced by Acoustic and Longitudinal Optical Phonon-assisted Processes

*Maria O. Zhukova (ITMO University); Evgeny Yu. Perlin (ITMO University);*

- 17:40 Circular-lattice Photonic Crystal Fiber with Square Air Holes Supporting 58 OAM Modes

*Xiuli Bai (Nanjing University of Posts and Telecommunications); Heming Chen (Nanjing University of Posts and Telecommunications); Yingying Ma (Nanjing University of Posts and Telecommunications); Honghong Yang (Nanjing University of Posts and Telecommunications);*

- 18:00 Radio over Plastic Optical Fiber for Future Mobile Fronthaul Application

*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);*

- 18:20 Electro-optic Broadband Modulator Based on Lithium Niobate Microresonator  
*Andrey Sergeevich Voloshin (Russian Quantum Center); Nikita M. Kondratyev (Russian Quantum Center); Nikolay G. Pavlov (Moscow Institute of Physics and Technology); A. D. Ostapchenko (Moscow Institute of Physics and Technology); A. S. Gorodnitsky (Moscow State University); I. A. Bilenko (Russian Quantum Center); M. L. Gorodetsky (Russian Quantum Center);*

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### Session 3P2

#### Chaotic Signals: Generation, Emission, Propagation and Reception 2

Wednesday PM, May 24, 2017

Room G6

Organized by Alexander S. Dmitriev

Chaired by Alexander S. Dmitriev

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- 14:00 Hyperbolic Chaos and Quasiperiodic Dynamics in Experimental Nonautonomous Systems of Coupled Oscillators  
*Olga B. Isaeva (Kotel'nikov's Institute of Radio-Engineering and Electronics of RAS); Dmitry V. Savin (Chernyshevsky Saratov State University); Evgeniy P. Seleznev (Saratov Branch Institute of Radio-Engineering and Electronics of RAS); Nataliya V. Stankevich (University of Jyväskylä);*
- 14:20 Synchronization of Hidden Chaotic Attractors on the Example of Radiophysical Oscillators  
*Nikolay V. Kuznetsov (St. Petersburg State University); Gennadiy A. Leonov (St. Petersburg State University); Nataliya V. Stankevich (University of Jyväskylä);*
- 14:40 Generation of Chaotic and Quasi-periodic Oscillations in Multi-contour Self-generator  
*Nataliya V. Stankevich (University of Jyväskylä); Oleg V. Astakhov (Chernyshevsky Saratov State University); Evgeniy P. Seleznev (Saratov Branch Institute of Radio-Engineering and Electronics of RAS);*
- 15:00 Robust Chaos in Systems of Circular Geometry  
*Valentina M. Doroshenko (Saratov State University); V. P. Kruglov (The Kotel'nikov Institute of Radio-Engineering and Electronics of RAS); M. V. Pozdnyakov (Saratov State Medical University);*
- 15:20 Generators of Robust Chaos Based on Hyperbolic Dynamics  
*Sergey P. Kuznetsov (Institute of Radio-Engineering and Electronics of RAS);*

- 15:40 Chaotic Communication with Robust Hyperbolic Transmitter and Receiver  
*Olga B. Isaeva (Kotel'nikov's Institute of Radio-Engineering and Electronics of RAS); A. Yu. Jalnine (Institute of Radio-Engineering and Electronics of RAS); Sergey P. Kuznetsov (Institute of Radio-Engineering and Electronics of RAS);*

### 16:00 Coffee Break

- 16:20 Chaotic Flux Flow in T-junction Josephson Oscillator  
*Dmitry R. Gulevich (ITMO University); Valery P. Koshelets (Kotel'nikov Institute of Radio Engineering and Electronics); Feodor V. Kusmartsev (Loughborough University);*
- 16:40 Integrated Ultrawideband Microwave 30–60 GHz Chaotic Oscillator Model  
*Elena V. Efremova (Kotel'nikov Institute of Radio Engineering and Electronics of RAS); Alexander S. Dmitriev (Kotel'nikov Institute of Radio Engineering and Electronics of RAS);*
- 17:00 The Unit Cell of Radiolight Receiver  
*Alexander S. Dmitriev (Kotel'nikov Institute of Radio Engineering and Electronics of RAS); Vadim V. Itskov (Kotel'nikov Institute of Radio-engineering and Electronics of RAS); Anton Igorevich Ryzhov (Institute of Radio Engineering and Electronics of RAS); Mark Gerasimov (Institute of Radio Engineering and Electronics of RAS); Manvel Petrosyan (Moscow Institute of Physics and Technology (State University));*

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### Session 3P3

#### Noninvasive Examination Techniques in Industry and Biomedicine 2

Wednesday PM, May 24, 2017

Room G7

Organized by Fedor Alexandrovich Gubarev

Chaired by Naren Naik, Fedor Alexandrovich Gubarev

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- 14:00 Comparative Analysis for Effectiveness of Musical and  
 Invited Ultrasound PWD Mode Signal to Stimulate the Fetal Response  
*Samreen Amir (Dawood University of Engineering & Technology); Bhawani Shankar Chowdhry (Mehran University of Engineering & Technology); Adnan Waqar (Dawood University of Engineering & Technology);*

- 14:20 Numerical Feasibility Study for Electrical Impedance  
Invited Tomography Based Fixated-bone Imaging  
*Jampu Bharani Bharadwaj (Indian Institute of Technology Kanpur); Naren Naik (Indian Institute of Technology);*
- 14:40 Microwave Imaging of Concealed Objects Beneath Clothing by Creating Synthetic Aperture due to Natural Motion of the Subject  
*Andrey V. Zhuravlev (Bauman Moscow State Technical University); Vladimir V. Razevig (Bauman Moscow State Technical University); T. Tataraidze (Bauman Moscow State Technical University); Margarita A. Chizh (Bauman Moscow State Technical University); Sergey I. Ivashov (Bauman Moscow State Technical University);*
- 15:00 Objects Detection and Recognition in Biomedical Microscopic Images for the Purpose of Non-invasive and More Precise Diagnostic  
*Zuzana Loncova (University of Zilina); Libor Hargas (University of Zilina); Dusan Koniar (University of Zilina); Anna Simonova (University of Zilina); Boris Kozacek (University of Zilina);*
- 15:20 Optimization of a Method of a Polysectional Wide-band Bioelectrical Impedance Analysis of Complex Biological Structures for Screening Purposes in Rehabilitation Medicine  
*Vladimir Kuznetsov (National Research Tomsk Polytechnic University); Aleksey Novikov (Omsk State Technical University); Alexandr Rogachev (Francisk Skorina Gomel State University); Olga Galtseva (National Research Tomsk Polytechnic University); Inna Plotnikova (National Research Tomsk Polytechnic University); Anastasia Nikitina (National Research Tomsk Polytechnic University);*
- 15:40 Liquid Transparency Changing Dynamics Estimation by Means of Digital Speckle Correlation  
*Lin Li (National Research Tomsk Polytechnic University); Alyona I. Bloshkina (National Research Tomsk Polytechnic University); Fedor Alexandrovich Gubarev (Tomsk Polytechnic University);*
- 16:00 **Coffee Break**
- 16:40 Capacitive Sensor of Weak Magnetic Field on the Basis of Ferromagnetic Fluid with Micro- and Nanoscale Particles  
*Denis Olegovich Zyatkov (National Research Tomsk Polytechnic University); Alexey Vasilievich Yurchenko (National Research Tomsk Polytechnic University); Elena Vladimirovna Yurchenko (National Research Tomsk Polytechnic University);*

**Session 3P4****Novel Mathematical Methods in Electromagnetics 1****Wednesday PM, May 24, 2017****Room G8**

Organized by Yury V. Shestopalov, Kazuya Kobayashi

Chaired by Yury V. Shestopalov, Kazuya Kobayashi

- 14:00 Factorizing Physical Dimensions of the Quantities Ingressed in Maxwell's Equations in SI Units  
*Oleg A. Tretyakov (Gebze Technical University);*
- 14:20 A Theoretical Study of Line Intensities in Emission Spectra of Rare Gas Atoms in an Alternating Electric Field  
*Elena Vladimirovna Koryukina (National Research Tomsk State University);*
- 14:40 Mechanical Properties of the Waveguide Modal Fields in the Time Domain  
*Fatih Erden (Turkish Naval Academy); Oleg A. Tretyakov (Gebze Technical University);*
- 15:00 FDTD Solution of Reconstructing Permittivity of a Dielectric Inclusion in a Waveguide Taking into Account Measurement Inaccuracy  
*E. A. Sheina (Lomonosov Moscow State University); Yury V. Shestopalov (University of Gavle); Aleksander P. Smirnov (Lomonosov Moscow State University); M. V. Ufimtsev (Lomonosov Moscow State University);*
- 15:20 Diffraction by a Narrow Circular Cone in Parabolic Equation Approximation  
*Ivan V. Andronov (St. Petersburg State University);*
- 15:40 Dzyaloshinskii-Moriya Chiral Magnets and Boundary Conditions in Skyrmion Electronics  
*Peter Robert Kotiuga (Boston University);*
- 16:00 **Coffee Break**
- 16:20 Numerical Method for Electromagnetic Wave Propagation Problem in a Cylindrical Anisotropic Inhomogeneous Metal-dielectric Waveguide  
*Eugene Yu. Smolkin (Penza State University);*
- 16:40 On the Problem of TE Wave Propagation in a Lossless Cubic-quintic Nonlinear Waveguide  
*Dmitry V. Valovik (Penza State University);*
- 17:00 Wiener-Hopf Analysis of the Diffraction by a Finite Parallel-plate Waveguide with Sinusoidal Wall Corrugation  
*Toru Eizawa (Chuo University); Kazuya Kobayashi (Chuo University);*

- 17:20 A Quantification of the Changes in the Far-field Pattern Induced by Rounding the Corners of a Scatterer Illuminated by a Plane Wave Electromagnetic Field  
*A. J. Markowski (Macquarie University); Paul D. Smith (Macquarie University);*
- 17:40 Accurate Investigation of a Finite Sinusoidal Grating Excited by an *E*-polarized Plane Wave  
*Toru Eizawa (Chuo University); Elena D. Vinogradova (Macquarie University); Kazuya Kobayashi (Chuo University);*
- 18:00 TM Scattering by a Homogeneously Filled Slit in a Thick Impedance Screen  
*Ismail Hakki Tayyar (Karabuk University); Bektaş Colak (Karabuk University);*
- 15:20 Impact of Chiral Unit Element Curvature on Chiral Metasurface Optical Properties in Terahertz Frequency Range  
*M. S. Masyukov (ITMO University); Anna V. Vozianova (ITMO University); Alexander N. Grebenchukov (ITMO University); Mikhail Konstantinovich Khodzitsky (ITMO University);*
- 15:40 Investigation of Terahertz Radiation Influence on Rat Glial Cells  
*Mariia A. Borovkova (University of Oulu); M. K. Serebriakova (ITMO University); V. I. Fedorov (ITMO University); E. A. Sedych (ITMO University); V. L. Vaks (ITMO University); A. K. Lichutin (ITMO University); A. V. Salnikova (ITMO University); Mikhail Konstantinovich Khodzitsky (ITMO University);*

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**Session 3P5**  
**Terahertz Photonics 2**

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**Wednesday PM, May 24, 2017**

**Room G9**

Organized by Mikhail Konstantinovich Khodzitsky

Chaired by Mikhail Konstantinovich Khodzitsky

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- 14:00 Narrow-band Terahertz Emission from an Ultrashort Laser Pulse in a Bulk Lithium Niobate Crystal  
*E. A. Mashkovich (University of Nizhny Novgorod); Sergey Alexandrovich Sychugin (University of Nizhny Novgorod); Michael I. Bakunov (University of Nizhny Novgorod);*
- 14:20 Phase Diagram Method for Frequency-resolved Orbital Angular Momentum Spectrum Characterization of Broadband Terahertz Vortices  
*Varvara A. Semenova (ITMO University); Maksim S. Kulya (ITMO University); Nikolay V. Petrov (ITMO University); Victor G. Bepalov (ITMO University);*
- 14:40 Numerical Model of On-chip Mode-locked Lasers for Millimeter Wave Generation  
*Carlos Diego Gordon Gallegos (Universidad Tecnica de Ambato); Vicente Morales (Universidad Tecnica de Ambato); Guillermo Carpintero del Barrio (Universidad Carlos III de Madrid); Julien Javaloyes (Universitat de les Illes Balears);*
- 15:00 Metal Grating Terahertz Polarizers on Substrate  
*Alexey Dmitrievich Trofimov (ITMO University); V. S. Chebotarev (ITMO University); Mikhail Konstantinovich Khodzitsky (ITMO University);*
- 16:00 **Coffee Break**
- 16:20 Loss Impact on Super-resolution Photonic Jet Produced by a Teflon Sphere  
*Liyang Yue (Bangor University); Bing Yan (Bangor University); James Norman Monks (Bangor University); Zengbo Wang (Bangor University); Igor V. Minin (Siberian State Geodesy Academy); Oleg V. Minin (Novosibirsk State Technical University);*
- 17:00 Terahertz Pulsed Spectroscopy is a Promising Diagnostic Method of Diabetes Mellitus  
Invited *Olga P. Cherkasova (Institute of Laser Physics of SB RAS);*
- 17:20 Application of Terahertz Pulsed Spectroscopy for the Development of Non-invasive Glucose Measuring Method  
*Svyatoslav Igorevich Gusev (ITMO University); V. A. Guseva (ITMO University); A. A. Simonova (ITMO University); P. S. Demchenko (ITMO University); E. A. Sedych (ITMO University); Olga P. Cherkasova (Institute of Laser Physics of SB RAS); M. K. Khodzitsky (ITMO University);*
- 17:40 Optically Switchable THz Ultrafast Modulator Based on Cross-shaped Resonators Graphene Metasurface  
*Alexander N. Grebenchukov (ITMO University); A. D. Zaitsev (ITMO University); M. G. Novoselov (ITMO University); E. V. Kornilov (ITMO University); V. Y. Soboleva (ITMO University); Mikhail Konstantinovich Khodzitsky (ITMO University);*

**Session 3P6a****Remote Sensing Techniques of Earth System  
Related Components 4****Wednesday PM, May 24, 2017****Room G10**

Organized by Jian-Cheng Shi

Chaired by Bing Zhang, Xiaofeng Li

- 14:00 Approximate Computing of Kernel RX-algorithm for Hyperspectral Anomaly Detection  
*Yuanfeng Wu (Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences); Sebastian Lopez (Institute for Applied Microelectronics); Lianru Gao (Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences); Fei Qiao (Tsinghua University); Bing Zhang (Institute of Remote Sensing and Digital Earth, CAS);*
- 14:20 Generation of Land Surface Temperature Products from Remote Sensing Data for Agro-Droughgt Monitoring in China  
*Zhihao Qin (Institute of Agro-Resources and Regional Planning, Chinese Academy of Agricultural Sciences); Bin Xu (Institute of Agro-Resources and Regional Planning, Chinese Academy of Agricultural Sciences); Qiuyan Huang (Guangxi Teachers Education University); Shuhe Zhao (Nanjing University); Zhao-Liang Li (Institute of Agricultural Resources and Regional Planning, Chinese Academy of Agricultural Sciences);*
- 14:40 Using Big Data to Improve Remote Sensing  
*Bing Zhang (Institute of Remote Sensing and Digital Earth, CAS);*
- 15:00 Determination of the Nature of Unprepared Landing Strip Relief with the Helicopter Radar Interferometer  
*A. I. Baskakov (National Research University "Moscow Power Engineering Institute"); Aleksey Aleksandrovich Komarov (National Research University "Moscow Power Engineering Institute"); M. S. Mikhailov (National Research University "Moscow Power Engineering Institute");*
- 15:20 Modeling of the Methodical Errors of High-precision Aircraft Radar Altimeter Operating above the Sea Surface at Low Altitudes  
*A. I. Baskakov (National Research University "Moscow Power Engineering Institute"); Aleksey Aleksandrovich Komarov (National Research University "Moscow Power Engineering Institute"); Mikhail Sergeyevich Mikhailov (National Research University "Moscow Power Engineering Institute"); A. V. Ruban (National Research University);*

- 15:40 A New Geometric Correction Method Based GCPs for High Resolution Airborne SAR Data  
*Ping Zhang (Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences); S. T. Fu (Institute of Electrical Engineering, Chinese Academy of Sciences); Z. Li (Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences);*

16:00 **Coffee Break****Session 3P6b****Microwave Remote Sensing and Polarimetry,  
SAR 1****Wednesday PM, May 24, 2017****Room G10**

Chaired by Hubert M. J. Cantalloube

- 16:20 MW Holographic Imaging System for Detection of Hidden Dinosaur Tracks  
*Sergey I. Ivashov (Bauman Moscow State Technical University); Margarita A. Chizh (Bauman Moscow State Technical University); Andrey V. Zhuravlev (Bauman Moscow State Technical University); Vladimir V. Razevig (Bauman Moscow State Technical University); Timothy Bechtel (Franklin & Marshall College); Lorenzo Capineri (Università di Firenze); Masaharu Inagaki (Walnut Ltd.);*
- 16:40 An Impedance Tuner Based Self-interference Canceller for Monostatic Low Noise CW GPR Sensor  
*Yunlong Pan (Southeast University); Jinping Xu (Southeast University);*
- 17:00 High Altitude Terrain Correlation Navigation Resetting by Nadir Looking Synthetic Aperture Radar  
*Hubert M. J. Cantalloube (Office National d'Etudes et Recherches Aerospatiales (ONERA));*
- 17:20 Simultaneous Antenna Pattern and Water Surface Back Scattering Law Estimation from Synthetic Aperture Radar  
*Hubert M. J. Cantalloube (Office National d'Etudes et Recherches Aerospatiales (ONERA)); P. Martineau (Office National d'Etudes et Recherches Aerospatiales (ONERA)); L. Pastore Guyonvarch (Renault Vehicle Research Centre);*
- 17:40 Comparison of Polarimetric SAR Features for Terrain Classification Using Incremental Training  
*Turker Ince (Izmir University of Economics); Mete Ahishali (Izmir University of Economics); Serkan Kiranyaz (Qatar University);*



**Session 3P7****SC1: Computational Techniques in Electromagnetics and Applications****Wednesday PM, May 24, 2017****Room B1**

Organized by Tsuneki Yamasaki, Yoichi Okuno

Chaired by Tsuneki Yamasaki

- 14:00 Comparative Analysis of Techniques for Source Radiation in Cylindrical EBG with and without Periodic Discontinuities  
*Guga Burduli (Free University of Tbilisi); Vakhtang Jandieri (University of Duisburg-Essen); Kiyotoshi Yasumoto (Kyushu University); Daniel Erni (University of Duisburg-Essen, Campus Duisburg);*
- 14:20 Accelerated Boundary Integral Method for Solving the Problem of Scattering by Multiple Multilayered Circular Cylindrical Posts in a Rectangular Waveguide  
*Roman Kushnin (Riga Technical University); Janis Semenjako (Riga Technical University); Yury V. Shestopalov (University of Gavle);*
- 14:40 Simple Methods for Extracting Far-infrared Optical Constants of Dielectric Slabs from Fringing Reflectance Spectra  
*Pei-Kang Chung (National Chiao Tung University); Shun-Tung Yen (National Chiao Tung University);*
- 15:00 Application of Feature Selective Validation to the Design of Microstrip Antenna  
*Ping Xu (Harbin Engineering University); Xiaochao Jiang (Harbin Engineering University); Ming Diao (Harbin Engineering University);*
- 15:20 Effective Combined Method for Calculation of Circular Excitation Dielectric Cylinder with a Heterogeneous Object  
*Natalya N. Kisel (Southern Federal University); Vitaliy A. Cheremisov (Southern Federal University); Dmitriy V. Kisel (Moscow State University);*
- 15:40 Computational Power Conservation Technique Using Mobility Adaptation Method in MANET  
*Lawal Bello (University of Greenwich); Panos Bakalis (University of Greenwich); Predrag Rapajic (University of Greenwich);*
- 16:00 **Coffee Break**
- 16:20 Analysis of Pulse Reflection Response from Periodic Perfect Conductor in Two Dispersion Media  
*Ryosuke Ozaki (Nihon University); Tsuneki Yamasaki (Nihon University);*

- 16:40 Numerical Calculation of Magnetic Dipole Fields by Three-dimensional QS-FDTD Method  
*Mehmet Burak Ozakin (Gebze Technical University); Serkan Aksoy (Gebze Institute of Technology);*
- 17:00 Analysis of Shielded Ring Waveguide  
*Ken'ichiro Yashiro (Chiba University); Ning Guan (Fujikura Ltd.);*
- 17:20 Numerical Implementation of Efficient Cross-section Method for the Analysis of Arbitrarily Shaped Dielectric Obstacles in Rectangular Waveguide  
*Karlis Kimsis (Riga Technical University); Janis Semenjako (Riga Technical University); Roman Kushnin (Riga Technical University); Andris Viduzs (Riga Technical University);*

**Session 3P8****MS-2: BRICS Mini-symposium on Nonlinear Photonics and Photonic Assisted Technologies 2****Wednesday PM, May 24, 2017****Room B5**

Organized by Alexander. P. Alodjants, Yikun Liu

Chaired by Alexander. P. Alodjants

- 14:20 Ultra-short Laser Interactions for Advanced Photonic Technologies  
*Anton Rudenko (Lyon University); Hongfeng Ma (Lyon University); Roman Zakoldaev (ITMO University); Vadim P. Veiko (ITMO University); Tatiana E. Itina (University of Lyon);*
- 14:40 Optimization of Electrical Properties of Quantum Dot Surface Emitting DFB Lasers with ITO Transparent Claddings  
*Ting-Yuan Chang (National Chiao Tung University); Wen-Zheng Xu (National Chiao Tung University); Kuo-Bin Hong (National Chiao Tung University); Tien-Chang Lu (National Chiao Tung University);*
- 15:00 3D Visualization of Nano Materials Structure by Electron Tomography  
*Yinyin Li (Sun Yat-sen University); Hongmei Li (Sun Yat-sen University); Xudong Jia (Sun Yat-sen University); Juntao Li (Sun Yat-sen University); Qinfen Zhang (Sun Yat-sen University);*
- 15:20 Two-level Diffraction Structures Prepared by Vertical Deposition of SiO<sub>2</sub> Microspheres  
*M. S. Ashurov (M. V. Lomonosov Moscow State University); A. L. Stepanov (Kazan Physical-Technical Institute, Russian Academy of Sciences); Sergey O. Klimonsky (Lomonosov Moscow State University);*

- 15:40 Orbital Angular Momentum Mode Analyzer for Few-mode Fiber Characterization  
*Jianji Dong (Huazhong University of Science and Technology); Hailong Zhou (Huazhong University of Science and Technology); Xinliang Zhang (Huazhong University of Science and Technology);*
- 16:00 **Coffee Break**
- 16:20 Optical Properties of Solution-processed Perovskite with Randomly Distributed Nanocrystals  
*Kuo-Bin Hong (National Chiao Tung University); Yu-Hsun Chou (National Chiao Tung University); Jiong-Fu Huang (National Chiao Tung University); Tsung Sheng Kao (National University of Singapore); Fang-Chung Chen (National Chiao Tung University); Tien-Chang Lu (National Chiao Tung University);*
- 16:40 Generation of Terahertz Waves with Strong Quasi-static Precursors by Ultrashort Laser Pulses Inducing Ionization in Nonlinear Crystals  
*Michael I. Bakunov (University of Nizhni Novgorod); Alexey V. Maslov (University of Nizhny Novgorod); M. V. Tsarev (University of Nizhni Novgorod);*
- 17:00 All-optical Logic Devices Based on Anisotropic Responsive Liquid Crystal  
*Tsung-Hsien Lin (National Sun Yat-Sen University);*
- 17:20 Cholic Acid Optical Sensor Based on Liquid Crystal Droplets  
*Dan Luo (South University of Science and Technology of China);*
- 17:40 Manipulate the Flexible Microcavity for Lasing and Sensing  
*Rui Chen (Southern University of Science and Technology);*
- 14:20 Near-field Chipless RFID Tags for Identification and Authentication Applications  
*Cristian Herrojo (Universitat Autònoma de Barcelona); J. Mata-Contreras (Universitat Autònoma de Barcelona); Ferran Paredes (Universitat Autònoma de Barcelona); F. Martín (Universitat Autònoma de Barcelona);*
- 14:40 Design of Wireless Sensors by Using Chipless RFID Technology  
*Filippo Costa (University of Pisa); Simone Genovesi (University of Pisa); Michele Borgese (University of Pisa); Alessio Dicandia (University of Pisa); Giuliano Manara (University of Pisa); Smail Tedjini (Grenoble INP/LCIS); Etienne Perret (University Grenoble-Alpes); David Girbau (Universitat Rovira i Virgili); Antonio Lazaro (Universitat Rovira i Virgili (URV)); Ramon Villarino (Universitat Rovira i Virgili (URV));*
- 15:00 Detuned Dipole Array Backed by Rectangular Plate Applied as Chipless RFID Tag  
*Milan Polivka (Czech Technical University in Prague); Milan Svanda (Czech Technical University in Prague); J. Havlicek (Czech Technical University); Jan Machac (Czech Technical University);*
- 15:20 Two-part Stretchable Passive UHF RFID Textile Tags  
*Xiaochen Chen (Tampere University of Technology); Han He (Tampere University of Technology); Liqun Chen (Southeast University); Pasi Raunonen (Tampere University of Technology); Leena Ukkonen (Tampere University of Technology); Johanna Virkki (Tampere University of Technology);*
- 15:40 Fabrication and Performance Evaluation of 3D-printed Graphene Passive UHF RFID Tags on Card-board  
*Han He (Tampere University of Technology); Mitra Akbari (Tampere University of Technology); Xiaochen Chen (Tampere University of Technology); Amy Nommeots-Nomm (Tampere University of Technology); Liqun Chen (Southeast University); Leena Ukkonen (Tampere University of Technology); Johanna Virkki (Tampere University of Technology);*

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### Session 3P9a

#### Advances in Chipless RFID Tags and Sensors

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Wednesday PM, May 24, 2017

Room B3

Organized by Filippo Costa, Simone Genovesi

Chaired by Filippo Costa, Simone Genovesi

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- 14:00 Erroneous Reading of Information in Chipless RFID Tags  
*A. Boussada (Izmir Ekonomi Universitesi); Jan Machac (Czech Technical University); Milan Svanda (Czech Technical University in Prague); J. Havlicek (Czech Technical University); Milan Polivka (Czech Technical University in Prague);*

16:00 **Coffee Break**

**Session 3P9b****Antenna Array, Phased Array and Reconfigurable Array 1****Wednesday PM, May 24, 2017****Room B3**

Chaired by Sudhakar Alapati, Abdel Razik Sebak

- 16:20 Realization of Desired Shaped Beam Array of Helical Antennas  
*Alapati Sudhakar (RVR & JC College of Engineering); J. Ravindranadh (RVR & JC College of Engineering);*
- 16:40 Slot Antenna Array on Substrate Integrated Waveguide for W-band Radar Applications  
*Aulia Dewantari (Yonsei University); Jaeheung Kim (Yonsei University); Se-Yeon Jeon (Yonsei University); Eunhye Kim (Yonsei University); Min-Ho Ka (Yonsei University);*
- 17:00 A New Technique to Suppress Grating Lobes beyond Full Wavelength Element Spacing for Linear Arrays  
*Jacob Adopley (Ghana Technology University College);*
- 17:20 Independent Control of the Beamwidth and Sidelobe Level of Taylor One-parameter Arrays  
*Mohammed Al-Husseini (American University of Beirut); Elias Yaacoub (Arab Open University); Mohammed Baydoun (Lebanese Center for Studies and Research); Hassan Ghaziri (Lebanese Center for Studies and Research);*
- 17:40 Design of a Slot-loaded Dielectric Resonator Reflectorarray Using Perforation Technique  
*Reza Movahedinia (Concordia University); Mohammad Reza Chaharmir (Communications Research Centre Canada); Abdel Razik Sebak (Concordia University);*
- 18:00 Beam Steering Performance of Wideband Cavity-backed Patch Antenna Array Element  
*Artem Vilenskiy (Bauman Moscow State Technical University); Vladimir Litun (Bauman Moscow State Technical University); Konstantin Lyulyukin (Bauman Moscow State Technical University); Vladimir Mitrokhin (Bauman Moscow State Technical University);*

**Session 3P\_10****MS-1: Mini-symposium on Nanophotonics and Metamaterials 4****Wednesday PM, May 24, 2017****Room R11**

Organized by Pavel A. Belov, Andrey A. Bogdanov

Chaired by Anton K. Samusev, Alexey V. Yulin

- 14:00 Photonic Crystal Fano Lasers  
 Invited  
*Jesper Mork (Technical University of Denmark); Yi Yu (Technical University of Denmark); Elizaveta Semenova (Technical University of Denmark); Thorsten S. Rasmussen (Technical University of Denmark); Kresten Yvind (Technical University of Denmark);*
- 14:20 Surface-enhanced Second Harmonic Generation and Fluorescence Using Effectively Lossless GaP Nanoantennas in the Visible Regime  
 Invited  
*Gustavo Grinblat (Imperial College London); J. Cambiasso (Imperial College London); Y. Li (Imperial College London); A. Rakovich (Imperial College London); E. Cortes (Imperial College London); Stefan Alexander Maier (Imperial College London);*
- 14:40 Active and Nonlinear Semiconductor Metasurfaces  
 Invited  
*Maxim R. Shcherbakov (Lomonosov Moscow State University);*
- 15:00 Integration of MoS<sub>2</sub> Monolayers with Dielectric Nanoantennas  
 Invited  
*Tobias Bucher (Friedrich-Schiller-Universitat Jena); Franz J. F. Lochner (Friedrich-Schiller-Universitat Jena); Stefan Fasold (Friedrich Schiller University Jena); Aleksandr Vaskin (Friedrich Schiller University Jena); Paul D. Harrison (Friedrich-Schiller-Universitat Jena); Katie E. Chong (Australian National University); Antony George (Friedrich-Schiller-Universitat Jena); Falk Eilenberger (Friedrich Schiller University); Yuri S. Kivshar (Australian National University); Andrey Turchanin (University of Bielefeld); Thomas Pertsch (Friedrich-Schiller-Universitat Jena); Frank Setzpfandt (Friedrich-Schiller-Universitat Jena); Isabelle Staude (Friedrich-Schiller-Universitat Jena);*

- 15:20 Tamm Plasmon/Surface Plasmon Mode Beating for Spatially Controlled Plasmon Generation  
*Clementine Symonds (Universite de Lyon); Stefano Azzini (Universite de Lyon, Universite Claude Bernard Lyon 1, CNRS, Institut Lumiere Matiere); Guillaume Lheureux (Universite de Lyon, Universite Claude Bernard Lyon 1, CNRS, Institut Lumiere Matiere); Pascale Senellart (LPN/CNRS); Aristide Lemaitre (LPN/CNRS); Jean-Jacques Grefet (Ecole Centrale Paris); Christophe Sauvan (Universite Paris-Sud 11); Cedric Blanchard (Universite Paris-Sud); Joel Bellessa (Universite de Lyon);*

- 15:40 Dispersion of Surface Waves in All-dielectric Hyperbolic Metasurfaces  
*Kirill L. Koshelev (ITMO University); Andrey A. Bogdanov (ITMO University);*

16:00 **Coffee Break**

- 16:20 Energy Harvesting with Conjugate-impedance Matched Metamaterials  
*Stanislav I. Maslovski (University of Coimbra); T. Fernandes (IT-Leiria); N. B. Bras (IT-Lisboa); Henrique A. Silva (IT-Coimbra); Antonio L. Topa (Technical University of Lisbon);*

- 16:40 Microgap TPV Systems for Electricity Generation: A New Perspective  
*Constantin R. Simovski (Aalto University); Mohammad-Sajjad Mirmoosa (Aalto University);*

- 17:00 Electromagnetic Field Enhancement in Tip Silicon Metasurface and SERS Based Nanosensors  
*Andrey K. Sarychev (Institute for Theoretical and Applied Electrodynamics); Andrey N. Lagarkov (Institute for Theoretical and Applied Electromagnetics, Russian Academy of Sciences); I. A. Boginskaya (ITAE RAS); I. V. Bykov (Institute for Theoretical and Applied Electromagnetics, Russian Academy of Sciences); A. V. Ivanov (Institute for Theoretical and Applied Electromagnetics, Russian Academy of Sciences); I. A. Ryzhikov (Institute for Theoretical and Applied Electromagnetics (ITAE RAS)); M. V. Sedova (Institute for Theoretical and Applied Electromagnetics, Russian Academy of Sciences); I. Budashov (Emanuel Institute of Biochemical Physics, Russian Academy of Sciences); I. N. Kurochkin (Emanuel Institute of Biochemical Physics, Russian Academy of Sciences); Aleksandr V. Zverev (BMSTU); I. Rodionov (Bauman Moscow State Technical University);*

- 17:20 Tunable Extraordinary Transmission of Graphene Supported Asymmetrical Hole Arrays  
*Xiao-Yong He (Shanghai Normal University);*

- 17:40 New Metadevices Based on Multi-channel Metasurfaces  
*Invited faces*

*Ana Diaz-Rubio (Aalto University); Viktor S. Asadchy (Aalto University); Sergei A. Tretyakov (Aalto University);*

- 18:00 Nonlocal Bianisotropic Response of Homogenized 3D Photonic Crystals  
*Anatolii Konovalenko (Benemerita Universidad Autonoma de Puebla); F. Perez-Rodriguez (Benemerita Universidad Autonoma de Puebla);*

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**Session 3P\_11a**

**FocusSession.SC3: Advanced Photonic Technologies for Spectroscopic Applications 2**

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**Wednesday PM, May 24, 2017**

**Room R10**

Organized by Wei Dong Chen, Vincenzo Spagnolo

Chaired by Wei Dong Chen, Vincenzo Spagnolo

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- 14:20 Sensitive Detection of OH, HO<sub>2</sub>, and RO<sub>2</sub> Radicals  
*Invited with Advanced Spectroscopy*

*Weixiong Zhao (Hefei Institutes of Physical Science, Chinese Academy Sciences); Bo Fang (Anhui Institute of Optics and Fine Mechanics, Chinese Academy Sciences); Yanbo Gai (Anhui Institute of Optics and Fine Mechanics, Chinese Academy Sciences); Xiaoxiao Lin (Anhui Institute of Optics and Fine Mechanics, Chinese Academy Sciences); Weijun Zhang (Anhui Institute of Optics & Fine Mechanics, Chinese Academy of Sciences); Wei Dong Chen (Universite du Littoral Cote d'Opale);*

- 14:40 Atmospheric Measurements Using Dual Frequency Comb Spectroscopy  
*Invited*

*Kevin C. Cossel (National Institute of Standards and Technology); E. M. Waxman (National Institute of Standards and Technology); G.-W. Truong (National Institute of Standards and Technology); F. Giorgetta (National Institute of Standards and Technology); R. J. Wright (University of Colorado); S. Coburn (University of Colorado); G. B. Rieker (University of Colorado); Ian Coddington (National Institute of Standards and Technology); Nathan R. Newbury (National Institute of Standards and Technology);*

15:00 Laser-based Sensing of Short-lived Climate Pollutants  
Invited

*Gaoxuan Wang (Université du Littoral Côte d'Opale); Fengjiao Shen (Université du Littoral Côte d'Opale); Dong Chen (Université du Littoral Côte d'Opale); Hongming Yi (Université du Littoral Côte d'Opale); Rabih Maamary (Université du Littoral Côte d'Opale); Patrice Hubert (Université de Lille1); Alexandre Deguine (Université de Lille1); Denis Petitprez (Université de Lille1); Eric Fertein (Université du Littoral Côte d'Opale); Markus W. Sigrist (ETH Zurich); Wei Dong Chen (Université du Littoral Côte d'Opale);*

15:20 Better Understanding of Photoacoustic Signal Generation Helps to Develop Better Photoacoustic Systems for Practical Applications  
Invited

*Zoltán Bozóki (University of Szeged); Tibor Ajtai (MTA-SZTE Research Group on Photoacoustic Spectroscopy); Attila Varga (Hobre Laser Technology Ltd.); Gergely Kiss-Albert (University of Szeged); Gabor Szabo (University of Szeged);*

15:40 A Multi-wavelength Integrating Nephelometer for Aerosol Light Scattering Measurements

*Arun Ramachandran (National Institute of Technology Calicut); Jun Chen (University of Shanghai for Science and Technology); Ravi Varma (National Institute of Technology Calicut); Shuaishuai Yu (University of Shanghai for Science and Technology); Mingzhi Li (University of Shanghai for Science and Technology);*

16:00 **Coffee Break**

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### Session 3P\_11b

#### Nonlinear Electromagnetics and Metasurfaces

**Wednesday PM, May 24, 2017**

**Room R10**

Organized by Diana V. Semenikhina

Chaired by Diana V. Semenikhina

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16:20 The Spectral Characteristics of the Excitation of Cylindrical Surface with Nonlinear Loads with a Metamaterial Layer

*Diana V. Semenikhina (Southern Federal University); N. N. Gorbatenko (Southern Federal University); Andrey I. Semenikhin (Southern Federal University);*

16:40 Digital 2-bit Anisotropic Impedance Metasurfaces for UWB RCS Reduction

*Andrey I. Semenikhin (Southern Federal University); Diana V. Semenikhina (Southern Federal University); P. V. Blagovisnyy (Southern Federal University);*

17:00 Modeling of Higher Harmonic Generation in the Fourier Modal Method with Adaptive Coordinates

*Josselin Defrance (University of Stuttgart); Maxim L. Nesterov (University of Stuttgart); Martin Schaeferling (University of Stuttgart); Thomas Weiss (University of Stuttgart);*

17:20 Surface Versus Bulk Contribution to Second-harmonic Generation in Centrosymmetric Meta-atoms

*Daniel Timbrell (University College London); J. W. You (University College London); Yuri S. Kivshar (Australian National University); Nicolae-Coriolan Panoiu (University College London);*

17:40 Possibility of Isotropic Metafilm Representation by an Equivalent Homogeneous Layer

*Zhanna O. Dombrovskaya (Lomonosov Moscow State University); Anton V. Zhuravlev (Lomonosov Moscow State University);*

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### Session 3P\_12

#### Nonlinear and Extreme Nanophotonics 2

**Wednesday PM, May 24, 2017**

**Room R9**

Organized by Andrey A. Fedyanin, Yuri S. Kivshar

Chaired by Yuri S. Kivshar

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14:00 Tailoring Light Emission with Monolithic Nanoantenna Arrays Based on III-V Semiconductors

*Aleksandr Vaskin (Friedrich Schiller University Jena); Franz J. F. Lochner (Friedrich-Schiller-Universität Jena); Sheng Liu (Sandia National Laboratories); Matthias Zilk (Friedrich-Schiller-Universität Jena); Anna Fedotova (Friedrich Schiller University Jena); Sina Saravi (Friedrich-Schiller-Universität Jena); Frank Setzpfandt (Friedrich-Schiller-Universität Jena); Isabelle Staude (Friedrich-Schiller-Universität Jena); Igal Brener (Sandia National Laboratories); Thomas Pertsch (Friedrich-Schiller-Universität);*

- 14:20 Nanocrystalline Resonant Silicon Nanoparticle for Highly Efficient Second Harmonic Generation  
*Sergey Makarov (ITMO University); Mihail I. Petrov (ITMO University); Urs Zywiets (Laser Zentrum Hannover e.V.); T. Fischer (Laser Zentrum Hannover e.V.); V. A. Milichko (ITMO University); Dmitry A. Zuev (ITMO University); G. P. Zograf (ITMO University); Daria A. Smirnova (Australian National University); S. Starikov (Joint Institute for High Temperatures, Russian Academy of Sciences); Boris N. Chichkov (Laser Zentrum Hannover e.V.); Yuri S. Kivshar (Australian National University);*
- 14:40 Ultrafast Carrier Dynamics in LT-GaAs, Doped by  $\delta$ -Si  
*Dinar Ilgamovich Khusyainov (Moscow Technical University); C. Dekeyser (Moscow Technical University); Arseniy M. Buryakov (Moscow State Technical University of Radioengineering, Electronics and Automation (MSTU-MIREA)); Elena D. Mishina (Moscow State Technical University of Radioengineering, Electronics and Automation (MSTU-MIREA));*
- 15:00 Kinetics of Photoexcited Carriers in WSe<sub>2</sub> Monolayer under High Excitation  
*Elena D. Mishina (MIREA, Moscow Technological University); Sergey Lavrov (Moscow Technological University (MIREA)); Anastasia Pavlovna Shestakova (Moscow Technological University (MIREA)); Nikita A. Ilyin (MIREA, Moscow Technological University); Andrey Kudryavtsev (Moscow State Institute of Radioengineering, Electronics and Automation);*
- 15:20 Direct Gap Semiconductor Metasurfaces for Efficient and Low-power All-optical Modulation  
*Maxim R. Shcherbakov (Lomonosov Moscow State University); Sheng Liu (Sandia National Laboratories); V. V. Zubyyuk (Lomonosov Moscow State University); Aleksandr Vaskin (Friedrich Schiller University Jena); P. P. Vabishchevich (Lomonosov Moscow State University); G. Keeler (Sandia National Laboratories); Thomas Pertsch (Friedrich-Schiller-Universitat); T. V. Dolgova (Lomonosov Moscow State University); Isabelle Staude (Friedrich-Schiller-Universitat Jena); Igal Brener (Sandia National Laboratories); Andrey A. Fedyanin (Lomonosov Moscow State University);*
- 15:40 Nonlinear Localization of Chirped Femtosecond Pulse in Layered Photonic Structure  
*Vyacheslav A. Trofimov (Lomonosov Moscow State University); I. G. Zakharova (Lomonosov Moscow State University); Pavel Yu. Shestakov (Lomonosov Moscow State University);*
- 16:00 **Coffee Break**
- 16:20 Optimization of THG in 2D Crystals via Resonant Metal Plasmonic Nanostructures  
*Alvaro Rodriguez (The Barcelona Institute of Science and Technology); Joel D. Cox (The Barcelona Institute of Science and Technology); Andrea Marini (The Barcelona Institute of Science and Technology); F. Javier Garcia De Abajo (The Barcelona Institute of Science and Technology);*
- 16:40 Plasmon-driven High-harmonic Generation in Metal Nanowires  
*Alvaro Rodriguez (The Barcelona Institute of Science and Technology); Joel D. Cox (The Barcelona Institute of Science and Technology); F. Javier Garcia De Abajo (The Barcelona Institute of Science and Technology); Fernando Sols (Universidad Complutense de Madrid);*
- 17:00 Influence of Artificially Created Stress in the Buffer Layer of the Structure with Active Layer In<sub>0.38</sub>Ga<sub>0.62</sub>As on the THz Generation by Ultrashort Laser Pulses  
*Vladislav R. Bilyk (Federal State Budget Institution of Higher Education "Moscow Technological University" "MIREA"); Dinar Ilgamovich Khusyainov (Moscow Technical University); Arseniy M. Buryakov (Moscow State Technical University of Radioengineering, Electronics and Automation (MSTU-MIREA)); Elena D. Mishina (MIREA, Moscow Technological University);*

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### Session 3P.13a

#### Plasmon-assisted Effects in Nanoparticles and Nanostructures: From Field Enhancement to Material Modifications 2

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Wednesday PM, May 24, 2017

Room R8

Organized by Tatiana E. Itina

Chaired by Tatiana E. Itina, Alexey O. Kucherik

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- 14:00 Eigenmode Study of Coupled Plasmonic Nanostructures: Hetero Dimer and Dolmen Structures  
*Gabriel David Bernasconi (Swiss Federal Institute of Technology Lausanne (EPFL)); Valentin Flauraud (Swiss Federal Institute of Technology Lausanne (EPFL)); Jeremy Butet (Swiss Federal Institute of Technology Lausanne (EPFL)); Duncan T. L. Alexander (Swiss Federal Institute of Technology Lausanne (EPFL)); Jurgen Brugger (Swiss Federal Institute of Technology Lausanne (EPFL)); Olivier J. F. Martin (Swiss Federal Institute of Technology Lausanne (EPFL));*

- 14:20 Evolution of Plasmonic Response of a Semiconducting Particle: Transition from Surface to Bulk Phenomena  
*Zhijing Hu (Illinois Institute of Technology); Tao Shen (Kunming University of Science and Technology); Thomas T. Y. Wong (Illinois Institute of Technology);*
- 14:40 Fractal Bimetallic Thin Films Obtained by Laser Deposition of Colloidal Nanoparticles  
*Alexandre A. Antipov (Stoletovs' Vladimir State University); Dmitriy N. Bukharov (Stoletovs' Vladimir State University); Sergey M. Arakelyan (Stoletovs Vladimir State University); Stella V. Kutrovszkaya (Stoletovs' Vladimir State University); Alexey O. Kucherik (Stoletovs' Vladimir State University); Anton V. Osipov (Stoletovs' Vladimir State University); Alexandre V. Istratov (Stoletovs' Vladimir State University); Tigran A. Vartanyan (ITMO University); Tatiana E. Itina (University of Lyon);*
- 15:00 The CW-laser Ablation of Resonant Silicon NPs in Liquid  
*Anton V. Osipov (Vladimir State University); Sergey M. Arakelyan (Stoletovs Vladimir State University); A. B. Evlukhin (Laser Zentrum Hannover e.V.); Stella V. Kutrovszkaya (Stoletovs Vladimir State University);*
- 15:20 Self-consistent Modeling of Photoionization-induced  
Invited Field Distributions in Nanoparticles by Ultrashort Laser  
*Anton Rudenko (Lyon University); Tatiana E. Itina (University of Lyon); Konstantin S. Ladutenko (St. Petersburg National Research University of Information Technologies, Mechanics and Optics); Sergey Makarov (ITMO University);*
- 15:40 Plasmonic Nano-oven  
*Lijun Meng (The Barcelona Institute of Science and Technology); Renwen Yu (The Barcelona Institute of Science and Technology); Min Qiu (Zhejiang University); F. Javier Garcia De Abajo (ICFO Institut de Ciències Fotòniques, Mediterranean Technology Park);*
- 16:00 **Coffee Break**

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**Session 3P\_13b**  
**Medical Electromagnetics, Biological Effects,  
Bioimaging 1**

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**Wednesday PM, May 24, 2017**

**Room R8**

Chaired by Anthony H. J. Fleming

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- 16:20 Safe High-field MRI in the Presence of Medical Implants  
*Syed Ali Mohsin (National University of Computer and Emerging Sciences);*
- 16:40 A Range of Fields over the Spectrum in a Cell Colony May Control the Timing of Its Cell Cycle  
*Anthony H. J. Fleming (Biophotonics Research Institute);*
- 17:00 Geo-referential Application of Patients, Neoplasms and Telecom Infrastructure Associated with Radiation Non-ionizing Electromagnetic  
*Soto-Summano Jesus Leonardo (University of Guadalajara); Olivera-Guerrero Francisco Javier (Systems Developer and Professor); Tlacuilo Parra Jose Alberto (Pediatric Hospital, IMSS National Medical Center); Garibaldi Covarrubias Roberto (Pediatric Hospital, IMSS National Medical Center); Romo-Rubio Hugo (Pediatric Hospital, IMSS National Medical Center); Abundis-Gutierrez Emmanuel (Mexican Society for Non-Ionizing Radiation Protection);*
- 17:40 Quasi Real-time Measurement of MCG Using Off-diagonal GMI Gradiometer  
*Tsuyoshi Uchiyama (Nagoya University); Shinsuke Nakayama (Nagoya University);*
- 18:00 Far-Infrared (FIR) Frequencies and Bio-physical Parameters Related  
*Eugenio Sciauzero (Regione Friuli Venezia Giulia); Enrico Poddighe (O.S.T.E.M.D.A. srl); Martina Sciauzero (O.S.T.E.M.D.A. srl);*

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**Session 3P\_14a**  
**Advanced Photonic Materials and  
Nanophotonics**

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**Wednesday PM, May 24, 2017**

**Room B4**

Chaired by Francisco Gonzalez

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- 14:00 The Topological Electroconductivity Control in the Semiconductor/Metal/Carbon Unit by Laser-induced Nanogranular Structures  
*Sergey M. Arakelyan (Stoletovs Vladimir State University); Alexey O. Kucherik (Stoletovs Vladimir State University); Stella V. Kutrovskaya (Stoletovs Vladimir State University); Anton V. Osipov (Vladimir State University);*
- 14:20 UV-plasmonics with Rh Nanocubes  
*Yael Gutierrez (University of Cantabria); Fernando Moreno (University of Cantabria); Henry O. Everitt (Duke University); Francisco Gonzalez (University of Cantabria);*
- 14:40 Near-field Focusing of Dielectric Microspheres: Super-resolution and Field-invariant Parameter Scaling  
*Bing Yan (Bangor University); Liyang Yue (Bangor University); James Norman Monks (Bangor University); Zengbo Wang (Bangor University);*
- 15:00 Time-resolved Nonlinear Optical Response Induced in Glassy Semiconductors by Sub-bandgap Illumination  
*Elena A. Romanova (Saratov State University); Andrey I. Konyukhov (Saratov State University); G. N. Vasilyev (Saratov State University); S. A. Evseyko (Saratov State University); S. Guizard (Ecole Polytechnique);*
- 15:20 Strong Magneto-optical Effect and Low Optical Transmission Loss in  $\text{Ce}_x\text{Y}_{3-x}\text{Fe}_5\text{O}_{12}$  and  $\text{Ce}_x\text{Dy}_{3-x}\text{Fe}_5\text{O}_{12}$  Thin Films Deposited on Silicon on Insulator Waveguides  
*Yan Zhang (University of Electronic Science and Technology of China); Chuangtang Wang (University of Electronic Science and Technology of China); Keyi Sui (University of Electronic Science and Technology of China); Longjiang Deng (University of Electronic Science and Technology of China); Lei Bi (University of Electronic Science and Engineering of China);*
- 15:40 Silicon Dimers as Perfect Switching Optical Devices  
*Angela I. Barreda (University of Cantabria); Hassan Saleh (Fresnel Institute); Amelie Litman (Fresnel Institute); Francisco Gonzalez (University of Cantabria); Jean-Michel Geffrin (Fresnel Institute); Fernando Moreno (University of Cantabria);*
- 16:00 **Coffee Break**
- 16:20 Fabrication of Sub-150 nm Structures by Two-photon Polymerization for Plasmon Excitation  
*Lei Zheng (Laser Zentrum Hannover e.V.); Kestutis Kurselis (Laser Zentrum Hannover e.V.); Carsten Reinhardt (Laser Zentrum Hannover e.V.); R. Kiyan (Laser Zentrum Hannover e.V.); Andrey B. Evlyukhin (Laser Zentrum Hannover e.V.); U. Hinze (Laser Zentrum Hannover e.V.); Boris N. Chichkov (Laser Zentrum Hannover e.V.);*
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- Session 3P.14b**  
**Quantum Optics 2**
- 
- Wednesday PM, May 24, 2017**  
**Room B4**  
Organized by Byoung Seung Ham, Xiaoying Li  
Chaired by Byoung Seung Ham
- 
- 16:40 Recent Progresses on Quantum Key Distributions  
*Zhen Qiang Yin (University of Science and Technology of China);*
- 17:00 Realization of Sub-picosecond Clock Synchronization Based on Second-order Quantum Coherence  
*Ruifang Dong (National Time Service Center (NTSC), Chinese Academy of Sciences); Runai Quan (National Time Service Center, Chinese Academy of Science); Yiwei Zhai (National Time Service Center, Chinese Academy of Science); Mengmeng Wang (National Time Service Center, Chinese Academy of Science); Tao Liu (National Time Service Center, Chinese Academy of Science); Shou-Gang Zhang (National Time Service Center, Chinese Academy of Science);*
- 17:20 Indivisibility Test of Coherent States of Light  
*Jeongwoo Jae (Hanyang University); Kang Hee Seol (Hanyang University); Kwang-Geol Lee (Hanyang University); Jinyoung Lee (Hanyang University);*
- 17:40 Quantum Enhanced Joint Measurement of Multiple Non-commuting Observables with SU(1,1) Interferometer  
*Xiaoying Li (Tianjin University); Yuhong Liu (Tianjin University); Jiamin Li (Tianjin University); Nan Huo (Tianjin University); Z. Y. Ou (Indiana University-Purdue University Indianapolis);*
- 18:00 Optimizing Third-order Spontaneous Parametric Down-conversion in Microresonators  
*Mohsen Akbari (Kazan Federal University); Alexey A. Kalachev (Zavoisky Physical-Technical Institute of RAS);*



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**Session 3P0**  
**Poster Session 6**

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**Wednesday PM, May 24, 2017**

**14:00 PM - 19:00 PM**

**Room B2**

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| <p>1 Improving Satellite-derived Land Surface Temperature for Agro-drought Monitoring<br/><i>Zhihao Qin (Institute of Agro-Resources and Regional Planning, Chinese Academy of Agricultural Sciences); Zhao-Liang Li (Institute of Agricultural Resources and Regional Planning, Chinese Academy of Agricultural Sciences); Qiuyan Huang (Guangxi Teachers Education University); Shuhe Zhao (Nanjing University); Bin Xu (Institute of Agro-Resources and Regional Planning, Chinese Academy of Agricultural Sciences);</i></p> <p>2 Remote Sensing Method for Drought Monitoring of Sugarcane Farming in Guangxi of South China<br/><i>Qiuyan Huang (Guangxi Teachers Education University); Zhihao Qin (Institute of Agro-Resources and Regional Planning, Chinese Academy of Agricultural Sciences); Baoqing Hu (Guangxi Teachers Education University); Yong Zou (Chongzuo Municipal Government); Wenjuan Li (Institute of Agro-Resources and Regional Planning, Chinese Academy of Agricultural Sciences);</i></p> <p>3 Estimation of Downward Surface Solar Radiation in All Sky Conditions Based on Remote Sensing<br/><i>Lili Tu (Nanjing University); Zhihao Qin (Institute of Agro-Resources and Regional Planning, Chinese Academy of Agricultural Sciences); Wenjuan Li (Institute of Agro-Resources and Regional Planning, Chinese Academy of Agricultural Sciences); Fei Wang (Nanjing University); Lechan Yang (Nanjing University);</i></p> <p>4 Estimation of Atmospheric Water Vapor Content from CE-318 Sun-photometer Measurements in Nan-ning of South China<br/><i>Cheng Li (Guangxi Teachers Education University); Qiuyan Huang (Guangxi Teachers Education University); Zhihao Qin (Institute of Agro-Resources and Regional Planning, Chinese Academy of Agricultural Sciences); Zhao-Liang Li (Institute of Agricultural Resources and Regional Planning, Chinese Academy of Agricultural Sciences);</i></p> | <p>5 Application of Strip Lines for Magnetoelectric Device Design<br/><i>Vladimir Mikhailovich Petrov (Novgorod State University); Alexander Sergeevich Tatarenko (Novgorod State University); G. A. Semenov (Novgorod State University);</i></p> <p>6 The Electromagnetic Characteristics of the Composites Based on Hexaferrites and MCNT at Gigahertz and Terahertz Frequency Bands<br/><i>Evgeny Korovin (National Research Tomsk State University); Valentin I. Suslyayev (Tomsk State University); Victor A. Zhuravlev (Tomsk State University); Alexandra Pavlova (Tomsk State University); Aleksandr S. Kachalov (National Research Tomsk State University); Sergey Moseenkov (Boreskov Institute of Catalysis SB RAS); Vladimir Kuznetsov (Boreskov Institute of Catalysis SB RAS);</i></p> <p>7 The Radar Absorption Properties of the Hollow <math>\text{Fe}_3\text{O}_4</math> Microspheres Synthesized by the Plasma Dynamic Method<br/><i>Ivan Shanenkov (Jilin University); Alexander Sivkov (National Research Tomsk Polytechnic University); Alexander Ivashutenko (National Research Tomsk Polytechnic University); Victor A. Zhuravlev (Tomsk State University); Guodong Wei (Jilin University); Guangshe Li (Jilin University); Wei Han (Jilin University);</i></p> <p>8 Improving the Efficiency of the Transformer Rectifier Unit for the Aerospace Area<br/><i>Flur R. Ismagilov (Ufa State Aviation Technical University); Vyacheslav E. Vavilov (Ufa State Aviation Technical University); Denis V. Gusakov (Ufa State Aviation Technical University); Z. I. Yalalova (Ufa State Aviation Technical University); A. S. Mednov (Ufa State Aviation Technical University);</i></p> <p>9 Linear Motion Blur Parameters Estimation of Noisy Images Using Curve Fitting and Discrete Cosine Transform<br/><i>Jimmy Alexander Cortes Osorio (Universidad Tecnológica de Pereira); Ivan Dario Arellano Ramirez (Technological University of Pereira);</i></p> <p>10 Entanglement Dynamics of Two Electrons in Noisy Quantum Walks<br/><i>Alexey A. Melnikov (University of Innsbruck); L. E. Fedichkin (Institute of Physics and Technology, Russian Academy of Sciences);</i></p> <p>11 Maehly Approximation and Phase Extraction Hybrid Method for Fast Analysis of Wideband Electromagnetic Scattering from a Rough Surface<br/><i>Tao Song (East China Normal University); Lei Kuang (East China Normal University); Qing Huo Liu (Duke University);</i></p> |
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- 12 Numerical Studies of the Transmission of Light through a Two-dimensional Randomly Rough Interface  
*Oeyvind Storesund Hetland (NTNU Norwegian University of Science and Technology); Alexei A. Maradudin (University of California); Tor Nordam (NTNU Norwegian University of Science and Technology); Paul Anton Letnes (NTNU Norwegian University of Science and Technology); Ingve Simonsen (Norwegian University of Science and Technology);*
- 13 Application of MUSIC to Microwave Imaging for Detection of Dielectric Anomalies  
*Won-Kwang Park (Kookmin University); Kwang-Jae Lee (Electronics and Telecommunications Research Institute); Hwa Pyung Kim (Yonsei University); Seong-Ho Son (ETRI);*
- 14 On the Reconstruction of Perfectly Conducting Crack in Transverse Electric Case  
*Won-Kwang Park (Kookmin University);*
- 15 Least Condition of the Topological Derivative for Imaging of Thin, Flat Dielectric Inhomogeneity  
*Won-Kwang Park (Kookmin University);*
- 16 Shape Identification of Extended Dielectric Targets in an Inhomogeneous Medium Using Kirchhoff Migration  
*Chi Young Ahn (National Institute for Mathematical Sciences); Taeyoung Ha (National Institute for Mathematical Sciences); Kiwan Jeon (National Institute for Mathematical Sciences); Won-Kwang Park (Kookmin University);*
- 17 Application of Linear Sampling Method for Identifying Location of Small Dielectric Inhomogeneities in a Half-space  
*Sanguoo Kang (GeePs); Won-Kwang Park (Kookmin University);*
- 18 A Novel Method Based on the Vondrak-Cepek Algorithm for Correction of TWSTFT Diurnal  
*Yucen Liu (National University of Defense Technology); Hang Gong (National University of Defense Technology); Zengjun Liu (National University of Defense Technology); Shengqiang Lou (National University of Defense Technology); Jing-Yuan Li (National University of Defense Technology); Xiangwei Zhu (National University of Defense Technology);*
- 19 A Novel High-speed Parallel Sampling Technique by Analog and Digital Twice Mixing  
*Tao Li (National University of Defense Technology); Shaoying Su (National University of Defense Technology); Zengping Chen (National University of Defense Technology);*
- 20 Modified Superformula Contours Optimized via Genetic Algorithms for Exponentially Converging 2D Solutions of MFIE  
*Sadri Guler (Middle East Technical University); Can Onol (Middle East Technical University); Ozgur Ergul (Middle East Technical University); Emrah Sever (Gebze Technical University); Fatih Dikmen (Gebze Institute of Technology); Yury A. Tuchkin (Institute of Radiophysics and Electronics of National Academy of Sciences of Ukraine);*
- 21 On Electromagnetic Forces and Works Done by Them  
*Igor Pavlovich Krasnov (Krylov State Research Centre);*
- 22 Non-planar Metamaterial with Simultaneous Broadband Microwave Absorption and High Optical Transparency  
*Jie Cao (Wuhan University of Technology); Dawei Hu (Wuhan University of Technology); Wei Li (Wuhan University of Technology); Tianlong Wu (Wuhan University of Technology); Jianguo Guan (Wuhan University of Technology);*
- 23 Nonlocal Homogenization of Coated Wire Medium  
*Andrey A. Bogdanov (ITMO University); Maxim A. Gorlach (ITMO University); Mingzhao Song (ITMO University); Alexey P. Slobozhanyuk (ITMO University); Pavel A. Belov (ITMO University);*
- 24 Investigation of the Electrical and Magnetic Properties of Combined Metamaterials  
*Musayev Maksud Muradoglu (Rostov-on-Don Research Institute of Radio); Natalya N. Kisel (Southern Federal University);*
- 25 Manipulator to Extract Foreign Objects from the Hot Chamber of the Mine  
*Radda A. Iureva (ITMO University); Nadezhda K. Maltseva (ITMO University); Andrey Talan (AO "Diakont");*
- 26 Lighting Systems for the Control of the Processes, Occurring in the Pressurized-water Reactor  
*Radda A. Iureva (ITMO University); Nadezhda K. Maltseva (ITMO University); Denis Kustov (ITMO University);*

- 27 Optical Position Encoder Based on Four-section Diffraction Grating  
Alexander Y. Zherdev (*Bauman Moscow State Technical University*); Sergey B. Odinkov (*Bauman Moscow State Technical University*); Dmitrii S. Lushnikov (*Bauman Moscow State Technical University*); Vladimir V. Markin (*Bauman Moscow State Technical University*); Maria V. Shishova (*Bauman Moscow State Technical University*); Oleg A. Gurylev (*Bauman Moscow State Technical University*);
- 28 Laser Media Temperature and Low Absorption Coefficient Measurement Using Piezoelectric Probe Crystal  
Andrei E. Korolkov (*Moscow Institute of Physics and Technology*); Oleg A. Ryabushkin (*State University*); Aleskey Viktorovich Konyashkin (*Moscow Institute of Physics and Technology*);
- 29 Using 3D Printing Technology to Develop the Unmanned Aerial Vehicle Electro-optical Pod for Free-space Optical Communication  
Changqi Yang (*Xi'an Shiyou University*);
- 30 Surface and Volume Equivalent Temperature of Crystals in Arbitrary Shape for Piezoelectric Resonance Laser Calorimetry  
Georgii A. Aloian (*Moscow Institute of Physics and Technology*); N. V. Kovalenko (*Moscow Institute of Physics and Technology*); E. M. Khabushev (*Moscow Institute of Physics and Technology*); Oleg A. Ryabushkin (*State University*);
- 31 Analysis of Gain Longitudinal Dependence in Non-homogeneously Doped Multi-core Fibers  
Juan A. Valles (*University of Zaragoza*); David Benedicto (*University of Zaragoza*);
- 32 Measurements of Light Absorption by Black Carbon Using Filter-free Photoacoustic Spectroscopy  
Gaoxuan Wang (*Universite du Littoral Cote d'Opale*); Hongming Yi (*Universite du Littoral Cote d'Opale*); Patrice Hubert (*Université de Lille1*); Alexandre Deguine (*Université de Lille1*); Denis Petitprez (*Université de Lille1*); Eric Fertein (*University of the Littoral Opal Coast*); Julien M. Rey (*IQE-ETH Zurich*); Markus W. Sigrist (*ETH Zurich*); Wei Dong Chen (*University of the Littoral Opal Coast*);
- 33 Monitoring of Short-lived Nitrous Acid (HONO) by Quantum Cascade Laser-based Off-beam Quartz-enhanced Photoacoustic Spectroscopy (QEPAS)  
Hongming Yi (*Universite du Littoral Cote d'Opale*); Rabih Maamary (*Universite du Littoral Cote d'Opale*); Xiaoming Gao (*Anhui Institute of Optics and Fine Mechanics, Chinese Academy of Sciences*); Markus W. Sigrist (*ETH Zurich*); Eric Fertein (*University of the Littoral Opal Coast*); Wei Dong Chen (*Universite du Littoral Cote d'Opale*);
- 34 Radio-frequency Spectroscopy of Nonlinear-optical Crystal Boule Interacting with Laser Radiation  
Eldar M. Khabushev (*Moscow Institute of Physics and Technology*); Georgii A. Aloian (*Moscow Institute of Physics and Technology*); N. V. Kovalenko (*Moscow Institute of Physics and Technology*); Oleg A. Ryabushkin (*State University*);
- 35 Determination of Low Optical Absorption Coefficient of Laser Materials Using Acoustic Resonances Induced by Laser Radiation  
Alexei Alexandrovitch Molkov (*Moscow Institute of Physics and Technology*); Oleg A. Ryabushkin (*State University*); Aleskey Viktorovich Konyashkin (*Moscow Institute of Physics and Technology*);
- 36 Design of a Flexible Miniaturized Frequency Selective Surface Using a Screen Printing Technique  
Sung-Sil Cho (*Kongju National University*); Sun-Hong Yoon (*Korea Electronics Technology Institute*); Ic-Pyo Hong (*Kongju National University*);
- 37 Calibration of Electromagnetic Field Sensors in the Time-domain  
Joo-Gwang Lee (*Korea Research Institute of Standard and Science*);
- 38 Application of a Magnetic Sensor for Determining the Mass Imbalance of the Coriolis Vibratory Gyroscope with Cylindrical Metallic Resonator  
Mikhail A. Basarab (*Bauman Moscow State Technical University*); Evgenii A. Chumankin (*JSC ANPP "TEMP-AVIA"*); Boris S. Lunin (*MSU named after M. V. Lomonosov*); Valerii A. Matveev (*Bauman MSTU*);
- 39 Investigation of Transmission Line Response to Random Plane Waves through Stochastic Reduced Order Modeling  
Diego Bellan (*Politecnico di Milano*); Sergio A. Pignari (*Politecnico di Milano*);

- 40 Design and Implementation of a High-speed, Large-capacity, Multi-type Data Recording System Used in Wideband Phased-array Radar  
*Yingxiao Zhao (National University of Defense Technology); Yue Zhang (National University of Defense Technology); Qianqiang Lin (National University of Defense Technology); Tao Li (National University of Defense Technology); Zengping Chen (National University of Defense Technology);*
- 41 Experimental Control of One-dimensional Electromagnetic Environments in the UHF Range  
*Maxime Spirlet (University of Liege); Christophe Geuzaine (University of Liege); V. Beauvois (University of Liege);*
- 42 The Impact of Signal Regeneration on the DWDM System's Power Efficiency Using 10 Gbps NRZ-OOK  
*Deniss Pavlous (Riga Technical University); Vjaceslavs Bobrovs (Riga Technical University); Girts Ivanovs (Riga Technical University); Peteris Gavars (Riga Technical University);*
- 43 Circular Microstrip Patch Assisted Planar Crossover for GPS Application  
*V. M. Jayakrishnan (Amrita University); Sreedevi K. Menon (Amrita University);*
- 45 The Analysis of Transient Phenomena on Power Transmission Lines Due to Lightning Electromagnetic Pulses  
*Turan Cakil (Akdeniz University); Hamza Feza Carlak (Akdeniz University); Sukru Ozen (Akdeniz University);*
- 46 Reduction of Leakage Magnetic Fields in Wireless Power Transmission System Using Expanded Graphite  
*In-Gon Lee (Kongju National University); Kee-Sun Lee (Kongju National University); Ic-Pyo Hong (Kongju National University);*
- 47 Analysis of Discrete-time Energy-harvesting DF Relay in Rician Fading Channel  
*Ning Cao (Hohai University); Yifan Hu (Hohai University); Feng Wu (Hohai University); Muchen Chen (CAAC, Changle Airport);*
- 48 A Coil-arrayed Wireless Charging Platform  
*Jwo-Shiun Sun (National Taipei University of Technology); Guan-Pu Pan (National Taipei University of Technology); Pei-Hua Jiang (National Taipei University of Technology); Tsung-Lin Li (National Taipei University of Technology);*
- 49 3D Numerical Simulations of Implantable Cardiac Pacemaker EMI Triggered by Electric Vehicle Charging Wireless Power Transfer System  
*Takashi Hikage (Hokkaido University); Toshio Nojima (Hokkaido University);*
- 50 Evaluation of Coupling Factors between Human Body and Resonant Wireless Power Transfer Systems  
*Kyu-Jin Jung (Soongsil University); Jae-Hoon Shim (Soongsil University); Min-Soo Choi (Soongsil University); Jin-Kyu Byun (Soongsil University);*
- 51 Miniaturized Cavity-backed Slot Antenna Loaded with Magneto-dielectric Ferrite for RFID Tag Reader  
*Zhong Du (Southwest Jiaotong University); Quanyuan Feng (Southwest Jiaotong University); Jun Tao (Southwest Jiaotong University); Zongliang Zheng (Southwest Jiaotong University);*
- 52 Design of a 60-GHz GIPD Unbalanced-fed Bandpass-filtering On-chip Yagi Antenna  
*Y.-H. Chuang (National Cheng Kung University); C.-C. Chou (National Cheng Kung University); Huey-Ru Chuang (National Cheng Kung University); Yao-Chiang Kan (Yuan Ze University);*
- 53 Peculiarities of Salt Marshes Microwave Radiation in South of Western Siberia  
*A. N. Romanov (Institute for Water and Environmental Problems SB RAS); Ilya V. Khvostov (Institute for Water and Environmental Problems SB RAS);*
- 54 Seasonal Variations of Microwave Radiation of Saline Soils in the Kulunda Steppe on Evidence Derived from SMOS  
*A. N. Romanov (Institute for Water and Environmental Problems SB RAS); Ilya V. Khvostov (Institute for Water and Environmental Problems SB RAS); A. Yu. Sukovatova (Institute for Water and Environmental Problems SB RAS);*
- 55 On Possible Effect of Mineralized Water Bodies on Microclimate  
*A. N. Romanov (Institute for Water and Environmental Problems SB RAS); Ilya V. Khvostov (Institute for Water and Environmental Problems SB RAS);*
- 56 Estimating the Absolute Total Electron Content from the Single-frequency GPS/GLONASS Data  
*Anna A. Mylnikova (Institute of Solar-Terrestrial Physics (ISTP), Siberian Branch of Russian Academy of Sciences); Yury Vladimirovich Yasyukevich (Institute of Solar-Terrestrial Physics (ISTP), Siberian Branch of Russian Academy of Sciences); Vsevolod Borisovich Ivanov (Irkutsk State University); Anna S. Yasyukevich (Institute of Solar-Terrestrial Physics of Siberian Branch of Russian Academy of Sciences);*

- 57 Relaxation Model of Complex Relative Permittivity of Sandstones for the Frequency Range from 10 kHz to 1 GHz  
*Pavel Petrovich Bobrov (Omsk State Pedagogical University); E. S. Kroshka (Omsk State University); Anastasiya Sergeevna Lapina (Omsk State Pedagogical University); Andrey V. Repin (Omsk State Pedagogical University);*
- 58 Complex Dielectric Permittivity of Saline Soils and Rocks at Frequencies from 10 kHz to 8 GHz  
*T. A. Belyaeva (Omsk State Pedagogical University); Pavel Petrovich Bobrov (Omsk State Pedagogical University); E. S. Kroshka (Omsk State University); Andrey V. Repin (Omsk State Pedagogical University);*
- 59 On-orbit Spectral Calibration of Geostationary Interferometric Infrared Sounder (GIIRS)  
*Feng Xuan (Wuhan University);*
- 60 Hand-held Radar with Video Positioning System for Microwave Imaging  
*Vladimir V. Razevig (Bauman Moscow State Technical University); Andrey V. Zhuravlev (Bauman Moscow State Technical University); Margarita A. Chizh (Bauman Moscow State Technical University); Sergey I. Ivashov (Bauman Moscow State Technical University); Alexander S. Bugaev (Moscow Institute of Physics and Technology);*
- 61 Micromachined Terahertz Rectangular Waveguide Bandpass Filters with Circular Resonant Cavities  
*Li Li (University of Electronic Science and Technology of China); He Yue (Institute of Electronic Engineering, China Academy of Engineering Physics); Huang Kun (Institute of Electronic Engineering, China Academy of Engineering Physics); Xian-jin Deng (Institute of Electronic Engineering, China Academy of Engineering Physics); Fengjun Chen (Institute of Electronic Engineering, China Academy of Engineering Physics);*
- 63 An Improved High Angular Resolution Method by Using Four-channel Jointed Monopulse Radar  
*Huanyao Dai (State Key Laboratory of Complex Electromagnetic Environment Effects on Electronics and Information); Hui Han (State Key Laboratory of Complex Electromagnetic Environment Effects on Electronics and Information); Jianlu Wang (State Key Laboratory of Complex Electromagnetic Environment Effects on Electronics and Information); Xiong Xu (State Key Laboratory of Complex Electromagnetic Environment Effects on Electronics and Information); Huidong Qiao (State Key Laboratory of Complex Electromagnetic Environment Effects on Electronics and Information);*
- 64 Multitarget Track-before-detect from Image Observations Based on Multi-object Particle PHD Filter  
*Ran Zhu (National University of Defense Technology); Yunli Long (National University of Defense Technology); Zhichao Sha (National University of Defense Technology); Wei An (National University of Defense Technology);*
- 65 Multi-sensor Multi-object Joint Detection and Tracking from Image Observations Using Labeled Multi-Bernoulli Densities  
*Ran Zhu (National University of Defense Technology); Yunli Long (National University of Defense Technology); Jungang Yang (National University of Defence Technology); Wei An (National University of Defense Technology);*
- 66 Joint Cumulative Detection Probability and Cost Functions Optimization for Guided Search of Phased Array Radar  
*Qihua Wu (National University of Defense Technology); Jin Liu (National University of Defense Technology); Feng Zhao (National University of Defence Technology); Jianhua Yang (National University of Defence Technology); Xiao Shun-ping (National University of Defence Technology);*
- 67 A Sparse Signal Perspective for Blind User Identification in Multiuser DS-CDMA  
*Jianghai Liang (National University of Defence Technology); Feng-Hua Wang (National University of Defence Technology); Xiang Wang (National University of Defence Technology); Zhitao Huang (National University of Defence Technology);*

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#### Session 4A1

#### Application of EM Field in Medical Diagnostics and Therapy 1

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Thursday AM, May 25, 2017

Room G5

Organized by Jan Vrba

Chaired by Jan Vrba

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- 09:00 Impact of Histology Region Size on Measured Dielectric Properties of Biological Tissues  
*Emily Porter (National University of Ireland Galway); Alessandra La Gioia (National University of Ireland Galway); Martin O'Halloran (National University of Ireland Galway);*

- 09:20 **Porphyritic Photodiagnosis Agents: Comparative Studies in Aqueous, Buffer and Albumin-containing Solutions**  
*Elena V. Kriukova (ITMO University); Inna M. Belousova (ITMO University); Antonina V. Dadeko (S. I. Vavilov State Optical Institute); Tatyana K. Krisko (S. I. Vavilov State Optical Institute); Irina V. Martynenko (ITMO University); Maria R. Savchenko (ITMO University);*
- 09:40 **Optical-physical Aspects of Fractal Art Therapy**  
*Aleksandr Vladimirovich Averchenko (Lomonosov Moscow State University); Pavel Vasil'evich Korolenko (M. V. Lomonosov Moscow State University); Alexey Yurevich Mishin (M. V. Lomonosov Moscow State University);*
- 10:00 **A Feasibility Study for Circadian Rhythm Monitoring via a Continuous-wave Radar**  
*Lesya N. Anishchenko (Bauman Moscow State Technical University); Irina L. Alborova (Bauman Moscow State Technical University); Elizaveta M. Rutskova (Bauman Moscow State Technical University);*
- 10:20 **Sapphire Shaped Crystals Allow Combining Surgery with Optical Medical Diagnostics and Exposure**  
*Vladimir N. Kurllov (Institute of Solid State Physics of Russian Academy of Sciences (ISSP RAS)); Irina A. Shikunova (Institute of Solid State Physics of Russian Academy of Sciences); Gleb M. Katyba (Institute of the Solid State Physics of Russian Academy of Sciences); Kirill I. Zaytsev (Bauman Moscow State Technical University); Igor V. Reshetov (I. M. Sechenov First Moscow State Medical University);*
- 10:40 **A Flexible Silver-printed Array Coil for Magnetic Resonance at 7T**  
*Andrea Melis (University of Cagliari); S. Casu (University of Cagliari); Claudio Puddu (University of Cagliari); Alessandro Fanti (University of Cagliari); Nikola Djuric (University of Novi Sad); Giuseppe Mazzaella (University of Cagliari); Francesca Maggiorelli (INFN-Istituto Nazionale di Fisica Nucleare — Sezione Pisa); Alessandra Retico (INFN-Istituto Nazionale di Fisica Nucleare — Sezione Pisa); Gianluigi Tiberi (University of Pisa);*
- 11:00 **Coffee Break**
- 11:20 **Through the Wall Detection of Heartbeat and Breathing Using SFCW Radar**  
*Mustafa Pehlivan (Ege University); Korkut Yegin (Ege University);*
- 11:40 **Investigation of Distribution of Electromagnetic Fields Inner Biological Objects**  
*Natalya N. Kisel (Southern Federal University); Vitaliy A. Cheremisov (Southern Federal University); Dmitriy V. Kisel (Moscow State University);*
- 12:00 **Analysis and Comparison of an Inductive Powering Unit Control Methods**  
*Arseny Anatolevich Danilov (National Research University of Electronic Technology); Eduard Adipovich Mindubaev (National Research University of Electronic Technology); Sergey Vasilyevich Selishchev (National Research University of Electronic Technology);*
- 12:20 **Overview of Prospective Applications of Microwaves in Medicine and Biology**  
*Jan Vrba (Czech Technical University in Prague); Jiri Kubes (Institute of Radiation Oncology in Prague); Ferdinand Trebicky (Institute of Radiation Oncology); Frantisek Vozeh (Charles University); Jan Barcal (Charles University in Prague); Luca Vannucci (Institute of Microbiology, Czech Academy of Sciences); Jan Vrba, Jr. (Czech Technical University in Prague); David Vrba (Czech Technical University in Prague); Ladislav Oppl (Czech Technical University in Prague); Ondrej Fiser (Czech Technical University in Prague); Ilja Merunka (Czech Technical University in Prague); Jesus Cumana (Institute of Microbiology, Czech Academy of Sciences);*
- 12:40 **MTM Applicators for Microwave Hyperthermia in Cancer Treatment**  
*David Vrba (Czech Technical University in Prague); Jan Vrba, Jr. (Czech Technical University in Prague); Jesus Cumana (Institute of Microbiology, Czech Academy of Sciences);*

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### Session 4A2

### Radio Wave Propagation and Wireless Channel Modeling

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Thursday AM, May 25, 2017

Room G6

Organized by Tao Jiang

Chaired by Tao Jiang

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- 09:00 **An Improved Resource Allocation Algorithm Based on Stackelberg Game and Gradient Theory**  
*Fang Ye (Harbin Engineering University); Jing Dai (Harbin Engineering University); Yibing Li (Harbin Engineering University);*

- 09:40 Application of Feature Selective Validation to Radio Scattering Models for Sea Surface Propagation  
*Jialin Shi (Ocean Research Centre of China); Xiaochao Jiang (Harbin Engineering University); Shuang Gao (Harbin Engineering University); Tao Jiang (Harbin Engineering University);*
- 10:00 A Novel RMS Delay Spread Model for VHF/UHF Bands  
*Sridhar Bolli (Indian Institute of Technology); Mohammed Zafar Ali Khan (Indian Institute of Technology);*
- 10:20 An Analysis of Maritime Communications between a Ship at Sea and a Shore Station by a Ray-based Monte Carlo Method  
*Attasit Tingsawatit (Chulalongkorn University); Panuwat Janpugdee (Chulalongkorn University);*
- 10:40 An Improved Mechanical Fault Diagnosis Algorithm Based on Weighted Entropy Fusion and Modified DS Theory  
*Jie Chen (Harbin Engineering University); Fang Ye (Harbin Engineering University); Yibing Li (Harbin Engineering University);*
- 11:00 **Coffee Break**
- 11:20 Interference Cancellation and PAPR Reduction Using Carrier Interferometry Codes for Adaptive NC-SOFDM System Used with Dynamic Spectrum Access  
*Maryam Saeed (IICT); Abdul Waheed Umrani (Mehran University of Engineering and Technology); Fahim Aziz Umrani (Mehran University of Engineering and Technology); Syed M. Zafi S. Shah (Mehran University of Engineering and Technology); Saadullah Kalwar (Mehran UET); Naveed Ahmed (Politecnico Di Milano); Farhan Ahmed (Dawood UET);*
- 11:40 Indoor Positioning System Based on INS/WiFi Propagation Model  
*Xianfeng Yang (Harbin Engineering University); Menglu Deng (Harbin Engineering University); Tao Jiang (Harbin Engineering University);*
- 09:00 Kolmogorov Entropy of 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);*
- 09:20 Fast DBIM Solutions on Supercomputers with Frequency-hopping for Imaging of Large and High-contrast Objects  
*Mert Hidayetoglu (University of Illinois at Urbana-Champaign); Anthony Podkowa (University of Illinois at Urbana-Champaign); Michael L. Oelze (University of Illinois at Urbana-Champaign); Wen-Mei Hwu (University of Illinois at Urbana-Champaign); Weng Cho Chew (University of Illinois);*
- 09:40 Analytical Representation of the Sensitivity Functions for High-resolution Image Reconstruction in Parallel-plate Time-domain Diffuse Optical Tomography  
*Alexander B. Konovalov (Zababakhin Institute of Applied Physics); Vitaly V. Vlasov (Zababakhin Institute of Applied Physics);*
- 10:00 Newton-Kantorovich Method Applied to the Reconstruction of Surface Profiles under Tikhonov's Regularization with Domain Constraint  
*Slimane Arhab (Universite d'Avignon et des Pays de Vaucluse); Maminirina Joelson (Universite d'Avignon et des Pays de Vaucluse); G. Micolau (Universite d'Avignon et des Pays de Vaucluse);*
- 10:20 Investigation of Measurement Errors in Microwave Imaging System for Brain Stroke Monitoring  
*Invited Christian Pichot (University of Nice Sophia Antipolis, CNRS); Ibtissam El Kanfoud (Universite Cote d'Azur); Ioannis Aliferis (Universite de Nice Sophia-antipolis); Victorita Dolean (Universite Cote d'Azur); Marcella Bonazzoli (Universite Cote d'Azur); Francesca Rapetti (University of Nice); P.-H. Tournier (LJLL); Frederic Nataf (UPMC Univ Paris 06); Serguei Semenov (EMTensor GmbH);*
- 10:40 Passive Crosswind Profiling Based on the Analysis of Turbulent Distortions Evolution in Incoherent Images  
*Anna S. Eremina (V.E. Zuev Institute of Atmospheric Optics, SB RAS); V. V. Dudorov (V.E. Zuev Institute of Atmospheric Optics, SB RAS);*

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**Session 4A3**  
**Inverse Problems and Imaging**

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**Thursday AM, May 25, 2017**

**Room G7**

Organized by Rocco Pierri, Raffaele Solimene

Chaired by Raffaele Solimene, Giovanni Leone

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11:00 **Coffee Break**

- 11:20 An Inverse Problem for Angularly Varying Sources: Preliminary Results  
*Giovanni Leone (Universita degli studi della Campania Luigi Vanvitelli); Maria Antonia Maisto (Universita degli studi della Campania Luigi Vanvitelli); Rocco Pierri (Universita degli studi della Campania Luigi Vanvitelli);*
- 11:40 Joint Electromagnetic and Acoustic Inversion for Objects in a Layered Medium Host  
*Tian Lan (Xiamen University); Qing Huo Liu (Duke University);*
- 12:00 Implementation and Evaluation of the Utilization of Partial Knowledge of Phase Differences in Magnitude Only Near-field Far-field Transformation  
*Josef Knapp (Technical University of Munich); Alexander Paulus (Technical University of Munich); Thomas F. Eibert (Technische Universitat Munchen);*
- 12:20 SVD Computation for Singular Value Optimization in Inverse Problems  
*Amedeo Capozzoli (Universita di Napoli Federico II); Claudio Curcio (Universita di Napoli Federico II); Angelo Liseno (Universita di Napoli Federico II);*
- 12:40 A Novel Two Green Functions Method for the Identification of Sources Located in a Hemisphere  
*Ali Alkumru (Gebze Technical University); H. Arda Ulku (Gebze Technical University); Gokhan Cinar (Eskisehir Osmangazi University, Meselik Campus); Sevda Vatansever (Gebze Technical University); Hakan Sertlek (Gebze Technical University);*
- 13:00 Application of Compressive Sensing to High-resolution Weather Observations with Imaging Radar  
*Serkan Ozturk (University of Oklahoma); Tian-You Yu (University of Oklahoma); Lei Ding (University of Oklahoma);*

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**Session 4A4****Novel Mathematical Methods in Electromagnetics 2**

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**Thursday AM, May 25, 2017****Room G8**

Organized by Yury V. Shestopalov, Kazuya Kobayashi

Chaired by Yury V. Shestopalov, Kazuya Kobayashi

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- 09:00 A Semi-analytical Solution for TE Electromagnetic Scattering from Arbitrary Shaped Dielectric Cylinders  
*Birol Aslanyurek (Yildiz Technical University); Tolga Ulas Gurbuz (Gaziantep University); Ugur Cem Hasar (University of Gaziantep);*
- 09:20 Numerical Convergence Study of Some Iterative Algorithms for Coupled Physics Electrical Conductivity Imaging  
*Alex Timonov (University of South Carolina Upstate);*
- 09:40 Intertype Transformation of Modes in Nonhomogeneous Waveguides  
*Ignat V. Fialkovsky (Universidade Federal do ABC); Maria V. Perel (St. Petersburg State University);*
- 10:00 Diffraction by a Transversal Screen in a Planar Waveguide  
*A. V. Shanin (Moscow State University); Andery Igorevich Korolkov (Moscow State University);*
- 10:20 Aposteriori Estimates in Inverse Problems for the Helmholtz Equation  
*Alexander G. Nakonechny (Kiev National University); Yury K. Podlipenko (Kiev National University); Yury V. Shestopalov (University of Gavle);*
- 10:40 On Principle of the Least Action in Classical Electrodynamics  
*Igor Pavlovich Krasnov (Krylov State Research Centre);*
- 11:00 **Coffee Break**

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**Session 4A5****Ultra-thin Plasmonic and Photonic Structured Surfaces for Sensing, Energy Harvesting, and Spectral Engineering of Light**

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**Thursday AM, May 25, 2017****Room G9**

Organized by Junpeng Guo

Chaired by Junpeng Guo

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- 09:00 Emission Enhancement and Redirection in Plasmonic Pillar Nanoantenna  
*Joel Bellessa (Universite de Lyon); J. Paparonne (Universite de Lyon); Clementine Symonds (Universite de Lyon); J. M. Benoit (Universite de Lyon); J. Laverdant (Universite de Lyon);*
- 09:20 Boundary Integral Spectral Element Method for Linear and Nonlinear Nanophotonics  
*Jun Niu (Duke University); Ma Luo (Duke University); Qing Huo Liu (Duke University);*



- 09:40 Transverse Stratified Structures for Filtering Signals at Terahertz Frequencies  
*Daniele Lo Forti (University of Alabama in Huntsville); Robert G. Lindquist (University of Alabama in Huntsville);*
- 10:00 Fabrication of 5 nm Graphene Nanopores with a Helium Ion Microscope for Biomolecule Detection  
*Deqiang Wang (Chongqing Institute of Green and Intelligent Technology, Chinese Academy of Sciences); Yunsheng Deng (Chongqing Institute of Green and Intelligent Technology, Chinese Academy of Sciences); Yunjiao Wang (Chongqing Institute of Green and Intelligent Technology, Chinese Academy of Sciences);*
- 10:20 The Method of Surface Plasmon-polariton Pulses Generation via Cooperative Effects in Waveguide Spaser  
*A. V. Shesterikov (Alexandr and Nikolai Stoletovs Vladimir State University); M. Yu. Gubin (Alexandr and Nikolai Stoletovs Vladimir State University); M. G. Gladush (Institute of Spectroscopy, Russian Academy of Sciences); Alexey V. Prokhorov (Alexandr and Nikolai Stoletovs Vladimir State University);*
- 11:00 **Coffee Break**
- 11:20 Strain Driven Tunable Electronic Properties of Pentagraphene Nanotubes: A First-principles Calculation  
*Zhanyu Wang (Fudan University); Rongjun Zhang (Fudan University); Yuxiang Zheng (Fudan University); Liangyao Chen (Fudan University); Songyou Wang (Fudan University); Wan-Sheng Su (National Taiwan Science Education Center);*
- 11:40 Mechanisms of Plasmonic and Non-plasmonic Resonance Enhanced Light Absorption in Patterned Metal-insulator-metal Nanostructures  
*Junpeng Guo (University of Alabama in Huntsville); Wonkyu Kim (University of Alabama in Huntsville);*
- 09:00 Heat Island Phenomena and It's Influence on Troposphere Mezo-scale Structure Measured by Set of GPS-GLONASS Receivers  
*Vladislav E. Khutorov (Kazan Federal University); G. M. Teptin (Kazan Federal University); Olga G. Khutorova (Kazan Federal University);*
- 09:20 GPS Signals Phase Fluctuations Caused by Atmospheric Integral Water Vapor Mesoscale Variability  
*Olga G. Khutorova (Kazan Federal University); Vladislav E. Khutorov (Kazan Federal University); A. S. Blizorukov (Kazan Federal University); G. M. Teptin (Kazan Federal University);*
- 09:40 Experimental and Numerical Studies of the Scattering of Light from a Two-dimensional Randomly Rough Interface in the Presence of Total Internal Reflection: Optical Yoneda Peaks  
*Alma Karen Gonzalez-Alcalde (Centro de Investigacion Cientifica y de Educacion Superior de Ensenada); Jean-Philippe Banon (Norwegian University of Science and Technology); Oyvind Storesund Hetland (NTNU Norwegian University of Science and Technology); Alexei A. Maradudin (University of California); Eugenio Rafael Mendez (Centro de Investigacion Cientifica y de Educacion Superior de Ensenada (CI-CESE)); Tor Nordam (NTNU Norwegian University of Science and Technology); Ingve Simonsen (Norwegian University of Science and Technology);*
- 10:00 Localization of Electromagnetic Waves in Randomly-stratified Uniaxial Media  
*Kihong Kim (Ajou University);*
- 10:20 Spatiotemporal Control of Microwaves in a Cavity by Wave Front Shaping  
*Philipp Del Hougne (ESPCI Paris & CNRS); Fabrice Lemoult (ESPCI ParisTech); Mathias Fink (ESPCI Paris Tech and CNRS); Geoffroy Lerosey (ESPCI Paris and CNRS);*
- 10:40 Classical Implementation of a Quantum-Fourier-Transform Computation with Wavefront Shaping  
*Philipp Del Hougne (ESPCI Paris & CNRS); Sebastien Popoff (ESPCI Paris & CNRS); Laurent Daudet (ESPCI Paris & CNRS); Geoffroy Lerosey (ESPCI Paris and CNRS);*
- 11:00 **Coffee Break**
- 11:40 Molecular Dynamics as Studied by Laser Correlation Spectroscopy  
*Elina K. Nepomnyashchaya (Peter the Great Saint Petersburg Polytechnic University); Evgenii T. Aksenov (Peter the Great Saint Petersburg Polytechnic University); E. N. Velichko (Peter the Great Saint Petersburg Polytechnic University);*

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### Session 4A6

### Waves Propagation and Scattering in Random Media

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Thursday AM, May 25, 2017

Room G10

Organized by Hosam El-Ocla

Chaired by Kihong Kim, Qing Zhao

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- 12:00 The Dual Jones Birefringence in Magneto-electric Media  
*Jian-Ye Wei (Beijing Institute of Technology); Waqas Mahmood (Beijing Institute of Technology); Guang-Jie Zhai (National Space Science Center, Chinese Academy of Sciences); Qing Zhao (Beijing Institute of Technology);*

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**Session 4A7**

**Microwave and Millimeter Wave Circuits and Devices, CAD 1**

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**Thursday AM, May 25, 2017**

**Room B1**

Chaired by Yongchae Jeong

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- 09:00 Synthesis of an Artificial High Effective Permittivity Medium in a SIW Periodically Loaded with Metallic Cylinders  
*Gaspar Vicent (Universidad Miguel Hernandez de Elche); Angela Coves Soler (Universidad Miguel Hernandez de Elche); Enrique Bronchalo (Universidad Miguel Hernandez de Elche); German Torregrosa-Penalva (Universidad Miguel Hernandez de Elche);*
- 09:20 Number of Calibration Loads and Degree of Freedom of Fixture's  $T$ -parameter for Indirect  $S$ -parameter Estimation  
*Yuya Kojima (Gifu University); Toshikazu Sekine (Gifu University); Yasuhiro Takahashi (Gifu University);*
- 09:40 Design of Compact Strip-line Directional Couplers for High Power Operation within Frequency Band 4–12 GHz  
*Mikhail G. Pischenko (JSC "Faza"); Dmitry G. Pischenko (JSC "Faza"); Mikhail B. Manuilov (Southern Federal University);*
- 10:00 A Design of 180° Coupler with Predefined Negative Group Delay Characteristics  
*Girdhari Chaudhary (Chonbuk National University); Boram An (Chonbuk National University); Phirun Kim (Chonbuk National University); Jongsik Lim (Soonchunhyang University); Yongchae Jeong (Chonbuk National University);*
- 10:20 Application of Transmission Line-based Inductors to Dual-band Branch Line Couplers  
*Jongsik Lim (Soonchunhyang University); Boram An (Chonbuk National University); Yongchae Jeong (Chonbuk National University); Sang-Min Han (Soonchunhyang University); Dal Ahn (Soonchunhyang University); Kwansun Choi (Soonchunhyang University);*
- 10:40 Full Wave Analysis and Design of Waveguide Diplexer with Ridged Sections and Diaphragms  
*Mikhail B. Manuilov (Southern Federal University); K. V. Kobrin (Southern Federal University);*
- 11:00 **Coffee Break**
- 11:20 On the Complexity of Randomly Overlapped Subarray Feeding Networks  
*Davide Bianchi (University of Pisa); Simone Genovesi (University of Pisa); Agostino Monorchio (University of Pisa);*
- 11:40 Compact Microstrip Feed Networks for Low-impedance Quadrifilar Helix Antennas  
*Dmitriy Aleksandrovitch Dyomin (Moscow Institute of Physics and Technology); Nikolai Petrovitch Chubinskiy (Moscow Institute of Physics and Technology); Evgeniya Sergeevna Stukalova (Moscow Institute of Physics and Technology); Ivan Vasilevitch Filatov (Moscow Institute of Physics and Technology);*
- 12:00 Multiphysics Analysis of High Power CW Ferrite Phase Shifter Designs for Application in Circulators  
*Harish V. Dixit (Veermata Jijabai Technological Institute); Aviraj R. Jadhav (V.J.T.I.); Yogesh M. Jain (IPR); Alice N. Cheeran (V.J.T.I.); Vikas Gupta (VCET); Promod K. Sharma (Institute for Plasma Research);*
- 12:20 Design of Wideband Lumped Element Circulator  
*Mrunmay Mahesh Sahasrabudhe (Mumbai University); Parth Shah (Mumbai University); Arun C. Nambiar (Mumbai University); Shreya Shah (Mumbai University); Neha Gharat (Mumbai University); Vikas Gupta (VCET); Harish Dixit (Mumbai University);*
- 12:40 Design of a High Power Junction Circulator  
*Arun C. Nambiar (Mumbai University); Shreya Shah (Mumbai University); Mrunmay Mahesh Sahasrabudhe (Mumbai University); Parth Shah (Mumbai University); Vikas Gupta (VCET); Neha Gharat (Mumbai University); Harish Dixit (Mumbai University);*

**Session 4A8****MS-2: BRICS Mini-symposium on Nonlinear Photonics and Photonic Assisted Technologies 3****Thursday AM, May 25, 2017****Room B5**

Organized by Alexander. P. Alodjants, Yikun Liu

Chaired by Alexander. P. Alodjants

- 09:00 Dielectric and Metallic Nanostructures for Photon Control  
*Emiliano Rezende Martins (University of Sao Paulo);*
- 09:20 Coherent Controlization in a Quantum Register via Cavity QED  
*N. Friis (University of Innsbruck); Alexey A. Melnikov (University of Innsbruck); G. Kirchmair (Austrian Academy of Sciences); H. J. Briegel (University of Innsbruck);*
- 09:40 Determining the Internal Quantum Efficiency of Nitrogen-vacancy Defects in Bulk Diamond  
*Ilya P. Radko (Technical University of Denmark); Mads Boll (Technical University of Denmark); Ulrik L. Andersen (Technical University of Denmark); Alexander Huck (Technical University of Denmark);*
- 10:00 Spin-polarization Dynamics of Exciton Polaritons under the Artificial Gravitation Effect in Wedged Microcavities  
*Evgeny S. Sedov (University of Southampton); A. P. Alodjants (Vladimir State University Named after A. G. and N. G. Stoletovs); R.-K. Lee (National Tsing-Hua University); Alexey V. Kavokin (University of Southampton (GB));*
- 10:20 Lateral Oxide-refilled Textured Design on High-performance GaN-based Micro-LEDs  
*Shen-Che Huang (National Chiao Tung University); Heng Li (National Chiao Tung University); Zhe-Han Zhang (National Chiao Tung University); Hsiang Chen (National Chi Nan University); Tien-Chang Lu (National Chiao Tung University);*
- 10:40 Broad-band Circular Bragg Grating for High Efficient Single-photon Extraction  
*Juntao Li (Sun Yat-sen University); Rongbin Su (Sun Yat-sen University); Tengwei Zhang (Sun Yat-sen University); Xue-Hua Wang (Sun Yat-Sen University);*
- 11:00 **Coffee Break**

- 11:20 Optical Quantum State Generation with Integrated Keynote Frequency Combs

*Christian Reimer (INRS-EMT); Michael Kues (INRS-EMT); Piotr Roztock (INRS-EMT); Benjamin Wetzel (INRS-EMT); Brent E. Little (Xi'an Institute of Optics and Precision Mechanics, Chinese Academy of Science); Sai T. Chu (City University of Hong Kong); Lucia Caspani (INRS-EMT); David J. Moss (University of Sydney); Roberto Morandotti (INRS-EMT);*

- 11:50 Beam shaping via Photopatterned Liquid Crystals  
*Wei Hu (Nanjing University);*
- 12:10 Electrically Pumped III-N Microcavity Light Emitters Incorporating an Oxide Confinement Aperture  
*Ying-Yu Lai (National Chiao Tung University); Tsuchi Chang (National Chiao Tung University); Ya-Chen Li (National Chiao Tung University); Tien-Chang Lu (National Chiao Tung University); Shing-Chung Wang (National Chiao Tung University);*
- 12:30 Optical Forces in Metamaterials and Graphene Plasmonic Nanostructures  
*Jianfa Zhang (National University of Defense Technology);*

**Session 4A9a****Antenna Array, Phased Array and Reconfigurable Array 2****Thursday AM, May 25, 2017****Room B3**

Chaired by Filippo Costa

- 09:00 Practical Aspects of Active Phased Arrays Characterization during Thermal Testing  
*Grigory Kuznetsov (Moscow Aviation Institute (National Research University)); Maxim Miloserdov (Moscow Aviation Institute (National Research University)); Vladimir Temchenko (Moscow Aviation Institute (National Research University)); Alexander Kovalenko (Research Institute of Precision Instruments); Dmitry Voskresenski (Moscow Aviation Institute (National Research University)); Sergey Vnotchenko (Research Institute of Precision Instruments); Viktor Riman (Research Institute of Precision Instruments); Anatoliy Shishanov (Research Institute of Precision Instruments);*
- 09:20 Leaky Coaxial Cable with Continuous Scanning Directive Beam  
*Ahmed Radwan (University of Oulu); Zeeshan Siddiqui (University of Oulu); Marko Sonkki (University of Oulu); Marko Tuhkala (University of Oulu); Sami Myllymaki (University of Oulu);*

- 09:40 Design of a W-band One-dimensional Beam Scanning Slotted Waveguide Antenna with Narrow Beam and Low Side Lobe  
*Lei Tan (Southeast University); Jian Zhang (Southeast University); Wenbo Wang (Southeast University); Jinping Xu (Southeast University);*
- 10:00 Design of Metasurface Radomes for Wide-scan Phased Array Antennas  
*Davide Bianchi (University of Pisa); Simone Genovesi (University of Pisa); Filippo Costa (University of Pisa); Michele Borgese (University of Pisa); Agostino Monorchio (University of Pisa);*
- 10:20 Design of Waveguide Slot Array to Generate Sum and Difference Pattern for Synthetic Aperture Radar  
*Hisham Khalil (The University of Lahore); Saeed Ur Rahman (Nanjing University of Aeronautics and Astronautics (NUAA)); Muhammad Mansoor Ahmed (Mohammad Ali Jinnah University); Qunsheng Cao (Nanjing University of Aeronautics and Astronautics); Ishfaq Hussain (Nanjing University of Aeronautics and Astronautics);*
- 10:40 TEM Antenna's Arrays and High Power Radiators of UWB Electromagnetic Sub-nanosecond Impulses  
*Vladimir M. Fedorov (Institute for High Energy Densities of JIHT of RAS); Vasily Ye. Ostashev (Joint Institute for High Temperatures of RAS); Alexander V. Ul'yanov (Joint Institute for High Temperatures of Russian Academy of Sciences (JIHT of RAS));*
- 11:00 **Coffee Break**

**Session 4A9b****Wireless Power Transfer and Harvesting****Thursday AM, May 25, 2017****Room B3**

Chaired by Sang-Min Han

- 11:20 Coupling Analysis for a WPT System Including Dielectric/Magnetic Materials  
*Yangjun Zhang (Ryukoku University); Tatsuya Yoshikawa (Ryukoku University);*
- 11:40 Energy-Harvesting RF System Designs for IoT Sensor Network Applications  
*Sang-Min Han (Soonchunhyang University); Seok-Jae Lee (Soonchunhyang University); Jongsik Lim (Soonchunhyang University); Dal Ahn (Soonchunhyang University); Won-Sang Yoon (Hoseo University);*

- 12:00 Double-layer Variable Geometry Inductor for Energy Harvesting Applications  
*Nikola Djuric (University of Novi Sad); Gorana Mijatovic (University of Novi Sad); Danka Antic (University of Novi Sad); Jelena Bjelica (University of Novi Sad); Dragan Kljajic (University of Novi Sad); Karolina Kasas-Lazetic (University of Novi Sad);*
- 12:20 The Planar Inductor with Adjustable Surface for Energy Harvesting Applications  
*Jelena Bjelica (University of Novi Sad); Nikola Djuric (University of Novi Sad); Alessandro Fanti (University of Cagliari); Snezana M. Djuric (University of Novi Sad);*

**Session 4A\_10****MS-1: Mini-symposium on Nanophotonics and Metamaterials 5****Thursday AM, May 25, 2017****Room R11**

Organized by Pavel A. Belov, Andrey A. Bogdanov

Chaired by Polina V. Kapitanova, Stanislav B.

Glybovski

- 09:10 Thin Metasurfaces for Magnetic Resonance Imaging  
Keynote Incorporating High Permittivity Materials  
*Andrew Webb (Leiden University Medical Center); Rita Schmidt (Leiden University Medical Center); Alexey Slobozhanyuk (ITMO University); Pavel A. Belov (ITMO University);*
- 09:40 In Vivo Magnetic Resonance Imaging of Human Knee with Metasurface  
*Alena Shchelokova (ITMO University); Alexey Slobozhanyuk (ITMO University); Shimul Chandra Saha (MediWise — Medical Wireless Sensing Ltd); Ioannis Sotiriou (MediWise — Medical Wireless Sensing Ltd); Maria Koutsoupidou (MediWise — Medical Wireless Sensing Ltd); George Palikaras (MediWise — Medical Wireless Sensing Ltd); Efthymios Kallos (MediWise — Medical Wireless Sensing Ltd); Pavel A. Belov (ITMO University); Andrew Webb (Leiden University Medical Center);*

- 10:00 Tunable Hybrid Metasurfaces for Magnetic Resonance Imaging  
*Alena Shchelokova (ITMO University); Alexey Slobozhanyuk (ITMO University); Stanislav Glybovski (ITMO University); Irina Melchakova (ITMO University); Andrew Webb (Leiden University Medical Center); Yuri S. Kivshar (Australian National University); Pavel A. Belov (ITMO University);*
- 10:20 Hybridized Eigenmodes of Periodic Wire Arrays and Their Application in Radiofrequency Coils for Preclinical MRI  
*Anna A. Hurshkainen (ITMO University); A. Nikulin (ITMO University); Stanislav Glybovski (ITMO University); Irina Melchakova (ITMO University); Pavel A. Belov (ITMO University); B. Larrat (ITMO University); E. Georget (CEA-NeuroSpin); Stefan Enoch (Institut Fresnel); Ana Luisa Antunes Neves (Aix-Marseille Université, Ecole Centrale Marseille, Campus de Saint-Jérôme); Pierre Sabouroux (Aix-Marseille Université); Redha Abdeddaim (ESPCI Paris Tech.);*
- 10:40 Metasurface Decoupling Structure for MRI Applications Based on Split-loop Resonators  
*Anna A. Hurshkainen (ITMO University); S. Kurdjumov (ITMO University); Stanislav Glybovski (ITMO University); Irina Melchakova (ITMO University); Pavel A. Belov (ITMO University); Constantin R. Simovski (Aalto University); Cornelis A. T. van den Berg (University Medical Center Utrecht); A. Raaijmakers (UMC Utrecht);*
- 11:00 **Coffee Break**
- 11:20 Decomposing Meta-molecules into Fundamental  
 Invited Meta-atoms: Materiatronics Concept  
*Sergei A. Tretyakov (Aalto University);*
- 11:40 Polarisation Dependent Purcell Factor in a Fishnet  
 Invited Metamaterial: Modelling and Measurement in the Microwave Range  
*Kaizad Rustomji (Institut Fresnel); Redha Abdeddaim (ESPCI Paris Tech.); C. Martijn de Sterke (University of Sydney); Boris T. Kuhlmeij (University of Sydney); Stefan Enoch (Institut Fresnel);*
- 12:00 Gapless States in Microwave Artificial Graphene  
*Yulia N. Dautova (University of Exeter); Andrey V. Shytov (University of Exeter); Ian R. Hooper (University of Exeter); J. Roy Sambles (University of Exeter); Alastair P. Hibbins (University of Exeter);*

- 12:20 Magneto-optical Effects in Subwavelength Nanoparticles Enhanced by Optically-induced Magnetic Resonances  
*Maria G. Barsukova (Lomonosov Moscow State University); Alexander S. Shorokhov (Lomonosov Moscow State University); Alexander I. Musorin (Lomonosov Moscow State University); Maxim R. Shcherbakov (Lomonosov Moscow State University); Dragomir N. Neshev (Australian National University); Andrey A. Fedyanin (Lomonosov Moscow State University); Yuri S. Kivshar (Australian National University);*

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**Session 4A\_11**  
**Optics and Photonics 2**

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**Thursday AM, May 25, 2017**

**Room R10**

Chaired by Tetsuya Kawanishi, Sergei D. Baranovskii

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- 09:00 Theory to Optical Properties of Compound Semiconductors for Laser Applications  
*Kakhaber Jandieri (Philipps-University); Martin Wiemer (Philipps-University); Sergei D. Baranovskii (Philipps University Marburg);*
- 09:20 From TV White Space/Spectrum Sharing Trials and Geolocation Spectrum Database towards 5G  
*Albert A. Lysko (CSIR Meraka Institute); David L. Johnson (CSIR Meraka Institute);*
- 09:40 Instantaneous Frequency Measurement by the Use of Optical Single-sideband Modulation  
*Tetsuya Kawanishi (National Institute of Information and Communications Technology); Hideki Hayashi (Waseda University); Atsushi Kanno (National Institute of Information and Communications Technology); Keizo Inagaki (National Institute of Information and Communications Technology); Naokatsu Yamamoto (National Institute of Information and Communications Technology);*
- 10:00 Holographic Wavefront Sensors — A New Generation of Wavefront Sensors  
*Vladimir Yu. Venediktov (St.-Petersburg Electrotechnical University and St.-Petersburg State University); Sergey B. Odinokov (Moscow Bauman State Technical University);*
- 10:20 Amplitude Noise Transfer due to Four-wave Mixing  
*Aravind Padath Anthur (Dublin City University); Sean P. O. Duill (Dublin City University); Liam P. Barry (Dublin City University);*

- 10:40 Readout Circuit Design for Noise-based Photodetection  
*Fernando Massa Fernandes (Universidade do Estado do Rio de Janeiro); Germano Maioli Penello (Universidade do Estado do Rio de Janeiro); Patricia Lustoza Souza (Pontificia Universidade Catolica);*
- 11:00 **Coffee Break**
- 11:20 Investigation of Nanoantenna Geometries for Maximum Field Enhancements at Optical Frequencies  
*E. Ustun (Middle East Technical University); O. Eroglu (Middle East Technical University); U. M. Gur (Middle East Technical University); Ozgur Ergul (Middle East Technical University);*
- 11:40 Measurement of Microwave Electromagnetic Field Characteristics inside the Reverberation Chamber Based on Carbon Fiber Reinforced Plastic Structure  
*Shunichi Futatsumori (Electronic Navigation Research Institute);*
- 12:20 III-V Heterostructure Based Three Terminal Thermal Rectifier  
*Ankur Garg (PEC University of Technology); Krishna Prakash (PEC University of Technology); Neelu Jain (PEC University of Technology); Neena Gupta (PEC University of Technology); Sanjeev Kumar (PEC University of Technology); Arun Kumar Singh (PEC University of Technology);*

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#### Session 4A\_12

#### Optical Spectroscopy of Two-dimensional Materials

Thursday AM, May 25, 2017

Room R9

Organized by Hui Zhao, Yongsheng Wang

Chaired by Yongsheng Wang, Hui Zhao

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- 09:00 Coulomb Engineering of Electronic Bandgaps in 2D  
 Invited Materials  
*Alexey Chernikov (University of Regensburg);*
- 09:20 Ultrafast Magneto-optical Studies of Anisotropic Response of Black Phosphorus  
 Invited  
*Dong Sun (Peking University);*
- 09:40 Study on Carrier Dynamics of Two Dimensional Semiconductor Materials  
 Invited  
*Jiaqi He (Beijing Jiaotong University); Dawei He (Beijing Jiaotong University); Yongsheng Wang (Beijing Jiaotong University); Zhiyi He (Gulin University of Electronic Technology);*

- 10:00 Laser-induced Electron Coherence in 2D Quantum  
 Invited Materials  
*Jimin Zhao (Institute of Physics, Chinese Academy of Sciences);*
- 10:20 Wavelength-dependent Linear Birefringence of a New Carbon Allotrope Intercalated with Bimetallic Au-Ag Nanoparticles  
*A. A. Manshina (St. Petersburg State University); M. Neugebauer (Max Planck Institute for the Science of Light); T. Bauer (Max Planck Institute for the Science of Light); Peter Banzer (Max Planck Institute for the Science of Light); G. Leuchs (Max Planck Institute for the Science of Light);*
- 10:40 In-situ Optical Characterisation of the Spatial Dynamics of Liquid Crystalline Nanocomposites  
*Ben Hogan (University of Exeter); Sergey Dyakov (Skolkovo Institute of Science and Technology, Photonics and Quantum Material Center); Samuel Rault (University of Exeter); Jenny O'Dowd (University of Exeter); Yuri Gun'ko (The University of Dublin); Tatiana S. Perova (The University of Dublin & ITMO University); Monica Craciun (University of Exeter); Anna Baldycheva (University of Exeter);*

11:00 **Coffee Break**

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#### Session 4A\_13

#### Earth Electromagnetic Environment and Radiowaves Propagation & Scattering: Modeling, Measurements and Observations Including NanoSats and CubeSats Emerging Approach

Thursday AM, May 25, 2017

Room R8

Organized by Rachid Talhi

Chaired by Rachid Talhi, Fabrizio Cuccoli

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- 09:00 Co-rotating Leo Satellites for Estimating the 2D Tropospheric Water Vapor  
*Fabrizio Cuccoli (Universita di Firenze); Luca Facheris (Universita di Firenze); Fabrizio Argenti (Universita di Firenze); A. Lapini (Universita di Firenze);*

- 09:20 Phase Synchronism of Microwaves in Space Plasma: Nonlinear Resonant Broadband Wideangle Generation of Second Harmonics  
*Alexander Borisovich Shvartsburg (Joint Institute for High Temperatures, Russian Academy of Sciences); Nikolay Sergeevich Erokhin (Space Research Institute of RAS); S. A. Pulnits (Space Researches Institute, Russian Academy of Sciences);*
- 09:40 Simultaneous Observation of UHF and VHF Radio Signal Ionospheric Scintillations in the Magnetic Zenith  
*Maria V. Globa (Institute of Solar-Terrestrial Physics, Siberian Branch of Russian Academy of Science); Roman V. Vasilyev (Institute of Solar-Terrestrial Physics, Siberian Branch of Russian Academy of Science); Yury Vladimirovich Yasyukevich (Institute of Solar-Terrestrial Physics (ISTP), Siberian Branch of Russian Academy of Sciences);*
- 10:00 On the Applicability of Physical Optics in the mm-wave Region of the Electromagnetic Spectrum  
*Anthony J. Baran (Met Office); Evelyn Hesse (University of Hertfordshire); Odran Sourdeval (Universitat Leipzig);*
- 11:00 **Coffee Break**
- 12:00 Evolution of Some E.M Wave Characteristics through Earth's Ionospheric Environment: Focus on Scattered Wave — Energy Distribution  
*Rachid Talhi (University of Tours);*

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#### Session 4P1a

#### Application of EM Field in Medical Diagnostics and Therapy 2

Thursday PM, May 25, 2017

Room G5

Organized by Jan Vrba

Chaired by Jan Vrba

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- 14:20 Microwave Differential Tomography for Medical Imaging  
*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); Jesus Cumana (Institute of Microbiology, Czech Academy of Sciences); Jan Vrba (Czech Technical University in Prague);*

- 15:00 A 3D Unidirectional Antenna for Microwave Application  
*Md. Amanath Ullah (Universiti Kebangsaan Malaysia); Touhidul Alam (Universiti Kebangsaan Malaysia); Sabirin Abdullah (Universiti Kebangsaan Malaysia); Mohd Fais Mansor (Universiti Kebangsaan Malaysia); Norbahiah Binti Misran (Universiti Kebangsaan Malaysia); Mohammad Tariqul Islam (Universiti Kebangsaan Malaysia);*

16:00 **Coffee Break**

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#### Session 4P1b

#### Medical Electromagnetics, Biological Effects, Bioimaging 2

Thursday PM, May 25, 2017

Room G5

Chaired by Jan Vrba

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- 16:20 Method for Rapid, Automated Detection of Pathogenic Bacteria Using a Wireless Biosensor  
*Shin Horikawa (Auburn University); Aleksandr L. Simonian (National Science Foundation); Bryan A. Chin (Auburn University);*
- 16:40 Principle Component Analysis and Linear Discriminant Analysis of Multispectral Fluorescence Imaging Data for Early Non-invasive Diagnosis of Skin Cancer  
*Anastasiya D. Lesnichaya (Bauman Moscow State Technical University); Nikita V. Chernomyrdin (Bauman Moscow State Technical University); Konstantin G. Kudrin (Institute of Improvement of Professional Skill of the Federal Medico-Biological Agency of Russia); Elena N. Rimskaya (I. M. Sechenov First Moscow State Medical University); O. P. Cherkasova (Institute of Laser Physics of SB RAS); Irina A. Shikunova (Institute of Solid State Physics of Russian Academy of Sciences); Vladimir N. Kurllov (Institute of Solid State Physics of Russian Academy of Sciences); Kirill I. Zaytsev (Bauman Moscow State Technical University); Igor V. Reshetov (I. M. Sechenov First Moscow State Medical University);*

- 17:00 Combining Optical Instruments of Screening and Refining Diagnosis for Non-invasive Early Diagnosis of Skin Malignances  
*Kirill I. Zaytsev (Bauman Moscow State Technical University); Konstantin G. Kudrin (Institute of Improvement of Professional Skill of the Federal Medico-Biological Agency of Russia); Nikita V. Chernomyrdin (Bauman Moscow State Technical University); Elena N. Rimskaya (I. M. Sechenov First Moscow State Medical University); Vladimir N. Kurlov (Institute of Solid State Physics of Russian Academy of Sciences); Igor V. Reshetov (I. M. Sechenov First Moscow State Medical University);*

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**Session 4P2**  
**MIMO Systems and Techniques**

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**Thursday PM, May 25, 2017**

**Room G6**

Organized by Mario Marques da Silva

Chaired by Mario Marques da Silva

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- 14:00 A Comparison of Massive MIMO Using Pre and Post-processing  
*Mario Marques da Silva (Universidade Autonoma de Lisboa); Rui Dinis (Universidade Nova de Lisboa); Paulo Montezuma Carvalho (Universidade Nova de Lisboa);*
- 14:20 An Iterative Decision Directed Channel Estimation for Multi-user MIMO Systems  
*Guilherme Gaspar (Universidade Nova de Lisboa); Afonso Ferreira (Universidade Nova de Lisboa); Paulo Montezuma Carvalho (Universidade Nova de Lisboa); Mario Marques da Silva (Universidade Autonoma de Lisboa); Rui Dinis (Universidade Nova de Lisboa);*
- 14:40 MIMO Antenna Design for WLAN Indoor Wi-Fi Application with Improved Isolation  
*Cafer Uyanik (Istanbul Technical University); Mehmet Ali Yesil (AirTies Wireless Networks); Emre Aydin (AirTies Wireless Networks); Mehmet Nuri Akinci (Istanbul Technical University); Ibrahim Akduman (Istanbul Technical University);*
- 15:20 A Single Cylindrical Dielectric Resonator Based MIMO Antenna System for WiMAX Applications  
*Gourab Das (Indian School of Mines); Anand Sharma (Indian School of Mines); Ravi Kumar Gangwar (Indian School of Mines);*

- 15:40 Performance Enhancement of SIC-MMSE Based MIMO Detection Method  
*Saleem Ahmed (Dawood University of Engineering and Technology); Abdul Waheed Umrani (Mehran University of Engineering and Technology); Dost Muhammad Saqib Bhatti (Dawood University of Engineering and Technology);*

16:00 **Coffee Break**

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**Session 4P3a**  
**Scattering, Rough Surface Scattering**

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**Thursday PM, May 25, 2017**

**Room G7**

Chaired by Yisok Oh

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- 14:00 Scattering of Femtosecond Electromagnetic Pulses by Spherical Nanoparticles  
*V. A. Astapenko (Moscow Institute of Physics and Technology); Egor Sergeevich Khramov (Moscow Institute of Physics and Technology);*
- 14:20 Electromagnetic Wave Scattering from Statistically Distributed System of Reflectors over Smooth Sea Surface  
*Alexander Y. Andreev (Krylov State Research Centre); Victor V. Zalipaeu (Krylov State Research Centre);*
- 14:40 Estimation of the Radar Backscatter from a Very Rough Soil Surface with an Exponential-type Correlation Function  
*Yisok Oh (Hongik University);*
- 15:00 Application of Maehly Approximation to EM Scattering from a Dielectric Rough Surface and a Dielectric Object over a Frequency Band  
*Ran Bao (Anhui University); An-Qi Wang (Xidian University); Zhi-Xiang Huang (Anhui University);*
- 15:20 Account of Topography in SAR Images Simulation of Forest Scattering  
*Jean-Pascal Monvoisin (Universite Federale de Toulouse-ONERA Toulouse); Pierre Borderies (Office National d'Etudes et de Recherches Aerospatiales (ONERA)); Pascale Dubois-Fernandez (ONERA); D. Dubucq (TOTAL); C. Taillandier (TOTAL);*
- 15:40 Radioholography Based Method for Parabolic Reflector Surface Quality Control  
*Maxim Golubtsov (Bauman Moscow State Technical University); Eduard Mozharov (Bauman Moscow State Technical University); Vladimir Mitrokhin (Bauman Moscow State Technical University); Genady Slukin (Bauman Moscow State Technical University);*



16:00 **Coffee Break**

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**Session 4P3b**

**Georadar: Theory, Numerics and Application**

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**Thursday PM, May 25, 2017**

**Room G7**

Organized by Sergey Kabanikhin, Maxim A. Shishlenin

Chaired by Maxim A. Shishlenin

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- 16:20 Globally Convergent Numerical Methods for Coefficient Inverse Problems  
*Michael V. Klibanov (University of North Carolina at Charlotte);*
- 16:40 Radar with a Local Positioning Video-system  
*Dmitry Ya. Sukhanov (Tomsk State University); O. G. Ponomarev (Tomsk State University); K. V. Zavyalova (Tomsk State University); V. L. Khmelev (Tomsk State University); S. N. Roslyakov (Tomsk State University);*
- 17:00 The Dynamic and Kinematic Analysis of GPR Data  
*Maxim Shishlenin (Sobolev Institute of Mathematics);*
- 17:20 About the Results of the Processing Route Radargram Haar Wavelets and Daubechies  
*Nurgul Uzakkyzy (L.N. Gumilyov Eurasian National University); Kazizat T. Iskakov (L.N. Gumilyov Eurasian National University); Samat Akshabae-vich Boranbayev (L.N. Gumilyov Eurasian National University);*
- 17:40 Linear GPR Data Processing  
*S. I. Kabanikhin (Sobolev Institute of Mathematics); Maxim Shishlenin (Sobolev Institute of Mathematics);*
- 18:00 Combined Inverse Problems for GPR  
*Sergey I. Kabanikhin (Sobolev Institute of Mathematics); Maxim A. Shishlenin (Sobolev Institute of Mathematics);*

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**Session 4P4**

**Computational Electromagnetics 3**

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**Thursday PM, May 25, 2017**

**Room G8**

Organized by Alexander B. Samokhin

Chaired by Alexander B. Samokhin

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- 14:20 Physical Technique to Provide Accuracy of the Construction Element Backscattering Diagram Calculation  
*Andrey M. Lebedev (Institute for Theoretical and Applied Electromagnetics, Russian Academy of Sciences); T. A. Furmanova (Institute for Theoretical and Applied Electromagnetics, Russian Academy of Sciences);*
- 14:40 Characteristic Modes of Electrically Small Antennas in the Presence of Electrically Large Platforms  
*Michal Masek (Czech Technical University in Prague); Miloslav Capek (Czech Technical University in Prague); Pavel Hazdra (Czech Technical University in Prague); Qi I. Dai (University of Illinois at Urbana-Champaign); Weng Cho Chew (University of Illinois);*
- 15:00 A Hybrid Structured-unstructured Meshing Approach for Time Domain EM Analysis of Curved Geometries  
*Sripada Aditya Sivaram (Indian Institute of Science); K. J. Vinoy (Indian Institute of Science);*
- 15:20 Explicit Consideration of Body Shape in the Modeling of Electromagnetic Scattering  
*Mathias Perrin (Laboratoire Ondes et Matière d'Aquitaine); Frederic Gruy (Ecole Nationale Supérieure des Mines);*
- 15:40 Analytical Treatment of the Interaction between Light and Plasmons: The Corrected Quasi-normal Mode Expansion  
*Mathias Perrin (Laboratoire Ondes et Matière d'Aquitaine);*
- 16:00 **Coffee Break**
- 16:20 Electromagnetic Guided Waves on Infinite and Finite Periodic Linear Arrays of Thin Metallic Wires  
*Victor V. Zalipaev (Krylov State Research Centre); V. Vialov (Krylov State Research Centre); Stanislav B. Glybovski (ITMO University);*
- 16:40 Calculation of the Radar Station Field in 3D Space in the Presence of Forest and Other Obstacles by the Method of Parabolic Equation  
*Valery A. Permyakov (Moscow Power Engineering Institute (Technical University)); Mikhail Sergeevich Mikhailov (National Research University "Moscow Power Engineering Institute"); E. S. Malevich (National Research University "Moscow Power Engineering Institute");*

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**Session 4P5**  
**Metamaterials and Plasmonics**

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**Thursday PM, May 25, 2017**

**Room G9**

Chaired by Frantisek Uhrek

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- 14:20 Design and Simulations of Plasmonic Planar Fiber to Chip Coupler Works at the Optical Communication Wavelength  
*Anton Kuzma (Slovak University of Technology in Bratislava); Frantisek Uhrek (Slovak University of Technology in Bratislava); Jozef Chovan (International Laser Centre); Martin Donoval (Slovak University of Technology in Bratislava);*
- 14:40 About Two Approaches to Automation of a Process of Calculating Metamaterial Parameters According to the Scattering-parameter Extraction Method Using Modern Full-wave Simulators  
*Andrey N. Plastikov (National Research University "Moscow Power Engineering Institute");*
- 15:00 Applications of fs Laser Radiation for Formation of Thermochemical LIPSS on Cr Films and Fabrication of Submicron Amplitude Gratings  
*Alexandr V. Dostovalov (Novosibirsk National Research State University); V. P. Korolkov (Institute of Automation and Electrometry, Siberian Branch, Russian Academy of Sciences); V. S. Terentyev (Institute of Automation and Electrometry, SB, RAS); S. A. Babin (Institute of Automation and Electrometry, SB, RAS);*
- 15:20 Artificial Anisotropic Dielectric Material for Antenna Polarization Rotation  
*Markus Berg (Centre for Wireless Communications — Radio Technology Research Unit); Tommi Tuovinen (Centre for Wireless Communications — Radio Technology Research Unit); Erkki T. Salonen (University of Oulu);*
- 15:40 Coherent Perfect Absorption in a Coupled Electric-magnetic-resonator System  
*Lei Zhu (Harbin Institute of Technology); Liang Dong (Qiqihar University); Jing Guo (Qiqihar University); Fan-Yi Meng (Harbin Institute of Technology); Qun Wu (Harbin Institute of Technology);*
- 16:00 **Coffee Break**
- 16:20 Stable and Tunable Plasma Photonic Crystals Produced by Dielectric Barrier Discharge  
*Wei-li Fan (Hebei University); Lifang Dong (Hebei University);*

- 16:40 Soliton Generation and Stability in the Discrete Left-handed Electrical Network  
*Georges Bickele Ambassa (University of Yaounde I); Frederic Biya Motto (University of Yaounde I); Bernard Zobo Essimbi (University of Yaounde I); Timoleon Crepin Kofane (University of Yaounde I);*
- 17:00 Understanding the Propagation of Surface Plasmon-polaritons on Metallic Films  
*Parva Chhantyal (Laser Zentrum Hannover e.V.); Tobias Birr (Laser Zentrum Hannover e.V.); Dominik Hinrichs (Leibniz University Hannover); Urs Zywiets (Laser Zentrum Hannover e.V.); Laszlo Sajti (Laser Zentrum Hannover e.V.); Dirk Dorfs (Leibniz University Hannover); Boris N. Chichkov (Laser Zentrum Hannover e.V.); Carsten Reinhardt (Laser Zentrum Hannover e.V.);*

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**Session 4P6**  
**Microwave Remote Sensing and Polarimetry, SAR 2**

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**Thursday PM, May 25, 2017**

**Room G10**

Chaired by Yunhua Zhang, Alexandr Sergeevich Yashchenko

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- 14:20 The Problem the Frozen Soil Mapping of the Steppe Zone  
*Alexandr Sergeevich Yashchenko (Omsk State Pedagogical University);*
- 14:40 Effect of Porosity, Pore Size and Permeability on the Complex Relative Permittivity of Sandstone  
*Andrey V. Repin (Omsk State Pedagogical University); O. V. Rodionova (Omsk State Pedagogical University); M. Y. Shumskayte (Trofimuk Institute of Petroleum Geology and Geophysics SB RAS);*
- 15:00 Efficiency Analysis of Feature Extraction Methods for Pulse Laser Ranging Systems  
*Fedor Borisovich Baulin (Bauman Moscow State Technical University); Evgeny Vladlenovich Buryi (Bauman Moscow State Technical University); Dmitriy Alekseevich Semerenko (Bauman Moscow State Technical University);*
- 15:20 South African Passive Radar and towards Its Characterisation  
*Albert A. Lysko (CSIR Meraka Institute); Francois D. V. Maasdorp (CSIR Meraka Institute);*

- 15:40 Design and Algorithms of the Tiangong-2 Interferometric Imaging Radar Altimeter Processor  
*Xiao Dong (Center for Space Science and Applied Research, Chinese Academy of Sciences); Yunhua Zhang (National Space Science Center, Chinese Academy of Sciences); Wenshuai Zhai (Center for Space Science and Applied Research, Chinese Academy of Sciences);*
- 16:00 **Coffee Break**
- 16:20 Primary Results of Ocean Parameters Retrieval from the Interferometric Imaging Radar Altimeter On-board Chinese Space Laboratory TG-2  
*Lin Ren (State Oceanic Administration); Jingsong Yang (Second Institute of Oceanography, State Oceanic Administration); Yunhua Zhang (National Space Science Center, Chinese Academy of Sciences); Wenshuai Zhai (Center for Space Science and Applied Research, Chinese Academy of Sciences); Xiao Dong (Center for Space Science and Applied Research, Chinese Academy of Sciences); Gang Zheng (Second Institute of Oceanography, State Oceanic Administration); Juan Wang (State Oceanic Administration);*
- 16:40 Tiangong-2 Interferometric Imaging Radar Altimeter — Its Mission and The First Results  
*Yunhua Zhang (National Space Science Center, Chinese Academy of Sciences); Xiaojin Shi (Center for Space Science and Applied Research, CAS); Hongjian Wang (National Space Science Center, Chinese Academy of Sciences); Yueying Tang (Center for Space Science and Applied Research, CAS); Wenshuai Zhai (Center for Space Science and Applied Research, Chinese Academy of Sciences); Xiao Dong (Center for Space Science and Applied Research, Chinese Academy of Sciences); Xueyan Kang (Center for Space Science and Applied Research, CAS); Qingshan Yang (Center for Space Science and Applied Research, Chinese Academy of Sciences); Dong Li (National Space Science Center, Chinese Academy of Sciences); Jingshan Jiang (Center for Space Science and Applied Research, Chinese Academy of Sciences);*
- 17:00 Application for Determining the Modulation Transfer Function of the Smartphone Built-in Camera  
*Oleg. A. Perezyabov (ITMO University); Aleksandr N. Baranov (ITMO University); Nadezhda K. Maltseva (ITMO University); Aleksandr V. Ilinski (S. I. Vavilov State Optical Institute);*

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**Session 4P7**  
**Microwave and Millimeter Wave Circuits and Devices, CAD 2**

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**Thursday PM, May 25, 2017**

**Room B1**

Chaired by Mikhail B. Manuilov

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- 14:00 A Fully Integrated Variable Gain Amplifier for X-band Application  
*Jageon Koo (Chonbuk National University); Junhyung Jeong (Chonbuk National University); Yongchae Jeong (Chonbuk National University);*
- 14:20 X-band GaN Power Amplifier Using Interposer-based MMIC  
*Junhyung Jeong (Chonbuk National University); Jageon Koo (Chonbuk National University); Yongchae Jeong (Chonbuk National University);*
- 14:40 Accurate Design of a W-band Full Band Frequency Tripler Based on Anti-parallel GaAs Schottky Varistor Diode Pair  
*Jiangling Dou (Southeast University); Jinping Xu (Southeast University); Shu Jiang (Southeast University);*
- 15:00 Design of a Compact Fractional-N PLL-based Frequency Synthesizer for Dual-band DBS Applications  
*Zhiqiang Liu (Southeast University); Jinping Xu (Southeast University); Gang Liu (Southeast University); Yunlong Pan (Southeast University);*
- 15:20 Power Limiter Based on Reflected Phase Shifter with Ferroelectric Varactor  
*Olesya T. Drak (Saint Petersburg State Electrotechnical University "LETI"); Alexey N. Vasiliev (Planeta-IRMIS, LLC); Anton I. Zadorozhny (Saint Petersburg State Electrotechnical University); Andrey V. Tumarkin (St. Petersburg Electrotechnical University (LETI)); Victor D. Draznin (Scientific Research Institute "Giricond");*
- 15:40 Analog Varactor Phase Shifter  
*Artem Vilenskiy (Samsung Research Institute Russia); Mikhail Makurin (Samsung Moscow Research Center);*
- 16:00 **Coffee Break**
- 16:20 Design of a Wideband CMOS Variable-gain Low Noise Amplifier  
*Chen Fan (Southeast University); Zhigong Wang (Southeast University); Rong Wang (Southeast University);*
- 16:40 Design of a High Speed SP4T Switch at Ka-band  
*Le Ren (Southeast University); Jian Zhang (Southeast University); Jinping Xu (Southeast University);*

- 17:00 Design of LLC Converter Using Method Figure of Merit for Perspective Semiconductors and Magnetic Components  
*Boris Kozacek (University of Zilina); Michal Frivaldsky (University of Zilina); Viliam Jaros (University of Zilina);*
- 17:20 Design Approach for Microstrip PIN-diode Phase Shifters with Equalized Losses  
*Roman Semernya (Bauman Moscow State Technical University); Artem Vilenskiy (Bauman Moscow State Technical University); Vladimir Litun (Bauman Moscow State Technical University); Sergey Chernyshev (Bauman Moscow State Technical University);*

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### Session 4P8

#### MS-1: Mini-symposium on Nanophotonics and Metamaterials 6

Thursday PM, May 25, 2017

#### Room B5

Organized by Pavel A. Belov, Andrey A. Bogdanov

Chaired by Sergey Makarov, Dmitry A. Zuev

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- 14:00 Copper Plasmonics Explored for Nano-optics Applications  
Invited *Valentyn S. Volkov (University of Southern Denmark); Dmitry Yakubovsky (Mocsov Institute of Physics and Technology); Roman Kirtaev (Mocsov Institute of Physics and Technology); Dmitry Fedyanin (Moscow Institute of Physics and Technology (State University));*
- 14:20 Strong Plasmon-exciton Coupling Using Individual Plasmonic Nanoantennas  
*M. Wersall (Chalmers University of Technology); J. Cuadra (Chalmers University of Technology); Tomasz J. Antosiewicz (Chalmers University of Technology); Timur Shegai (Chalmers University of Technology);*
- 14:40 Temporal Dynamics of a Single Excitation in a 1D Array of Chirally Coupled Two-level Systems  
*Danil F. Kornovan (ITMO University); Mikhail I. Petrov (ITMO University); Ivan V. Iorsh (National Research University for Information Technology, Mechanics and Optics);*
- 15:00 Time-domain Multiphysics of Loss-compensated Surface Plasmons  
*Shaimaa Azzam (Purdue University); Nikita Arnold (Johannes Kepler University Linz); Ludmila J. Prokopeva (Purdue University); Zhaxylyk Kudyshev (Purdue University); Alexander V. Kildishev (Purdue University);*

- 15:20 Resonant Properties of THz Metamaterials and Systems Based on Metal-semiconductor Microhelices  
*Elena V. Naumova (Institute of Semiconductor Physics, SB RAS); Victor Yakovlevich Prinz (Institute of Semiconductor Physics, SB RAS); Sergey V. Golod (Institute of Semiconductor Physics, SB RAS); Vladimir A. Seleznev (Institute of Semiconductor Physics, SB RAS); Vitaliy V. Kubarev (Budker Institute of Nuclear Physics, Russian Academy of Science, Siberian Branch);*

- 15:40 Chiral Photonic Crystals and Metasurfaces for Compact Sources of Circularly Polarized Light  
Invited *Sergei G. Tikhodeev (Lomonosov Moscow State University);*

#### 16:00 Coffee Break

- 16:20 Plasmonic Nanoantenna for Enhancement of Vertical Emission from Whispering Gallery Mode Laser  
*Andrey A. Bogdanov (ITMO University); E. I. Moiseev (St Petersburg Academic University); N. V. Kryzhanovskaya (St Petersburg Academic University); Yu. S. Polubavkina (St Petersburg Academic University); M. V. Maximov (St Petersburg Academic University); M. M. Kulagina (Ioffe Institute); Yu. M. Zadiranov (Ioffe Institute); A. A. Lipovskii (St Petersburg Academic University); I. S. Mukhin (ITMO University); A. M. Mozharov (St Petersburg Academic University); F. E. Komissarenko (ITMO University); Zarina Failevna Sadrieva (ITMO University); A. E. Krasnok (ITMO University); A. V. Lavrinenko (ITMO University); A. E. Zhukov (St Petersburg Academic University);*

- 16:40 Directional and Polarized Light Emission at the Nanoscale through Semiconductor Nanowires  
*Diego Romero Abujetas (Consejo Superior de Investigaciones Cientificas (CSIC)); D. Van Dam (Dutch Institute for Fundamental Energy Research, DIFFER); J. Gomez-Rivas (Dutch Institute for Fundamental Energy Research, DIFFER); Jose A. Sanchez-Gil (CSIC);*

- 17:00 New Approaches to Electrically Driven Nanoantennas  
Invited *Alexander V. Uskov (Lebedev Physical Institute); Jacob B. Khurgin (Johns Hopkins University); Igor V. Smetanin (Lebedev Physical Institute); Igor E. Protsenko (Lebedev Physical Institute); Ivan S. Mukhin (National Research University for Information Technology, Mechanics and Optics); A. O. Goludok (ITMO University); M. Buret (Universite Bourgogne Franche-Comte); Alexandre Bouhelier (Universite Bourgogne Franche-Comte);*

- 17:20 Ultrafast Tunable Hybrid Yagi-Uda Nanoantenna  
*Roman S. Savelev (ITMO University); Olga N. Sergaeva (ITMO University); Denis G. Baranov (Chalmers University of Technology); Alexandr E. Krasnok (National Research University of Information Technologies, Mechanics and Optics (ITMO)); Andrea Alu (The University of Texas at Austin);*
- 17:40 Near-field Spectral Properties of Coupled Plasmonic Systems  
*Kosei Ueno (Hokkaido University); Quan Sun (Hokkaido University); Hiroaki Misawa (Hokkaido University);*
- 18:00 Absence of Rabi Oscillations in Two-level System with Permanent Dipole Moment: The Quantum Approach  
*Mihail I. Petrov (ITMO University); D. G. Baranov (Moscow Institute of Physics and Technology); A. E. Krasnok (ITMO University);*
- 15:00 Design Regular Fractal Slot-antennas for Ultra-wideband Applications  
*Majed O. Dwairi (Al-Balqa' Applied University); Mohamed S. Soliman (Taif University); Ahmad A. Alahmadi (Taif University); Iman I. M. Abu Sulayman (Taif University); Sami H. A. Almalki (Taif University);*
- 15:20 Compact and High-gain Quasi-Yagi Antennas with Multi-element Folded Dipole Feed  
*Mohamad Farran (Universita degli Studi di Brescia); Mohammed Al-Husseini (American University of Beirut); Karim Y. Kabalan (American University of Beirut);*
- 15:40 A Leaky Coaxial Cable Antenna Based on Sinusoidally-modulated Reactance Surface  
*Zeeshan Siddiqui (University of Oulu); Ahmed Radwan (University of Oulu); Marko Sonkki (University of Oulu); Marko Tuhkala (University of Oulu); Sami Myllymaki (University of Oulu);*

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**Session 4P9**

**Antenna Theory, Microstrip and Printed Antenna**

**Thursday PM, May 25, 2017**

**Room B3**

Chaired by Fitri Yuli Zulkifli, Mohammed Al-Husseini

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- 14:00 Frequency-domain Synthesis of Tapered Slot Antennas  
*Artem Vilenskiy (Bauman Moscow State Technical University); Sergey Chernyshev (Bauman Moscow State Technical University); Gennady Shukin (Bauman Moscow State Technical University);*
- 14:20 Uniform Microstrip Array Antenna with Low Side-lobe Level for Coastal Surveillance Radar Application at 9.37–9.43 GHz  
*Damaraji Wijoyono (University of Indonesia, Kampus Baru UI Depok); Savira Ramadhanty (University of Indonesia, Kampus Baru UI Depok); Dewa Raktamatullah (University of Indonesia, Kampus Baru UI Depok); Fitri Yuli Zulkifli (University of Indonesia);*
- 14:40 Line-coupled Microstrip Slotted Patch Antenna with Modified Ground Structure for Next Generation of Wireless Communications  
*Arash Masrouri (Islamic Azad University); N. Amiri (Islamic Azad University); Manouchehr Kamyab (K. N. Toosi University of Technology);*
- 16:00 **Coffee Break**
- 16:20 A Novel Compact Triple-band Fractal Antenna  
*Hayder S. Ahmed (Home 8, Street 36, Site 409, Utaifiyya);*
- 16:40 Design of Compact Wearable Antennas by Using Printed Electronics  
*Simone Genovesi (University of Pisa); Filippo Costa (University of Pisa); Agostino Monorchio (University of Pisa);*
- 17:00 Spherical Lens-reflector for Aerospace Communication  
*V. P. Yakubov (National Research Tomsk State University); A. V. Kamenev (National Research Tomsk State University); S. V. Ponomarev (National Research Tomsk State University);*
- 17:20 Polarization Characteristics of the Paraboloidal Reflector Antenna  
*Francis Olutunji Okewole (University of Lagos); Sulaiman Adeniyi Adekola (University of Lagos); Alex Ike Mowete (University of Lagos);*
- 17:40 Geometrical Optics Synthesis of Dual-reflector Beam-waveguides with Pattern Symmetry and Zero Cross-polarization  
*Boris L. Kogan (JSC "Special Research Bureau of Moscow Power Engineering Institute (OKB MEI)"); Andrey N. Plastikov (National Research University "Moscow Power Engineering Institute"); Igor V. Belkovich (JSC "Special Research Bureau of Moscow Power Engineering Institute (OKB MEI)"); Vasilii N. Seleznev (JSC "Special Research Bureau of Moscow Power Engineering Institute (OKB MEI)");*

18:00 A 2.4GHz Co-design of Current Reuse RFPA and Compact Spiral Printed Antenna

*Ayman M. Ismaiel (Egypt-Japan University of Science and Technology); Mohamed Galal Wahab (Electronics and Communications Engineering, AAST); Ahmed Allam (Egypt-Japan University of Science and Technology); Adel B. Abdel-Rahman (South Valley University); Ramesh K. Pokharel (Kyushu University);*

|          | MONDAY AM<br>9:00 May 22                                                                                         |                                                          | MONDAY PM<br>14:00 May 22                                                                                        |                               | TUESDAY AM<br>9:00 May 23                                                                                |                                                                                                        | TUESDAY PM<br>14:00 May 23                                                                              |
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| ROOM G5  | 1A1 - Novel Optical Fibers and Fiber-based Devices                                                               |                                                          | 1P1 - Advanced Optofluidics: Optical Control and Photonics with Fluid Matter 1                                   |                               | 2A1 - Advanced Optofluidics: Optical Control and Photonics with Fluid Matter 2                           |                                                                                                        | 2P1 - Optical Manipulation by Nano-scale Objects                                                        |
| ROOM G6  | 1A2 - Electromagnetic Signal Processing, Wavelets, Neural Network                                                |                                                          | 1P2a - Extended/Unconventional Electromagnetic Theory, EHD/EMHD, and Electro-biology                             | 1P2b - Electromagnetic Theory | 2A2 - Fundamental Aspects in the Problems of the EM High-frequency Wave Propagation in the Ionosphere 1  |                                                                                                        | 2P2 - Fundamental Aspects in the Problems of the EM High-frequency Wave Propagation in the Ionosphere 2 |
| ROOM G7  | 1A3 - Nonlinear and Inverse Problems in Electromagnetics                                                         |                                                          | 1P3 - Electromagnetic Modeling and Inversion and Applications                                                    |                               | 2A3 - Inverse Design Methods in Detection and Cloaking Problems                                          |                                                                                                        | 2P3 - Radar Cross Section and Inverse Problems in Electromagnetics                                      |
| ROOM G8  | 1A4 - Computational Electromagnetics 1                                                                           |                                                          | 1P4 - Advanced Mathematical and Computational Methods in Electromagnetic Theory and Their Applications 1         |                               | 2A4 - Advanced Mathematical and Computational Methods in Electromagnetic Theory and Their Applications 2 |                                                                                                        | 2P4 - The Modern Hybrid Methods in the Problems of Computational Electromagnetics 1                     |
| ROOM G9  | 1A5a - Nanostructured Photoconversion Technologies and Devices                                                   | 1A5b - Lasers and Applications in Information Technology | 1P5 - Integrated Optical Devices for Low-power Information Processing                                            |                               | 2A5 - Education for Electromagnetics                                                                     |                                                                                                        | 2P5 - Advanced Photonic Technologies for Energy Harvesting                                              |
| ROOM G10 | 1A6 - Theory and Methods of Digital Signal Processing in the Problems of Remote Sensing, Radar, and Radiometry 1 |                                                          | 1P6 - Theory and Methods of Digital Signal Processing in the Problems of Remote Sensing, Radar, and Radiometry 2 |                               | 2A6 - Remote Sensing Techniques of Earth System Related Components 1                                     |                                                                                                        | 2P6 - Remote Sensing Techniques of Earth System Related Components 2                                    |
| ROOM B1  | 1A7a - CEM, Spectra, Time, and Frequency Domain Techniques                                                       | 1A7b - Computational Cubism                              | 1P7 - Method of Integral Equations in Computational Electromagnetics                                             |                               | 2A7 - High Frequency Methods                                                                             |                                                                                                        | 2P7 - Semiconductor Quantum Structures, Microcavities and Polariton Lasers                              |
| ROOM B5  | 1A8 - Casimir Effect and Heat Transfer 1                                                                         |                                                          | 1P8 - Casimir Effect and Heat Transfer 2                                                                         |                               | 2A8a - Mini-symposium on Nanophotonics and Metamaterials 2                                               | 2A8b - Oral Presentations for Best Student Paper Awards -- Metamaterials, Plasmonics and Complex Media | 2P8 - Photonic Topological Materials and Quantum Optics                                                 |

|          | MONDAY AM<br>9:00 May 22                                                            |                                                                    | MONDAY PM<br>14:00 May 22                                                           | TUESDAY AM<br>9:00 May 23                                                                         |                                                                                    | TUESDAY PM<br>14:00 May 23                                                         |                                                                                                |
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| ROOM B3  | 1A9 - New Trends in Antenna, Dynamic Networks and Communication Signal Processing 1 |                                                                    | 1P9 - New Trends in Antenna, Dynamic Networks and Communication Signal Processing 2 | 2A9 - Antennas and Front-end Systems for Radio Astronomy Instrumentation                          |                                                                                    | 2P9 - Novel Frequency Selective Structures and Antennas                            |                                                                                                |
| ROOM R11 | 1A10 - Metamaterials and Transformation Optics 1                                    |                                                                    | 1P10 - Mini-symposium on Nanophotonics and Metamaterials 1                          | 2A10 - Recent Advances of Metamaterials for Novel Electromagnetic and Photonic Devices            |                                                                                    | 2P10 - Metamaterials and Transformation Optics 2                                   |                                                                                                |
| ROOM R10 | 1A11 - New Principles and Applications of Photonic/Phononic Crystals 1              |                                                                    | 1P11 - New Principles and Applications of Photonic/Phononic Crystals 2              | 2A11 - Nanolasers: Physics, Technology, Applications 1                                            |                                                                                    | 2P11a - Ultrafast Nonlinear Optics: Nonlinear Sources and Materials 2              | 2P11b - Nanolasers: Physics, Technology, Applications 2                                        |
| ROOM R9  | 1A12a - Photonics and Optoelectronics with Two-dimensional Materials                | 1A12b - Biophotonics, Optical Sensors and Environmental Monitoring | 1P12 - Advanced Solutions in Ultra-high Capacity Optical Communication              | 2A12 - Integrated and Fiber-based Photonic Circuits and Devices 1                                 |                                                                                    | 2P12a - Optical Fiber Sensors                                                      | 2P12b - Integrated and Fiber-based Photonic Circuits and Devices 2                             |
| ROOM R8  |                                                                                     |                                                                    | 1P13 - High-frequency/Speed Circuits in Electromagnetics and Optics                 | 2A13a - Ultrafast Nonlinear Optics: Ultrafast Fiber Lasers and Nonlinear Applications             | 2A13b - Ultrafast Nonlinear Optics: Nonlinear Sources and Materials 1              | 2P13 - Microwave Filters and Resonators                                            |                                                                                                |
| ROOM B4  |                                                                                     |                                                                    |                                                                                     | 2A14a - Oral Presentations for Best Student Paper Awards - -- Antennas and Microwave Technologies | 2A14b - Oral Presentations for Best Student Paper Awards - -- Remote Sensing, etc. | 2P14a - Oral Presentations for Best Student Paper Awards - -- Optics and Photonics | 2P14b - Oral Presentations for Best Student Paper Awards - -- CEM, EMC, Scattering & EM Theory |
|          |                                                                                     |                                                                    |                                                                                     |                                                                                                   |                                                                                    |                                                                                    |                                                                                                |
|          |                                                                                     |                                                                    |                                                                                     |                                                                                                   |                                                                                    |                                                                                    |                                                                                                |
| ROOM B2  | 1A0 - Poster Session 1                                                              |                                                                    | 1P0 - Poster Session 2                                                              | 2A0 - Poster Session 3                                                                            |                                                                                    | 2P0 - Poster Session 4                                                             |                                                                                                |



|          | WEDNESDAY AM<br>9:00 May 24                                                            |                                                                                      | WEDNESDAY PM<br>14:00 May 24                                                           |                                                        | THURSDAY AM<br>9:00 May 25                                                                                                    | THURSDAY PM<br>14:00 May 25                                         |                                                                   |
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| ROOM G5  | 3A1a - Optical Materials: Fundamentals and Applications                                | 3A1b - Plasmas, Nonlinear Media, Fractal, Chiral Media                               | 3P1a - Optical Sensors for Industrial and Consumer Applications                        | 3P1b - Optics and Photonics 1                          | 4A1 - Application of EM Field in Medical Diagnostics and Therapy 1                                                            | 4P1a - Application of EM Field in Medical Diagnostics and Therapy 2 | 4P1b - Medical Electromagnetics, Biological Effects, Bioimaging 2 |
| ROOM G6  | 3A2 - Chaotic Signals: Generation, Emission, Propagation and Reception 1               |                                                                                      | 3P2 - Chaotic Signals: Generation, Emission, Propagation and Reception 2               |                                                        | 4A2 - Radio Wave Propagation and Wireless Channel Modeling                                                                    | 4P2 - MIMO Systems and Techniques                                   |                                                                   |
| ROOM G7  | 3A3 - Noninvasive Examination Techniques in Industry and Biomedicine 1                 |                                                                                      | 3P3 - Noninvasive Examination Techniques in Industry and Biomedicine 2                 |                                                        | 4A3 - Inverse Problems and Imaging                                                                                            | 4P3a - Scattering, Rough Surface Scattering                         | 4P3b - Georadar: Theory, Numerics and Application                 |
| ROOM G8  | 3A4a - Computational Electromagnetics 2                                                | 3A4b - The Modern Hybrid Methods in the Problems of Computational Electromagnetics 2 | 3P4 - Novel Mathematical Methods in Electromagnetics 1                                 |                                                        | 4A4 - Novel Mathematical Methods in Electromagnetics 2                                                                        | 4P4 - Computational Electromagnetics 3                              |                                                                   |
| ROOM G9  | 3A5 - Terahertz Photonics 1                                                            |                                                                                      | 3P5 - Terahertz Photonics 2                                                            |                                                        | 4A5 - Ultra-thin Plasmonic and Photonic Structured Surfaces for Sensing, Energy Harvesting, and Spectral Engineering of Light | 4P5 - Metamaterials and Plasmonics                                  |                                                                   |
| ROOM G10 | 3A6 - Remote Sensing Techniques of Earth System Related Components 3                   |                                                                                      | 3P6a - Remote Sensing Techniques of Earth System Related Components 4                  | 3P6b - Microwave Remote Sensing and Polarimetry, SAR 1 | 4A6 - Waves Propagation and Scattering in Random Media                                                                        | 4P6 - Microwave Remote Sensing and Polarimetry, SAR 2               |                                                                   |
| ROOM B1  | 3A7 - Numerical Methods and Simulations in Meta-materials and Photonics                |                                                                                      | 3P7 - Computational Techniques in Electromagnetics and Applications                    |                                                        | 4A7 - Microwave and Millimeter Wave Circuits and Devices, CAD 1                                                               | 4P7 - Microwave and Millimeter Wave Circuits and Devices, CAD 2     |                                                                   |
| ROOM B5  | 3A8 - BRICS Mini-symposium on Nonlinear Photonics and Photonic Assisted Technologies 1 |                                                                                      | 3P8 - BRICS Mini-symposium on Nonlinear Photonics and Photonic Assisted Technologies 2 |                                                        | 4A8 - BRICS Mini-symposium on Nonlinear Photonics and Photonic Assisted Technologies 3                                        | 4P8 - Mini-symposium on Nanophotonics and Metamaterials 6           |                                                                   |

|          | WEDNESDAY AM<br>9:00 May 24                                                                                             | WEDNESDAY PM<br>14:00 May 24                                                                                             |                                                                    | THURSDAY AM<br>9:00 May 25                                                                                                                                                  |                                               | THURSDAY PM<br>14:00 May 25                          |
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| ROOM B3  | 3A9 - Wave Manipulations by Metasurfaces                                                                                | 3P9a - Advances in Chipless RFID Tags and Sensors                                                                        | 3P9b - Antenna Array, Phased Array and Reconfigurable Array 1      | 4A9a - Antenna Array, Phased Array and Reconfigurable Array 2                                                                                                               | 4A9b - Wireless Power Transfer and Harvesting | 4P9 - Antenna Theory, Microstrip and Printed Antenna |
| ROOM R11 | 3A10 - Mini-symposium on Nanophotonics and Metamaterials 3                                                              | 3P10 - Mini-symposium on Nanophotonics and Metamaterials 4                                                               |                                                                    | 4A10 - Mini-symposium on Nanophotonics and Metamaterials 5                                                                                                                  |                                               |                                                      |
| ROOM R10 | 3A11 - Advanced Photonic Technologies for Spectroscopic Applications 1                                                  | 3P11a - Advanced Photonic Technologies for Spectroscopic Applications 2                                                  | 3P11b - Nonlinear Electromagnetics and Metasurfaces                | 4A11 - Optics and Photonics 2                                                                                                                                               |                                               |                                                      |
| ROOM R9  | 3A12 - Nonlinear and Extreme Nanophotonics 1                                                                            | 3P12 - Nonlinear and Extreme Nanophotonics 2                                                                             |                                                                    | 4A12 - Optical Spectroscopy of Two-dimensional Materials                                                                                                                    |                                               |                                                      |
| ROOM R8  | 3A13 - Plasmon-assisted Effects in Nanoparticles and Nanostructures: From Field Enhancement to Material Modifications 1 | 3P13a - Plasmon-assisted Effects in Nanoparticles and Nanostructures: From Field Enhancement to Material Modifications 2 | 3P13b - Medical Electromagnetics, Biological Effects, Bioimaging 1 | 4A13 - Earth Electromagnetic Environment and Radiowaves Propagation & Scattering: Modeling, Measurements and Observations Including NanoSats and CubeSats Emerging Approach |                                               |                                                      |
| ROOM B4  | 3A14 - Quantum Optics 1                                                                                                 | 3P14a - Advanced Photonic Materials and Nanophotonics                                                                    | 3P14b - Quantum Optics 2                                           |                                                                                                                                                                             |                                               |                                                      |
|          |                                                                                                                         |                                                                                                                          |                                                                    |                                                                                                                                                                             |                                               |                                                      |
|          |                                                                                                                         |                                                                                                                          |                                                                    |                                                                                                                                                                             |                                               |                                                      |
| ROOM B2  | 3A0 - Poster Session 5                                                                                                  | 3P0 - Poster Session 6                                                                                                   |                                                                    |                                                                                                                                                                             |                                               |                                                      |