PIERS 2006-TOKYO

Progress In Electromagnetics Research Symposium

Program

August 2-5, 2006
Tokyo, Japan

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Progress in Electromagnetics Research Symposium

August 2-5, 2006

Tokyo, Japan

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PIERS 2006-TOKYO SPONSORSHIP

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- The Electromagnetics Academy

Co-sponsorship

- MIT Center for Electromagnetic Theory and Application, Research Laboratory of Electronics
- The Electromagnetics Academy at Zhejiang University
- The Institute of Electrical Engineers of Japan (IEEJ)

Technical Co-sponsorship

- Electronics Society, The Institute of Electronics, Information and Communication Engineers (IEICE)

Cooperation

- The Radiation Science Society of Japan

Financial Supporters

- Chuo University
- International Communications Foundation
- Support Center for Advanced Telecommunications Technology Research
- The Telecommunications Advancement Foundation

SYMPOSIUM SITE

The 2006 Progress in Electromagnetics Research Symposium (PIERS 2006-Tokyo) will be held on August 2-5, 2006 at Korakuen Campus of Chuo University, Tokyo, Japan (Address: 1-13-27 Kasuga, Bunkyo-ku, Tokyo 112-8551, Japan).

The PIERS 2006-Tokyo technical sessions will begin on Wednesday morning, August 2, 2006 in Building No. 6 of Korakuen Campus of Chuo University. You may register in the PIERS Office (Room 6402, 4th Floor, Building No. 6, Korakuen Campus, Chuo University) on Tuesday, August 1, 2006 or during the symposium.

REGISTRATION

All the PIERS2006-Tokyo participants must register at PIERS Office located in Room 6402, 4th Floor, Building No. 6 at Korakuen Campus of Chuo University. The PIERS Office will be open during the following hours:

Tuesday, August 1, 2006: 3:00 pm - 6:00 pm
Wednesday, August 2, 2006: 9:00 am - 5:30 pm
Thursday, August 3, 2006: 9:00 am - 5:30 pm
Friday, August 4, 2006: 9:00 am - 5:30 pm
Saturday, August 5, 2006: 9:00 am - 5:30 pm

The on-site registration fee is ¥50,000 for general participants and ¥25,000 for students. A valid student ID is required for student registration. If you have pre-registered, your symposium materials will be ready for you to pick up at the PIERS Office on Tuesday, August 1, 2006 and during the symposium. Please wear your name badge throughout the symposium.

LANGUAGE

The official language for the symposium is English.

SPECIAL EVENTS

Opening Reception

On Tuesday evening, August 1, 2006, from 6:00 pm to 8:00 pm, join your PIERS 2006-Tokyo hosts and other participants for an informal opening reception with free buffet dinner, which will be held in Room 31407, 14th Floor, Building No. 3, Korakuen Campus of Chuo University.

Symposium Banquet

On Friday evening, August 4, 2006, from 6:00 pm to 8:00 pm, a symposium banquet is planned for PIERS 2006-Tokyo participants and their guests in Room 31407, 14th Floor, Building No. 3, Korakuen Campus of Chuo University. A limited number of banquet tickets (¥5,000 per person) for non-registered participants will be sold in the PIERS Office (Room 6402, 4th Floor, Building No. 6, Korakuen Campus, Chuo University) on a first-come, first-served basis.

COFFEE BREAKS

Coffee breaks will be arranged from 10:20 am to 10:40 am in the morning and from 3:30 pm to 3:50 pm in the afternoon for each day of the symposium. Participants are invited to visit Room 6410, 4th Floor, Building No. 6, Korakuen Campus of Chuo University for refreshments.

INTERNET ACCESS

A couple of computers connected to internet and the wireless internet service are provided for convenience of participants in Room 6410, 4th Floor, Building No. 6, Korakuen Campus of Chuo University.

GUIDELINES FOR PRESENTERS

Oral Presentations

Each session room is equipped with a stationary computer connected to a LCD projector (beamer). If you need a standard overhead projector for transparencies, please contact the PIERS Office no later than half-day before your session begins. Presenters choosing to use electronic presentation must load their presentation files in advance onto the central PIERS computer in the PIERS Office no later than half-day before their session beginning and use the PIERS computer in the session room for their presentation. Presenters are not allowed to detach the PIERS computer and attach their own notebook/laptop to the LCD projector.

The central PIERS computer is equipped with a USB port and a CD-ROM drive. To load your presentation files to the PIERS computer, you should bring a USB flash memory or a CD-ROM containing your presentation files to the PIERS Office. The staff of the Technical Program Committee will assist you to load your presentation files to the PIERS computer. Presenters can test their presentation at the PIERS Office no later than half-day before their session.

A scheduled time slot for each presentation is 20 minutes (15 minutes for presentation and 5 minutes for discussion). Presenters are required to report to the staff in their session room and to their session chair at least 10 minutes prior to the start of their session. The session chair must be present in the session room at least 15 minutes before the start of his/her session and must strictly observe the starting/ending time for each presentation and refrain from changing the paper presentation sequence.

Poster Presentations

Presenters are requested to stand by their posters during the poster session. One panel (about 90 cm $\times$ 180 cm) will be available for each poster. Pins or thumbtacks are provided to mount your posters on the board. The poster session will be 3:00 pm to 5:00 pm on Friday, August 4, 2006. All presenters are required to mount their posters one hour before the session and remove them at the end of the session.

GENERAL INFORMATION

SYMPOSIUM VENUE

PIERS 2006-Tokyo will be held at Korakuen Campus of Chuo University, Tokyo, Japan. The Korakuen Campus of Chuo University is located in downtown Tokyo and is easily accessible from Tokyo/Narita Airport and Tokyo/Haneda Airport. Official hotels arranged for participants are conveniently located in the vicinity of the symposium venue.

The contact information of the PIERS Office on August 1 and during the symposium is as follows:

PIERS Office
Room 6402, 4th Floor, Building No. 6
Korakuen Campus, Chuo University
Address: 1-13-27 Kasuga, Bunkyo-ku, Tokyo 112-8551, Japan
Tel/Fax: +81-3-3817-1995 (valid during August 1-5, 2006)
E-mail: piers2006tokyo@kazuya.elect.chuo-u.ac.jp

All session rooms and the PIERS Office are distributed in Building No. 6, Korakuen Campus of Chuo University. The Opening Reception and the Symposium Banquet will be held in Room 31407, 14th Floor, Building No. 3, Korakuen Campus of Chuo University.

ABOUT TOKYO

Tokyo is one of the largest cities in the world with a population of 12.29 million and is the biggest of the 47 prefectures throughout Japan. It can easily be reached from various cities of the world. In fact, 1,600 international flights per week are served at the New Tokyo International Airport in Narita. Tokyo is an ideal center for exploring history and culture, and for natural beauty as well as for shopping. Historically, Tokyo replaced Kyoto as the capital of Japan in 1868 with the advent of the Meiji Restoration. At the same time, the Edo Castle, long used as the seat of the Tokugawa Shogunate Government, was converted into the present Imperial Palace. Visitors to the Imperial Palace grounds can find a few remains of the former Edo Castle and enjoy excellent historical displays. In downtown Tokyo, there are many attractions such as the Meiji Shrine, the Asakusa Kannon Temple, the Tokyo Tower, the National Diet Building. Tokyo also boasts of 240 art museums and galleries and 277 parks and gardens, drawing a large crowd of visitors. In the vicinity of Tokyo, there are many more attractive sightseeing spots. One hour by train from Tokyo, Kamakura is a small and quiet coastal town with many tranquil temple grounds, where most famous among the city's attractions is its giant bronze image of the Buddha, the Daibustu. 90 minutes by train from Tokyo, Hakone is a famous resort area set in the beautiful mountains which comprise the Fuji-Hakone-Izu National Park. Mt. Fuji, at 3,776 m in height, is known as the tallest and most beautiful mountain in Japan. In addition, two hours by train from Tokyo, Nikko is probably the best known of Japan's 27 national parks to foreign tourists. During the month of August, the average temperature is about 26 degrees C (79 degrees F) and the relative humidity is around 66%. The Korakuen Campus of Chuo University, the venue of PIERS 2006-Tokyo, is conveniently situated in the heart of Tokyo, and it is easily accessible from the New Tokyo International Airport (80 minutes).

DUTY FREE IMPORT

Personal effects and professional equipment can be brought into Japan duty free as long as the customs officer deems their contents and quantities reasonable. You can also bring in 400 cigarettes, 500 grams of tobacco or 100 cigars; 3 bottles of alcoholic beverages; 2 ounces of perfume; and gifts and souvenirs whose total market price is less than ¥200,000 or its equivalent. There is no allowance for tobacco or alcoholic beverages for persons aged 19 years or younger. Firearms and other types of weapons, and narcotics are strictly prohibited.

INSURANCE

The PIERS 2006-Tokyo organizers cannot accept responsibility for accidents that might occur. Participants are encouraged to purchase travel insurance before leaving their home country. Insurance plans typically cover accidental loss of belongings, medical costs in case of injury or illness, and other possible risks of international travel.

CLIMATE

The temperature in Tokyo during the period of the symposium ranges between 25-31 degrees Celsius.

CURRENCY EXCHANGE

Only Japanese yen (¥) is acceptable at regular stores and restaurants. Certain foreign currencies may be accepted at a limited number of hotels, restaurants and souvenir shops. You can buy yen at foreign exchange banks and other authorized money exchangers on presentation of your passport.

TRAVELER'S CHECKS AND CREDIT CARDS

Traveler's checks are accepted only by leading banks and major hotels in principal cities, and the use of traveler's checks in Japan is not as popular as in some other countries. VISA, MasterCard, Diners Club, and American Express are widely accepted at hotels, department stores, shops, restaurants, and nightclubs.

TIPPING

In Japan, tips are not necessary anywhere, even at hotels and restaurants.

ELECTRICITY

Electric current is uniformly 100 volts, AC, throughout Japan, but with two different cycles: 50 in eastern Japan including Tokyo, and 60 in western Japan including Nagoya, Kyoto and Osaka. Leading hotels in major cities have two outlets of 100 and 220 volts but their sockets usually accept a two-leg plug only.

SHOPPING

Shops and other sales outlets in Japan are generally open on Saturdays, Sundays and national holidays as well as weekdays from 10:00 am to 8:00 pm. Department stores, however, are closed on one weekday, differing by store, and certain specialty shops may not open on Sundays and national holidays.

SIGHTSEEING & TOURS

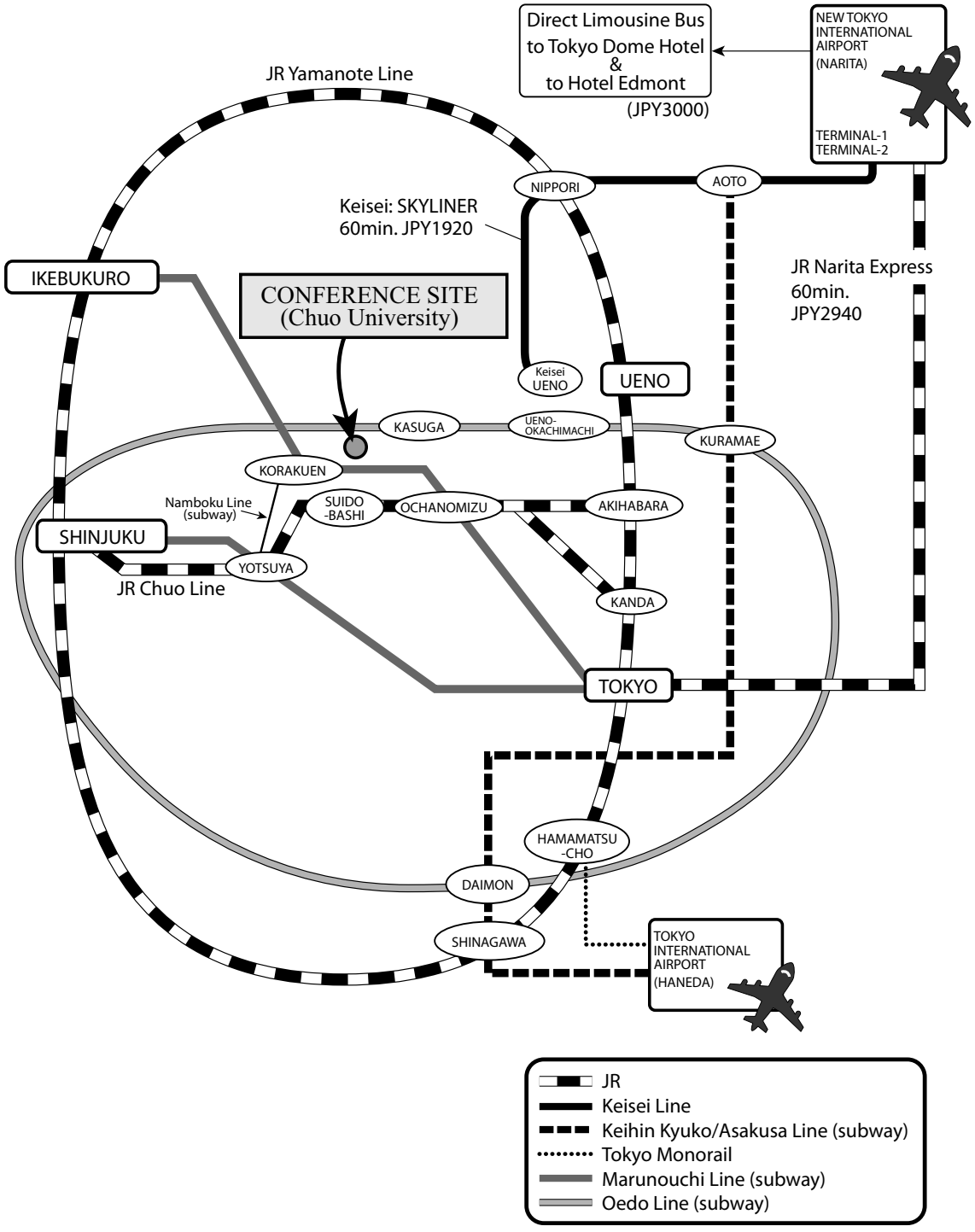
For those interested in sightseeing in and around Tokyo, please visit the following web sites:

Tokyo Convention & Visitors Bureau: http://www.tcvb.or.jp/en/index_en.htm
JTB Global Marketing & Travel Inc.: http://www.jtbgmt.com/sunrisetour/cd/
HATO Bus Co., Ltd.: http://www.hatobus.com/

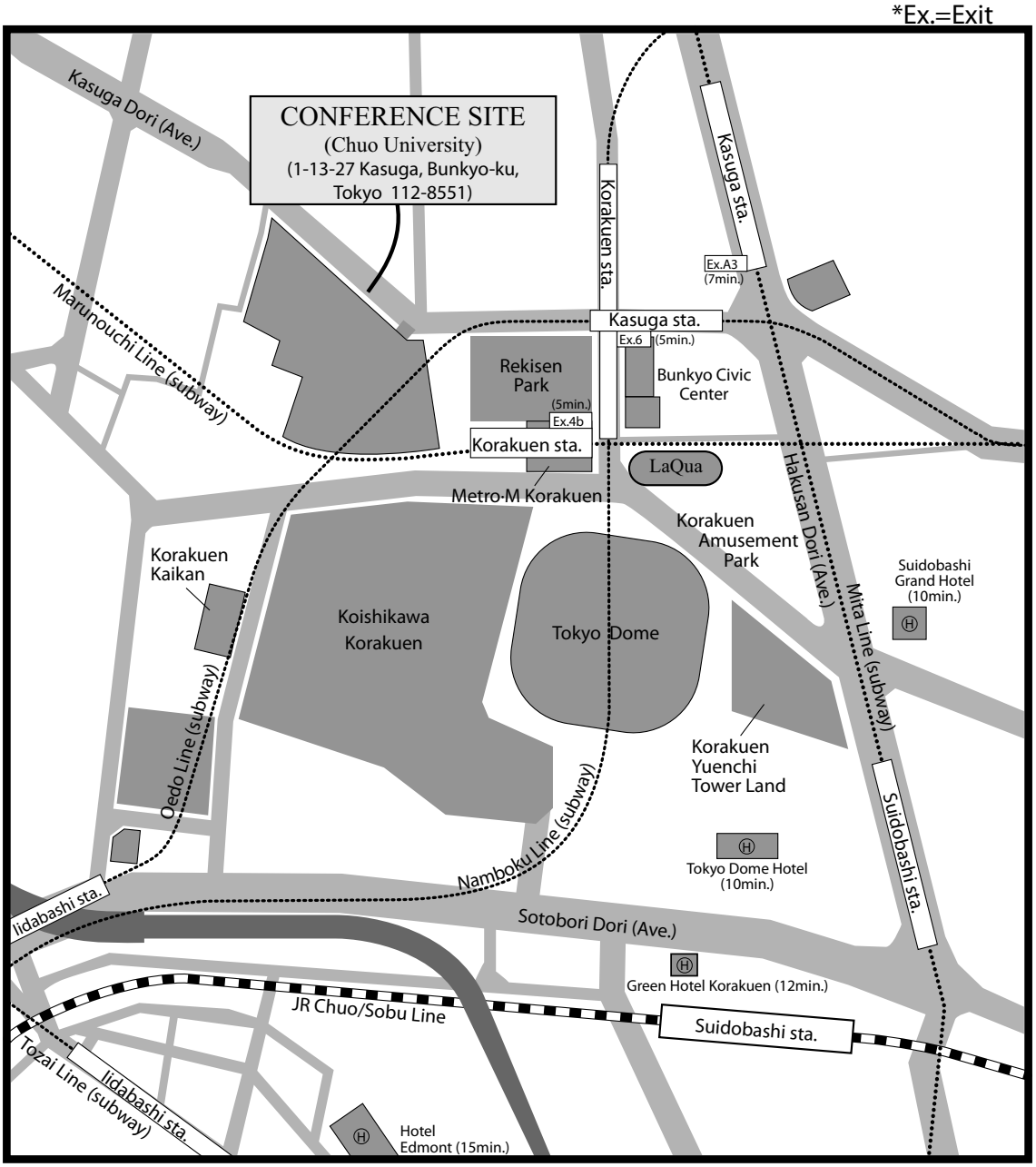
TOUR DESK

Tour agency supporting PIERS 2006-Tokyo, JTB Global Marketing & Travel Inc. will host a tour desk on site to assist guests arranging day trips and to answer questions about the local area.

ACCESS MAP

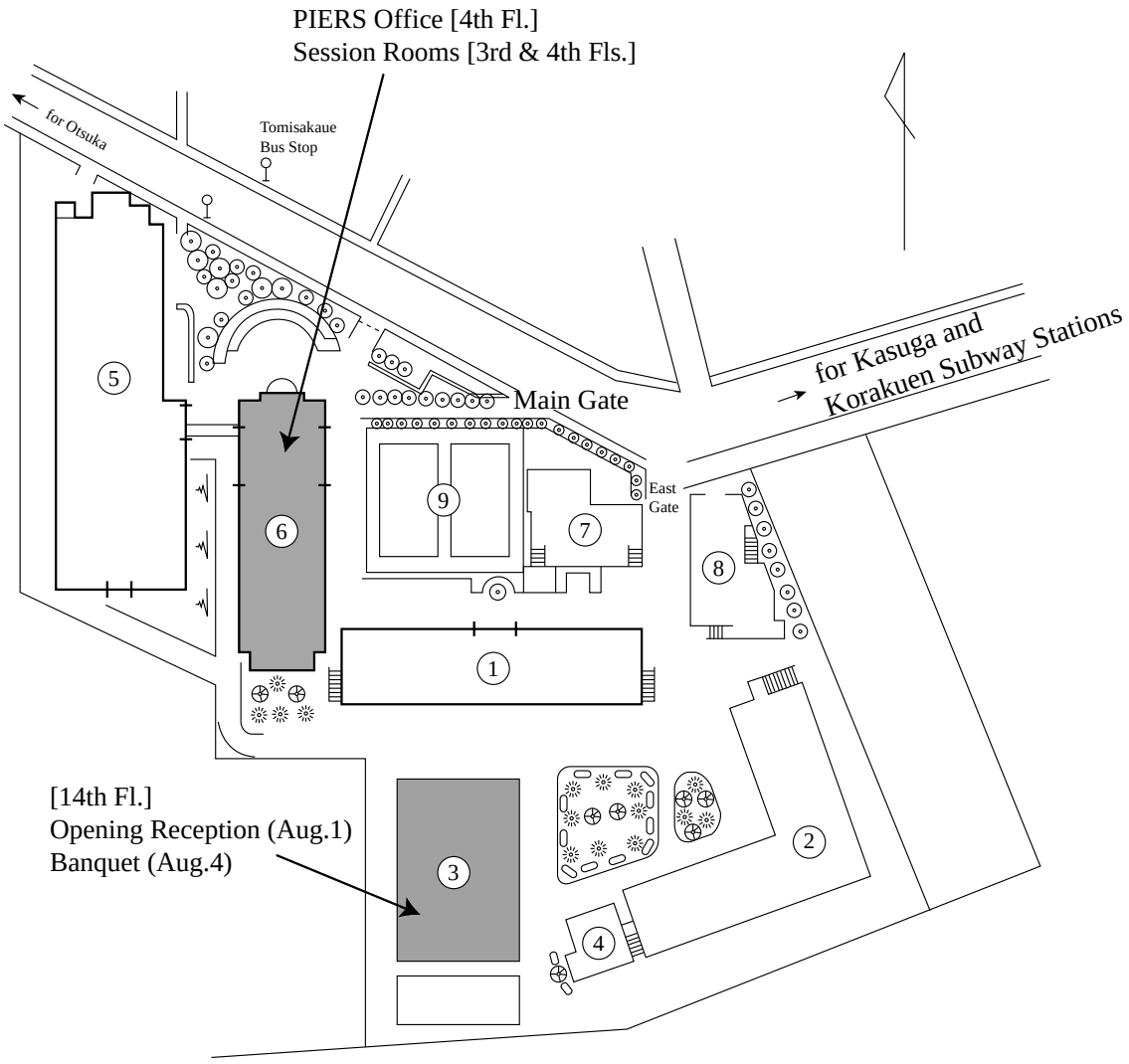

Direct Limousine Bus
to Tokyo Dome Hotel
&
to Hotel Edmont
(JPY3000)
NEW TOKYO
INTERNATIONAL
AIRPORT
(NARITA)
TERMINAL-1
TERMINAL-2
JR Yamanote Line
NIPPORI
AOTO
Keisei: SKYLINER
60min. JPY1920
JR Narita Express
60min.
JPY2940
IKEBUKURO
CONFERENCE SITE
(Chuo University)
Keisei
UENO
UENO
KASUGA
UENO-
OKACHIMACHI
KURAMAE
KORAKUEN
Namboku Line
(subway)
SUIDO
-BASHI
OCHANOMIZU
AKIHABARA
SHINJUKU
YOTSUYA
JR Chuo Line
KANDA
TOKYO
HAMAMATSU
-CHO
DAIMON
SHINAGAWA
TOKYO
INTERNATIONAL
AIRPORT
(HANEDA)
JR
Keisei Line
Keihin Kyuko/Asakusa Line (subway)
Tokyo Monorail
Marunouchi Line (subway)
Oedo Line (subway)

AREA MAP


*Ex.=Exit
CONFERENCE SITE
(Chuo University)
(1-13-27 Kasuga, Bunkyo-ku,
Tokyo 112-8551)
Kasuga Dori (Ave.)
Marunouchi Line (subway)
Korakuen sta.
Kasuga sta.
Ex.A3
(7min.)
Kasuga sta.
Ex.6
(5min.)
Rekisen Park
(5min.)
Ex.4b
Bunkyo Civic Center
Korakuen sta.
LaQua
Metro-M Korakuen
Hakusan Dori (Ave.)
Korakuen Amusement Park
Korakuen Kaikan
Koishikawa Korakuen
Tokyo Dome
Suidobashi Grand Hotel
(10min.)
Mita Line (subway)
Oedo Line (subway)
Korakuen Yuenchi Tower Land
Suidobashi sta.
Tokyo Dome Hotel
(10min.)
Namboku Line (subway)
Iidabashi sta.
Sotobori Dori (Ave.)
Green Hotel Korakuen (12min.)
JR Chuo/Sobu Line
Suidobashi sta.
Tozai Line (subway)
Iidabashi sta.
Hotel
Edmont (15min.)

MAP OF THE CONFERENCE SITE

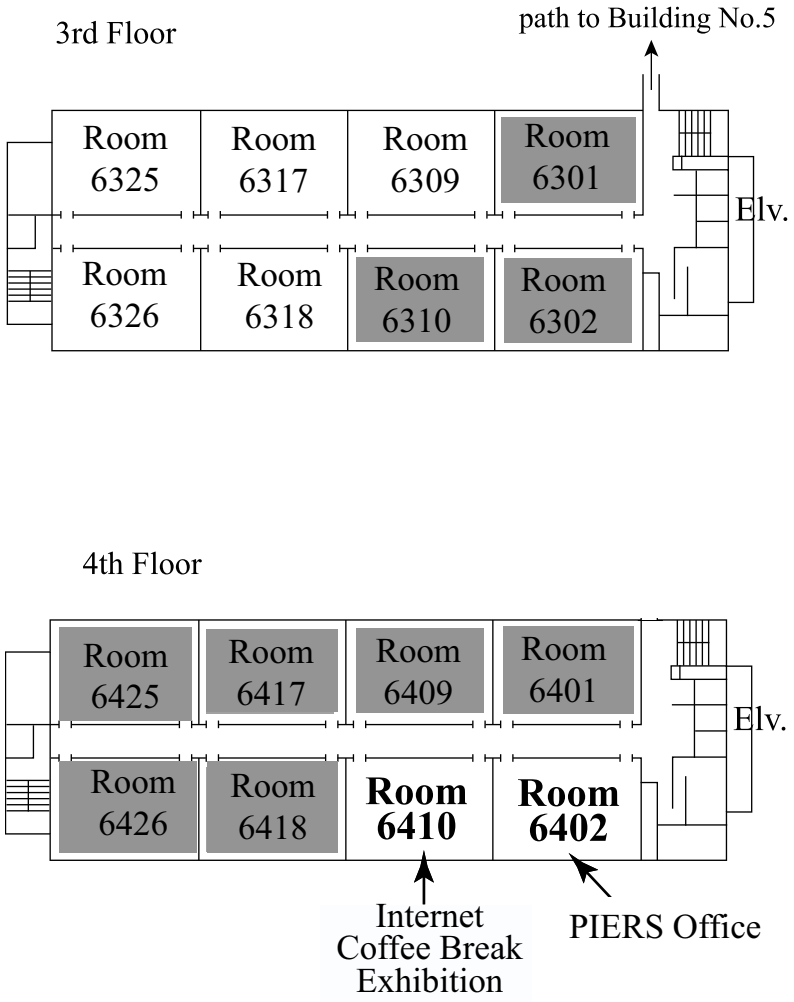
Conference Site
(Chuo University, Korakuen Campus)



1. Building No.1
2. Building No.2
3. Building No.3 (Opening Reception, Banquet)
4. Building No.4
5. Building No.5
6. Building No.6 (PIERS Office, Session Rooms)
7. Building No.7 (University shop)
8. Building No.8
9. Outdoor Athletic Facilities

FLOOR GUIDE OF CHUO UNIVERSITY

PIERS Office and Session Rooms (Building No.6)



PIERS 2006-TOKYO TECHNICAL PROGRAM

Session 1A1
Waveguides and Transmission-Lines Based on Metamaterials

Wednesday AM, August 2, 2006

Room 6401

Organized by Ari Viitanen

Chaired by Ari Viitanen, Nigel Johnson

09:00 Electromagnetic Waves Guided by Magnetic Metastructures
N. V. Ilin (*Institute of Applied Physics, Russia*); *I. G. Kondratiev* (*Institute of Applied Physics, Russia*); *A. I. Smirnov* (*Institute of Applied Physics, Russia*);

09:20 Analysis, Design and Construction of a New Power Sampler with Small Size
Abbas Ali Lotfi Neyestanak (*Jahad Daneshgahi, Iran*); *Mohammad Mirhossaini* (*Eslamic Azad University, Iran*); *Narges Ahmidi* (*Amir Kabir University of Technology, Iran*);

09:40 Emprical Studies on Electyromagnetic Fields around Two Thin Wires
H. Echigo (*Tohoku Gakuin University, Japan*); *K. Sato* (*Tohoku Gakuin University, Japan*);

10:00 The Influence of Metal Type on Split Ring Resonator (SRR) Resonant Features in the Near Infra Red
N. P. Johnson (*University of Glasgow, UK*); *A. Z Khokhar* (*University of Glasgow, UK*); *S. McMeekin* (*Glasgow Caledonian University, UK*); *C. Jin* (*University of Toronto, Canada*); *H. M Chong, R. M De La Rue* (*University of Glasgow, UK*);

10:20 **Coffee Break**

10:40 Metamaterial Transmission Lines Based on Complementary Split Ring Resonators: a Review
I. Gil, J. Bonache, M. Gil, J. G. Garcia, F. Martin (*Universitat Autónoma de Barcelona, Spain*); *J. D. Baena, M. Freire* (*Universidad de Sevilla, Spain*); *R. Marqués* (*Universidad de Sevilla, Spain*); *F. Falcone, T. Lopetegi, M. A. G. Laso* (*Universidad Pública de Navarra, Spain*); *M. Sorolla* (*Universidad Pública de Navarra, Spain*);

11:00 Waveguiding by Dichroic Filters Metamaterial
M. Beruete, M. Sorolla (*Public University of Navarre, Spain*); *I. Campillo* (*Labein Centro Tecnologicó, Spain*);

11:20 Miniaturization of Microwave Circuits by Using Artificial Transmission Lines
J. P. Kim (*Chung-Ang University, Korea*);

11:40 Metawaveguides and Antennas Formed by Chains of Resonating Particles
A. Viitanen (*Helsinki University of Technology, Finland*);

12:00 Magnetic Current Line Source in a Medium with Strong Spatial Dispersion
I. S. Nefedov (*Helsinki University of Technology (TKK), Finland*); *A. Viitanen* (*Helsinki University of Technology, Finland*); *S. A. Tretyakov* (*Helsinki University of Technology (TKK), Finland*);

Session 1A2
Recent Advances on Metamaterials

Wednesday AM, August 2, 2006

Room 6409

Organized by Atsushi Sanada

Chaired by Atsushi Sanada

09:00 Transmission Properties Of Metal Hole Arrays In terahertz Region
M. Hangyo (*Osaka University, Japan*); *F. Miyamaru* (*Institute of Physical and Chemical Research (RIKEN), Japan*);

09:20 A Possible Route for Left-Handed Meta-Materials using Ferromagnetic-Metal Nanocomposite Films
S. Tomita (*Nara Institute of Science and Technology (NAIST), Japan*);

09:40 Linear and Nonlinear Electromagnetic Responses of Metamaterials in Optical Regime
T. Ishihara (*Tohoku University, Japan*);

10:00 Negative Refraction of Guided Wave Mode in Ferrite Based Periodic Layered composites
R. X. Wu, T. Zhao, F. Yang, P. Chen (*Nanjing University, China*);

10:20 **Coffee Break**

10:40 Three-Dimensional Negative-Refractive-Index Metamaterials Composed of Spherical Dielectric Resonators
T. Ueda (*University of California, U.S.A.*); *T. Itoh* (*University of California, U.S.A.*);

11:00 Dielectric Resonator Made of Artificial Molecules
I. Awai, A. K. Saha, Q. Wei (*Ryukoku University, Japan*);

11:20 Novel Ultra Wideband (UWB) Metamaterial (MTM) Passive Components
C. Caloz (*Ecole Polytechnique, Canada*); *H. V. Nguyen* (*Ecole Polytechnique, Canada*); *A. Sanada* (*Yamaguchi University, Japan*);

11:40 Microwave Circuit Applications of Resonant Type Left Handed Lines Based on Complementary Split Rings Resonators
M. Gil (*Universitat Autonoma de Barcelona, Spain*); *I. Gil* (*Universitat Autonoma de Barcelona, Spain*); *J. Bonache* (*Universitat Autonoma de Barcelona, Spain*); *J. Garcia* (*Universitat Autonoma de Barcelona, Spain*); *F. Martin* (*Universitat Autonoma de Barcelona, Spain*);

Session 1A3
Computation in Electromagnetics for Ultra Wide Band Applications

Wednesday AM, August 2, 2006

Room 6417

Organized by Tony Brown, F. Costen

Chaired by Tony Brown, F. Costen

09:00 The Application of Domain Decomposition Method in Parallel Computing Electromagnetic Field
T. Li (*Wuhan University, China*);

09:20 EME Analysis of Ultra-Wide Band, Quasi-adiabatic Dielectric Tapered Waveguides
T. G. Li, H. W. Chang (*National Sun Yat-sen University, Taiwan*);

09:40 Filter Effect of FDTD for Broadband Signals
A. Thiry (*The University of Manchester, U.K.*); *F. Costen* (*The University of Manchester, U.K.*); *A. Brown* (*The University of Manchester, U.K.*);

10:00 Development of Dielectric Filled Tem-Horn Antenna
S. Norouzi (,); *C. Ghobadi* (,); *J. Noriniya* (,);

10:20 **Coffee Break**

10:40 Design of the Broadband Bandpass Filter Using Suspended Substrate
J. S. Kim, S. G. Byeon (*Korea Electronics Technology Institute, Korea*); *S. G. Byeon* (*Korea Electronics Technology Institute, Korea*);

11:00 A Fully Integrated CMOS RFIC 3.1-10.6 GHz Ultra Wideband Low Noise Amplifier with Inter-Stage Inductor
M. L. Her (*Feng Chia University, Taiwan, R. O. C.*); *M. Y. Shen* (*Feng Chia University, Taiwan, R. O. C.*); *C. Y. Fan* (*Feng Chia University, Taiwan, R. O. C.*); *Y. Z. Wang* (*Feng Chia University, Taiwan, R. O. C.*);

Session 1A4
Microwave and Millimeter-Wave Circuits

Wednesday AM, August 2, 2006

Room 6418

Organized by Kazuya Kobayashi, Tsuneki Yamasaki

Chaired by Tsuneki Yamasaki, Alain Priou

9:00 An Oscillator with Reduced Phase Noise and Improved Harmonic Characteristics Based on a Corrugated CPW EBG Structure
C. G. Hwang (*Korea Advanced Institute of Science and Technology (KAIST), Republic of Korea*); *N. H. Myung* (*Korea Advanced Institute of Science and Technology (KAIST), Republic of Korea*);

9:20 A Novel Compact CPW Bandpass Filter with Superwide Stopband Suppression
S. S. Liao (*Feng-Chia University, Taiwan R. O. C.*); *C. Y. Tao* (*Feng-Chia University, Taiwan R. O. C.*); *P. T. Sun* (*Feng-Chia University, Taiwan R. O. C.*); *H. W. Liu* (*Feng-Chia University, Taiwan R. O. C.*); *C. Y. Chien* (*Feng-Chia University, Taiwan R. O. C.*);

9:40 A Novel Miniaturized Planar Microstrip Branch-Line Coupler
S. S. Liao (*Feng-Chia University, Taiwan R. O. C.*); *Y. F. Tseng* (*Feng-Chia University, Taiwan R. O. C.*); *C. Y. Lai* (*Feng-Chia University, Taiwan R. O. C.*); *S. H. S* (*Feng-Chia University, Taiwan R. O. C.*); *C. Y. Gun* (*Nan-Kai Institute of Technology, Taiwan R.O.C.*);

10:00 Design and Tuning of Planar Filter Having Optimal Pass Band Response
R. C. Hsieh (*Huafan University, Taiwan, R.O.C.*); *Y. C. Chen* (*Huafan University, Taiwan, R.O.C.*); *H. H. Chen* (*Huafan University, Taiwan, R.O.C.*); *Y. H. Chou* (*Huafan University, Taiwan, R.O.C.*);

10:20 **Coffee Break**

10:40 A Novel UWB Bandpass Filter
K. M. Shum (*City University of Hong Kong, China*); *W. T. Luk* (*City University of Hong Kong, China*); *C. H. Chan* (*City University of Hong Kong, China*); *Q. Xue* (*City University of Hong Kong, China*);

11:00 PLL Assisted Injection Locking Phase Control
K. C. Wan, Quan Xue (*City University of Hong Kong, China*);

11:20 Intelligent Use of the Non Uniform Transmission Lines to Design Active and Passive Microwave Circuits.
M. Boussalem, H. Gaha, F. Choubani, J. David, R. Crampagne (*6'TEL - SUP'COM - TUNISIA, France*);

Session 1A5
Extended/Unconventionl Electromagnetic Theory, EHD(Elecrohydrodynamics)/EMHD (Electromagnetohydrodynamics) and Electrobiology

Wednesday AM, August 2, 2006

Room 6425

Organized by Hiroshi Kikuchi

Chaired by Hiroshi Kikuchi

10:40 Laboratory Evidence of Electric Reconnection Model by a Universal Electric-Cusp Type Plasma Reactor and Possible Applications to Diamond and New Material Production
H. Kikuchi (*Institute for Environmental Eletromagnetics, Japan*);

11:00 Generation of Solar Magnetic Fields: Contribution of Octupolar Seed Field
D. K. Callebaut (*University of Antwerp, Belgium*); *A. H. Khater* (*Beni-Suef University, Egypt*);

11:20 Periodic Magnetic Fields from MHD Evolution Equation
D. K. Callebaut (*University of Antwerp, Belgium*);

11:40 Powerful Non-linear Plasma Waves from Moderate First Order Perturbations in Cylindrical Coordinates
D. K. Callebaut (*University of Antwerp, Belgium*); *G. K. Karugila* (*Faculty of Science, SUA, Tanzania*);

12:00 Similarities and Differences Among Parametrically Amplifying Traveling-Wave Antennas, Traveling-Wave Tubes, and Esaki Diodes
H. Kikuchi (*Institute for Environmental Eletromagnetics, Japan*);

Session 1A6
Dosimetry of Human-Body Exposure to High-Frequency Electromagnetic Fields I

Wednesday AM, August 2, 2006

Room 6426

Organized by Soichi Watanabe, Teruo Onishi

Chaired by Teruo Oonishi, Niels Kuster, Joe Wiart

10:40 Suitability and Limitations of Fast Scanning Systems for Demonstration of Compliance with SAR Standards
S. Kühn (*IT'IS Foundation, Swiss Federal Institute of Technology, Switzerland*); *T. Schmid* (*IT'IS Foundation, Swiss Federal Institute of Technology, Switzerland*); *D. Schmid* (*IT'IS Foundation, Swiss Federal Institute of Technology, Switzerland*); *N. Kuster* (*IT'IS Foundation, Swiss Federal Institute of Technology, Switzerland*);

11:00 On-Site SAR Distribution Estimation in Actual Electromagnetic Environment Based on Spatial Impulse Responses
J. Q. Wang (*Nagoya Institute of Technology, Japan*); *T. Takahashi* (*Nagoya Institute of Technology, Japan*);

11:20 Analysis of the RF exposure of children using handsets
J. Wiart, A. Hadjem (*France Telecom R and G, France*); *D. Lautru* (*Universite Paris VI Jussieu, France*); *I. Bloch* (*Ecole Nationale Superieure des Telecommunications, France*); *R. D. Seze* (*Universite Paris VI Jussieu, France*); *M. F. Wong* (*France Telecom R and G, France*); *V. F. Hanna* (*Universite Paris VI Jussieu, France*);

11:40 Anatomical and physical characteristics for deformed whole-body child models based on Japanese body dimensions data and comparison with MRI-Base European child head models
T. Nagaoka (*National Institute of Information and Communications Technology, Japan*); *S. Watanabe* (*National Institute of Information and Communications Technology, Japan*); *J. Wiart* (*France Telecom R & G, France*);

12:00 FDTD Calculation of Temperature-Rise in Human Body for Far Field Exposure at ICNIRP Reference Level
T. Asano (*Nagoya Institute of Technology, Japan*); *A. Hirata* (*Nagoya Institute of Technology, Japan*); *O. Fujiwara* (*Nagoya Institute of Technology, Japan*);

Session 1P1
Young Scientists Research for Applied Electromagnetics

Wednesday PM, August 2, 2006

Room 6401

Organized by Akimasa Hirata, Kunimasa Saitoh

Chaired by Akimasa Hirata, Kunimasa Saitoh

13:30 Design and Analysis of Dispersion Compensating Photonic Crystal Fiber Raman Amplifiers
S. K. Varshney, K. Saitoh, M. Koshiba (*Hokkaido University, Japan*);

13:50 Cryogenic Tailoring of the Electrodynamic Properties in Superconducting Photonic Crystals: Realization of Tunable Metamaterial Platforms for THz Applications
N. J. Florous, K Saitoh, M Koshiba (*Hokkaido University, Japan*);

14:10 Spectral Considerations About 2D Paraxial and Non-Paraxial Beam Solutions
R. M. Isla, M. J. G. Morales (*ETSIT Universidad de Valladolid, Spain*);

14:30 Miniaturized LTCC Lumped-Element Transmission Line and Its Applications
Y. S. Lin (*National Central University, Taiwan*); *K. M. Li* (*Chi-Mei Communication System Inc., Taiwan*);

14:50 Application of LOD-FDTD Methods to Optical Waveguide Analyses
J. Shibayama (*Hosei University, Japan*); *M. Muraki* (*Hosei University, Japan*); *R. Takahashi* (*Hosei University, Japan*); *J. Yamauchi* (*Hosei University, Japan*); *H. Nakano* (*Hosei University, Japan*);

15:10 Computation of Scattering from Randomly Distributed Dielectric Circular Cylinders
N. Nakashima, M. Tateiba (*Kyushu University, Japan*);

15:30 **Coffee Break**

15:50 Application of CIP Method to Electromagnetic Field Analysis for Numerical Dosimetry of Electromagnetic Field Expoure
K. Sasaki, Y. Suzuki, M. Taki (*Tokyo Metropolitan University, Japan*);

16:10 Performances of a RFID Antenna Using a Biological Tissue-Equivalent Solid Phantom
D. Ochi, M. Takahashi, K. Ito (*Chiba University, Japan*); *K. Uesaka* (*Hitachi, Ltd., Japan*);

16:30 Review of Thermal Elevation Due to Handset Antennas
A. Hirata (*Nagoya Institute of Technology, Japan*); *O. Fujiwara* (*Nagoya Institute of Technology, Japan*); *T. Shiozawa* (*Chubu University, Japan*);

16:50 Static Stability and Plate Spacing for Diamagnetic Levitating Magnets
J. N. Ho (*University of Washington, U.S.A.*); *W. C. Wang* (*University of Washington, U.S.A.*);

Session 1P2
Scattering by Canonical Objects

Wednesday PM, August 2, 2006

Room 6409

Organized by Egon Marx, Andrey Osipov

Chaired by Egon Marx, Andrey Osipov

13:30 Effect of the Interface Separating a Homogeneous Medium and a Photonic Crystal
R. Pierre, B. Gralak, T. Decoopman, G. Tayeb, S. Enoch, D. Maystre (*CNRS, Institut Fresnel, France*);

13:50 Scattering by a Finite Grating on a Substrate
E. Marx (*National Institute of Standards and Technology, U.S.A.*);

14:10 Rigorous Study of Electromagnetic Transmission through a Rectangular Aperture in a Perfectly Conducting Screen
H. Serizawa (*Numazu National College of Technology, Japan*); *K. Hongo* (*Toho University, Japan*);

14:30 Diffraction of Electromagnetic Plane Wave by an Impedance Strip and a Slit in an Impedance Plane
K. Hongo (*Toho University, Japan*); *A. Imran* (*Quaid-I-Azam University, Pakistan*); *Q. A. Naqvi* (*Quaid-I-Azam University, Pakistan*);

14:50 Nullification Theorem for the Sommerfeld Integral in the Theory of Electromagnetic Scattering by Impedance Wedges
A. Osipov (*DLR Microwaves and Radar Institute, Germany*);

15:10 New Numerical Experiments in Scattering by Dielectric Wedges
E. Marx (*National Institute of Standards and Technology, U.S.A.*);

15:30 **Coffee Break**

15:50 Canonical Solutions for Scattering by Penetrable Wedge Structures
P. L. E. Uslenghi (*University of Illinois at Chicago, U.S.A.*);

16:10 Exact Scattering by Penetrable Paraboloidal Structures
P. L. E. Uslenghi (*University of Illinois at Chicago, U.S.A.*);

16:30 Open Shells of Revolution: Method of Analytical Regularization
S. B. Panin, P. D. Smith, E. D. Vinogradova (*Macquarie University, Australia*); *S. S. Vinogradov* (*University of Sydney, Australia*);

16:50 Diffraction of Electromagnetic Plane Wave by a Perfectly Conducting Disk
K. Hongo (*Toho University, Japan*); *Q. A. Naqvi* (*Quaid-I-Azam University, Pakistan*);

Session 1P3
EMC Problems on Printed Circuit Boards and Common Mode

Wednesday PM, August 2, 2006

Room 6417

Organized by Osami Wada

Chaired by Osami Wada

13:30 Analysis of Common Mode Propagation Based on Single Conductor Line
T. Hisakado, K. Yoshimura (*Kyoto University, Japan*); *K. Okumura* (*Hiroshima Institute of Technology, Japan*);

13:50 Analysis on 20H Rule Applied Printed Circuit Board
S. Ikami, A Sakurai (*IBM Japan, Japan*);

14:10 Common- and Differential-Mode Components at Asymmetric Pattern-Layout Lines on PCB
Y. Kami, F. Xiao (*University of Electro-Communications, Japan*);

14:30 Extraction of Parasitic and Stray Capacitances from 1-Port Measurements
U. Paoletti (*Kyoto University, Japan*); *O. Wada* (*Kyoto University, Japan*);

14:50 Excitation of Electromagnetic Modes by a Signal Transmission Line Overpassing a Slit of Return Plane
T. Matsushima (*Okayama University, Japan*); *Y. Sakai, K. Iokibe, Y. Toyota, R. Koga* (*Okayama University, Japan*); *T. Watanabe* (*Industrial Technology Center of Okayama Prefecture, Japan*); *O. Wada* (*Kyoto University, Japan*);

15:10 Crosstalk Analysis of Two Bent Lines Above a Ground Plane
S. W. Park, F. Xiao (*University of Electro-Communications, Japan*); *D. C. Park* (*Chungnam National University, Korea*); *Y. Kami* (*University of Electro-Communications, Japan*);

15:30 **Coffee Break**

15:50 Determination of Absorbing Materials' Complex EM-parameters via Scalar Reflectometer
C. P. Chen (*Kanagawa University, Japan*); *Z. W. Ma* (*Saitama University, Japan*); *T. Anada* (*Kanagawa University, Japan*); *J. P. Hsu* (*Kanagawa University, Japan*);

16:10 An Estimating Technique for the Complex Reflection Coefficients of the EM-Wave Absorbers in the Millimeter-Wave Region.
Y. Kogami, A. Yanagisawa (*Utsunomiya University, Japan*);

16:30 Design of Cylindrical Microwave Absorber Using Epoxy Resin Mixed with Micro Balloons and Carbon Short Fibers
T. Doi, Y. Suzuki (*Aoyama Gakuin University, Japan*); *T. Soh* (*The Yokohama Rubber Co.,Ltd, Japan*); *O. Hashimoto* (*Aoyama Gakuin University, Japan*);

Session 1P4
Advances in Detection and Imaging: from Algorithms to Systems and Applications

Wednesday PM, August 2, 2006

Room 6418

Organized by Christian Pichot, Andrea Massa

Chaired by Christian Pichot, Andrea Massa

13:30 Synergistic Exploitation of Divide and Conquer Strategies for Inverse Scattering Problems
M. Benedetti (*University of Trento, Italy*); *D. Franceschini* (*University of Trento, Italy*); *M. Lambert* (*Dpt. Recherche en Electromagntisme - Lab. Signaux Systmes (CNRS-SUPELEC-UPS 11), France*); *D. Lesselier* (*Dpt. Recherche en Electromagntisme - Lab. Signaux Systmes (CNRS-SUPELEC-UPS 11), France*); *A. Massa* (*University of Trento, Italy*);

13:50 Integration of a Fuzzy Logic System with the Contrast Source Inversion Method-A Numerical Validation
A. Casagranda (*, Italy*); *D. Franceschini, A. Massa* (*University of Trento, Italy*); *A. Abubakar* (*Schlumberger-Doll Research, U.S.A.*); *P.M. van den Berg* (*Delft University of Technology, The Netherlands*);

14:10 A Stable and Fast 3-D Imaging Algorithm for UWB Pulse Radars with Fractional Boundary Scattering Transform
T. Sakamoto (*Kyoto University, Japan*); *T. Sato* (*Kyoto University, Japan*);

14:30 Full Newton Method for Electromagnetic Inverse Scattering, Utilizing Explicit Second Order Derivatives
M. Norgren (*Royal Institute of Technology, Sweden*); *T. Takenaka* (*Nagasaki University, Japan*);

14:50 Two Dimensional Reconstruction from Multifrequency Scattering Data by Means of Construction of the Equivalent Current Distribution
K. Ishida (*Kyushu Sangyo University, Japan*); *M. Tateiba* (*Kyushu University, Japan*);

15:10 A Robust and Fast Imaging Algorithm with an Envelope of Circles for UWB Pulse Radars
S. Kidera, T. Sakamoto, T. Sato (*Kyoto University, Japan*);

15:30 **Coffee Break**

15:50 Electromagnetic Inverse Scattering of Cylindrical Objects Using a Multigrid Optimization Method
M. Tanaka (*Oita University, Japan*);

16:10 Real Data Microwave Imaging Using Time Reversal Techniques
V. Chatelee, A. Dubois, I. Aliferis, J. Y. Dauvignac (*Université de Nice, France*); *C. Pichot* (*Université de Nice, France*);

16:30 On Flight Tests of a Millimeter-Wave Radar for Obstacle Detection
B. D. Nguyen, C. Migliaccio (*Universite de Nice, France*); *C. Pichot* (*Universite de Nice, France*); *K. Yamamoto, N. Yonemoto, K. Yamada* (*Electronic Navigation Research Institute, Japan*); *H. Yasui* (*Fundamental Engineering Division IHI Aerospace, Japan*);

16:50 Cramér-Rao Lower Bounds of Time Domain Inverse Scattering Problems of Multilayer Structures
M. Gustafsson (*Lund University, Sweden*); *S. Nordebo* (*Växjö University, Sweden*);

17:10 Theory, Method, Experiments and Conclutions About the Strong and Weak Nuclear Forces in Einstein Theory of Relativity
E. Camps (*Central University of Venezuela, Venezuela*);

Session 1P5
Metamaterials, Nano-Optics, and Nano-Electromagnetism

Wednesday PM, August 2, 2006

Room 6425

Organized by Said Zouhdi, Nader Engheta

Chaired by Said Zouhdi, Nader Engheta

13:30 Subwavelength Imaging in Stratified Photonic Crystal Slab
H. F. Zhang (*Zhejiang University, China*); *L. F. Shen* (*Zhejiang University, China*); *J. T. Huangfu* (*Zhejiang University, China*); *Y. Yuan* (*Zhejiang University, China*); *L. X. Ran* (*Zhejiang University, China*); *J. A. Kong* (*Zhejiang University, China*);

13:50 Theoretical Studies on Meta-materials: Modulations of Super Imaging Oscillations and the Eigenmodes of Metallic Ring Systems
L. Zhou, X. Huang (*Fudan University, China*); *C. T. Chan* (*Hong Kong University of Science and Technology, China*); *S. T. Chui* (*University of Delaware, Delaware*);

14:10 Clustered Dielectric Particle Metamaterials (CDP-MTMs)
C. Caloz (*Ecole Polytechnique, Canada*); *M. Coulombe* (*Ecole Polytechnique de Montreal, Canada*); *Y. Horii* (*Kansai University, Japan*); *A. Rennings* (*Duisburg-Essen University, Germany*);

14:30 Directed Subwavelength Imaging Using a Layered Metal-Dielectric System
B. Wood (*Imperial College London, U.K.*); *J. B. Pendry* (*Imperial College London, U.K.*); *D. P. Tsai* (*National Taiwan University, Taiwan R.O.C.*);

14:50 Optical Imaging Below the Diffraction Limit with a Far-Field Superlens: Theory and Experiment
S. Durant, Z. Liu, H. Lee, Y. Pikus, Y. Xiong, N. Fang, C. Sun, X. Zhang (*University of California, USA*);

15:10 Study of Negative Refraction in Photonic Crystals Including Infinitely Conducting Metal
R. Pierre, Boris Gralak, G. Tayeb (*CNRS, Institut Fresnel, France*);

15:30 **Coffee Break**

15:50 Topological Considerations in the Frequency Response of SRR Loaded Microstrip Line
F. Falcone (*Universidad Publica de Navarra, Spain*);

16:10 All-Dimensional Subwavelength Metamaterial Cavity
H. Li (*Tongji University, China*);

16:30 On the Modeling of Structured Bianisotropic Materials
O. Ouchetto (*Laboratoire de Genie Electrique de Paris LGEP-Supelec, France*); *S. Zouhdi* (*Laboratoire de Genie Electrique de Paris LGEP-Supelec, France*); *B. Miara* (*Laboratoire de Modelisation et Simulation Numerique, France*);

16:50 Highly Directive Antenna Based on Anisotropic Metamaterials
Y. Yuan (*Zhejiang University, China*); *J. T. Huangfu* (*Zhejiang University, China*); *L. F. Shen* (*Zhejiang University, China*); *L. X. Ran* (*Zhejiang University, China*); *J. A. Kong* (*Zhejiang University, China*);

17:10 Negative Refraction of Evanescent Waves Using 5-Fold-Symmetry Structure
Y. Feng (*Xi'an Jiaotong University, China*); *J. Wu* (*China Research Institute of Radiowave Propagation, China*); *J. P. Song* (*Xi'an Jiaotong University, China*);

Session 1P6
Dosimetry of Human-Body Exposure to High-Frequency Electromagnetic Fields II

Wednesday PM, August 2, 2006

Room 6426

Organized by Soichi Watanabe, Teruo Onishi

Chaired by Teruo Oonishi, Niels Kuster, Joe Wiart

13:30 Studies on the Mechanisms of Possible Biological Effects of Radiofrequency Fields
K. R. Foster (*University of Pennsylvania, U.S.A.*);

13:50 Rf Exposure And Compliance Standards
C. K. Chou (*Fort Lauderdale, U.S.A.*); *R. Petersen* (*Associates LLC, U.S.A.*);

14:10 Novel SAR Measurement Method Using Surface Scanned Electric Field
T. Onishi, K. Kiminami, S. Uebayashi (*NTT DoCoMo Inc., Japan*);

14:30 Variation of Measured Maximum Local SARs between Standard-Compatible Measurement Systems (Part 3)
L. Hamada, S. Watanabe (*National Institute of Information and Communications Technology, Japan*); *Y. Miyota, K. Sato* (*NTT Advanced Technology Corporation, Japan*); *T. Iwasaki* (*The University of Electro-Communications, Japan*);

14:50 Study on Dielectric Properties of Phantom Material for SAR Test in a Human Body
A. K. Lee, J. I. Choi, D. U. Sim, H. D. Choi (*Electronics and Telecommunications Research Institute, Korea*);

15:10 SAR Measurement within the Phantom by Thermochromic Liquid Crystal
Y. Suzuki, M. Baba, M. Taki (*Tokyo Metropolitan University, Japan*); *K. Fukunaga, S. Watanabe* (*National Institute of Information and Communications Technology, Japan*);

15:30 **Coffee Break**

15:50 A Precise Electromagnetic Field Estimation in Elevator Considering of Implantable Cardiac Pacemaker EMI From Cellular Radios
L. Harris, A. Simba, T. Hikage, T. Nojima, M. Omiya (*Hokkaido University, Japan*); *S. Watanabe, T. Shinoduka* (*National Institute of Information and Communications Technology, Japan*);

16:10 A Gain Calibration of Antennas in Conducting Medium Using Friis Formula in Fresnel Region
N. Ishii (*Niigata University/National Institute of Information and Communications Technology, Japan*); *T. Akagawa* (*Niigata University, Japan*); *K. Sato* (*NTT Advanced Technology Corporation, Japan*); *L. Hamada, S. Watanabe* (*National Institute of Information and Communications Technology, Japan*);

16:30 Numerical Simulation of Helical Dipole Antenna Using the MoM/FDTD-Hybrid Method
P. Pongpaibool, S. Watanabe (*National Institute of Information and Communications Technology, Japan*); *S. Mochizuki, H. Shirai* (*Chuo University, Japan*); *T. Uno* (*Tokyo University of Agriculture and Technology, Japan*);

16:50 SAR Characteristics of a Human Standing on Low-Loss Ground Plane Exposed to VHF Electromagnetic Plane Wave
S. Watanabe (*National Institute of Information and Communications Technology, Japan*); *K. Arai* (*National Institute of Information and Communications Technology, Japan*); *T.Nagaoka* (*National Institute of Information and Communications Technology, Japan*); *M. Taki* (*Tokyo Metropolitan University, Japan*); *A. Hirata* (*Nagoya Institute of Technology, Japan*); *J. Wang* (*Nagoya Institute of Technology, Japan*); *O. Fujiwara* (*Nagoya Institute of Technology, Japan*); *T. Uno* (*Tokyo University of Agriculture and Technology, Japan*);

17:10 Complex Permittivity Measurement of Blood in Millimeter Wave Band
H. Wakatsuchi (*Aoyama Gakuin University, Japan*); *M. Hanazawa* (*National Institute of Information and Communications Technology, Japan*); *S. Watanabe* (*National Institute of Information and Communications Technology, Japan*); *M. Kouzai* (*Tokyo Institute of Technology, Japan*); *A. Nishikata* (*Tokyo Institute of Technology, Japan*); *O. Hashimoto* (*Aoyama Gakuin University, Japan*);

Session 2A1
Electromagnetic Precursors of Earthquakes

Thursday AM, August 3, 2006

Room 6401

Organized by Masashi Hayakawa

Chaired by Masashi Hayakawa

09:00 Electomagnetic Phenomena Associated with Earthquakes: Review
M. Hayakawa (*The University of Electro-Communications, Japan*);

09:20 The Observation of DC/ULF Emissions at Nakatsugawa, Japan in Possible Association with the Niigata-Chuetsu Earthquake
K. Ohta (*Chubu University, Japan*); *N. Watanabe* (*Chubu University, Japan*); *M. Hayakawa* (*University of Electro-Communications, Japan*);

09:40 Progress in Three-Dimensional FDTD Maxwell's Equations Modeling of Global Impulsive ULF/ELF Propagation
J. J. Simpson (*Northwestern University, U.S.A.*); *A. Taflove* (*Northwestern University, U.S.A.*);

10:00 Wave Propagation Mode of Earth-Origin EM Pulses as a Precursor of Earthquake
M. Tsutsui (*Kyoto Sangyo University, Japan*);

10:20 **Coffee Break**

10:40 Propagation Anomaly of Oversea VHF Waves and Possibility of Relations to Earthquakes
T. Takano, K. Sakai, I. Nagashima, H. Nakata, H. Akaike, S. Ujigawa, A. Hirai, Y. Kawamura, S. Shimakura (*Chiba University, Japan*);

11:00 On Non-Linear Plasma Irregularities in the Ionosphere Due to Electromagnetic Precursory Signals from Earthquake
S. S. De, B. K. Sarkar, B. Bandyopadhyay, A. Guha (*University of Calcutta, India*); *B. K. De* (*Tripura University, India*);

11:20 Anomalous Effect in Schumann Resonance Phenomena Observed in Japan, Possibly Associated with the Earthquakes in Taiwan
M. Hayakawa (*The University of Electro-Communications, Japan*); *K.Ohta* (*Chubu University, Japan*);

Session 2A2
High-Frequency Techniques

Thursday AM, August 3, 2006

Room 6409

Organized by Toyohiko Ishihara

Chaired by Toyohiko Ishihara

9:00 A Ray-launching Estimation For Simple Indoor Wave Propagation Through High Lossy Walls
R. Sato (*Niigata University, Japan*); *H. Sato* (*Niigata University, Japan*); *H. Shirai* (*Chuo University, Japan*);

9:20 Diffraction Coefficients of Composite Wedge Using the Virtual Ray of Diffraction
S. Y. Kim (*Korea Institute of Science and Technology, Korea*);

9:40 High-Frequency Solution for Whispering Gallery Mode Radiation from a Cylindrically Curved Concave Conducting Surface
T. Ajiki, K. Goto, T. Ishihara (*National Defense Academy, Japan*);

10:00 Frequency-Domain and Time-Domain Asymptotic Analyses for Scattered Fields by a Cylindrically Curved Conducting Open Surface with a Varying Radius of Curvature
K. Goto, T. Ajiki, T. Ishihara (*National Defense Academy, Japan*);

10:20 **Coffee Break**

10:40 A Study of Scattering Characteristics using Polygon Meshed PO
N. Lertsirisopon (*Tokyo Institute of Technology, Japan*); *M. Ghoraishi* (*Tokyo Institute of Technology, Japan*); *G. S. Ching* (*Tokyo Institute of Technology, Japan*); *J. Takada* (*Tokyo Institute of Technology, Japan*);

11:00 Symmetric High-Q Inductors Fabricated Using Wafer Level CSP and Novel Q-Factor Definition
Y. Aoki (*Casio Computer Co.,Ltd., Japan*);

11:20 Study of High Fundamental Frequency Crystal-based Voltage Control Oscillator for 10 Gbit Ethernet Application
Y. C. Chen (*Lunghwa University of Science and Technology, Taiwan*);

Session 2A3a
Highly Miniaturized on Chip Passive Components for MMIC/RFIC Applications

Thursday AM, August 3, 2006

Room 6417

Organized by Young Yun

Chaired by Young Yun

09:00 A Highly Miniaturized Broadband On-Chip Impedance Transformer Employing PPGM on GaAs MMIC
Y. Yun (*Korae Maritime University, Korea*); *K. S. Lee, C. R. Kim* (*Korea Maritime University, Korea*);

09:20 Highly Miniaturized and Low impedance On Chip Wilkinson Power Divider Employing Periodically Perforated Ground Metal on MMIC
C. R. Kim (*Korea Maritime University, Korea*); *Y. Yun* (*Korea Maritime University, Korea*);

09:40 3-D 94 GHz Single Balanced Active Mixer using DAML-based Hybrid Ring Coupler
J. K. Rhee, S. C. Kim, D. An, D. H. Shin (*Dongguk University, Korea*);

10:00 Miniaturized Bandpass Filter Design with Periodic Stepped-Impedance Ring Resonators (PSIRRs)
J. T. Kuo (*National Chiao Tung University, Taiwan*); *Y. C. Chiou* (*National Chiao Tung University, Taiwan*);

10:20 **Coffee Break**

Session 2A3b
Innovation in Interconnects Modeling

Thursday AM, August 3, 2006

Room 6417

Organized by Sami Barmada

Chaired by Sami Barmada

10:40 Application of Wavelets in Circuit Modeling and Simulation
X. Zeng (*Fudan University, China*); *D. Zhou* (*Fudan University, China*); *W. Cai* (*University of North Carolina, U.S.A*);

11:00 A Time-domain Approach for Transforming Broadband SPICE-Compatible Models of Power Delivery Networks with Resonance Effect
C. C. Wang (*National Sun Yat-Sen University, Taiwan R. O. C.*); *C. W. Kuo* (*National Sun Yat-Sen University, Taiwan R. O. C.*); *C. C. Kuo* (*National Sun Yat-Sen University, Taiwan R. O. C.*); *J. S. Hsieh* (*National Sun Yat-Sen University, Taiwan R. O. C.*); *T. L. Wu* (*National Taiwan University, Taiwan R. O. C.*);

11:20 New Models for Controlling Signal Dispersion, Attenuation and Total Delay in the Design of Long High Performance Lossy Interconnects
R. H. Flake (*The University of Texas at Austin, U.S.A.*);

11:40 A Quick Parasitics Extraction Tool for IC Interconnections
Y. Yang, G. Wang (*Wuhan University, China*); *J. Xue* (*Fudan University, China*);

12:00 Extraction of Distributed Parameters of Multiple Coupled Transmission Lines from Electromagnetic Simulation Data and Its Application to Evaluation of Inductance Values of RFIC Inductors
J. T. Kuo (*National Chiao Tung University, Taiwan*); *T. Y. Liu* (*National Chiao-Tung University, Taiwan*); *H. H. Chen* (*Huafan University, Taiwan, R.O.C.*); *S. J. Chung* (*National Chiao-Tung University, Taiwan*);

Session 2A4
Terahertz Technology

Thursday AM, August 3, 2006

Room 6418

Organized by Iwao Hosako

Chaired by Iwao Hosako

10:40 Oscillation of Resonant Tunneling Diodes Integrated with Slot Antennas in the Terahertz Range
M. Asada (*Tokyo Institute of Technology, Japan*);

11:00 Terahertz Label-Free Biochip Sensors with Thin Metal Mesh
Y. Ogawa, S. Hayashi (*Tohoku University, Japan*); *E. Kato* (*Advantest Laboratories Ltd., Japan*); *H. Yoshida* (*Tohoku University, Japan*); *F. Miyamaru, C. Otani* (*Institute of Physical and Chemical Research (RIKEN), Japan*); *K. Kawase* (*Nagoya University, Japan*);

11:20 Compact Terahertz Time Domain Spectroscopy System with 1.5-μm-Wavelength Femtosecond-Fiber-Laser
M. Suzuki (*Osaka University, Japan*); *M. Tonouchi* (*Osaka University, Japan*);

11:40 A Newly Designed High-Performance Submillimeter-Wave Horn Antenna
M. Matsunaga (*Ehime University, Japan*); *T. Matsunaga* (*Fukuoka Institute of Technology, Japan*);

10:20 **Coffee Break**

Session 2A5
Numerical and Analytical Technologies of Photonic Devices I

Thursday AM, August 3, 2006

Room 6425

Organized by Mitsuhiro Yokota, Hung-chun Chang

Chaired by Mitsuhiro Yokota, Hung-chun Chang

09:00 Modelling of Er-Yb Codoped Glass Waveguide Amplifiers
E. Y. B. Pun, K. Liu (*City University of Hong Kong, China*);

09:20 Efficient Implementation of the Implicit FDTD Method Using the Locally One-Dimensional Scheme
J. Shibayama, R. Takahashi, J. Yamauchi, H. Nakano (*Hosei University, Japan*);

09:40 Numerical Study of the Dielectric Waveguide Termination With a Tilted Facet
C. M. Wang, H. W. Chang (*National Sun Yat-sen University, Taiwan*);

10:00 A Novel Formulation of the Fourier Series Expansion Method for Dielectric Waveguides Based on Periodic Fourier Transform
K. Watanabe (*Fukuoka Institute of Technology, Japan*);

10:20 **Coffee Break**

10:40 Scattering of EM Wave by a Cylindrical Periodic Array Using Moment Method
I. Satou, M. Yokota (*University of Miyazaki, Japan*);

11:00 Design of the DC Block with Defected Ground Structure
S. H. Choi, K. H. Park (*Korea Electronics Technology Institute, Korea*);

11:20 Novel Wide-Angle Three-Dimensional BPM Based on the Alternating-Direction Implicit Method
J. Shibayama, T. Takahashi, J. Yamauchi, H. Nakano (*Hosei University, Japan*);

11:40 Polarisation Issues in Photonic Wires for Biosensing Applications
S. T. Lim (*Institute of High Performance Computing, A-star, Singapore*); *C. E. Png* (*Institute of High Performance Computing, A-star, Singapore*);

12:00 Vectorial Modal Analysis of 2-D Dielectric Waveguides with Simple Orthogonal Bases
R. G. Yang, H. W. Chang (*National Sun Yat-sen University, Taiwan*);

Session 2P1a
Polarimetric Radar Remote Sensing

Thursday PM, August 3, 2006

Room 6401

Organized by Jian Yang, Yoshio Yamaguchi

Chaired by Jian Yang, Yoshio Yamaguchi

13:30 A New FM-CW Pol-InSAR System for Laboratory Measurement
M. Ikarashi (*Niigata University, Japan*); *K. Aoyama* (*Niigata University, Japan*); *J. Nakamura* (*Niigata University, Japan*); *Y. Yamaguchi* (*Niigata University, Japan*); *H. Yamada* (*Niigata University, Japan*);

13:50 Laboratory Measurements by a Fully Polarimetric FM-CW SAR in the Ku-Band
M. Ikarashi (*Niigata University, Japan*); *J. Nakamura* (*Niigata University, Japan*); *K. Aoyama* (*Niigata University, Japan*); *Y. Yamaguchi* (*Niigata University, Japan*); *H. Yamada* (*Niigata University, Japan*);

14:10 Investigation on Seasonal Change of Water Area in Lake Sakata Based on POLSAR Image Analysis
R. Sato, Y. Yajima, Y. Yamaguchi, H. Yamada (*Niigata University, Japan*);

14:30 Target Enhancement Oriented Fusion Method using Polarimetric SAR Data
Y. Chen (*Tsinghua University, China*); *J. Yang* (*Tsinghua University, China*);

14:50 Novel Target Decomposition Method based on Polarimetric Signatures
Y. Chen (*Tsinghua University, China*); *J. Yang* (*Tsinghua University, China*);

15:10 Optimization of Weather Data Quality and Radar Scan Rate Using Phased-Array Radar
T. Y. Yu (*School of Meteorology, University of Oklahoma, U.S.A.*); *M. B. Orescanin* (*University of Oklahoma, U.S.A.*); *C. D. Curtis* (*NOAA National Severe Storms Laboratory, U.S.A.*); *D. S. Zrnić, Douglas E. Forsyth* (*NOAA National Severe Storms Laboratory, U.S.A.*);

15:30 **Coffee Break**

Session 2P1b
Subsurface/GPR

Thursday PM, August 3, 2006

Room 6401

Organized by Motoyuki Sato

Chaired by Motoyuki Sato

15:50 Measured Complex Permittivity of Borehole Cores Using Open-Ended Coaxial Probe
J. H. Jung, S. Y. Kim (*Korea Institute of Science and Technology, Korea*);

16:10 GPR with an Electronically Steered Footprint
A. G. Yarovoy (*Delft University of Technology, The Netherlands*); *P. Aubry* (*Delft University of Technology, The Netherlands*); *M. Tanigawa* (*Delft University of Technology, The Netherlands*); *A. J Boonstra* (*Delft University of Technology, The Netherlands*); *W. V. Cappellen* (*Delft University of Technology, The Netherlands*); *H. J. Boer* (*Delft University of Technology, The Netherlands*); *L. P. Ligthart* (*Delft University of Technology, The Netherlands*);

16:30 Design, Implementation and Calibration of Low Cost 1-2 GHz Step Frequency GPR for Metal Object Detection Under the Ground
J. Suryana (*STEI ITB, Indonesia*); *A. B. Suksmono, Sugihartono, A. Kurniawan* (*STEI ITB, Indonesia*); *K. Tanaka, K. Igarashi* (*NICT, Japan*); *M. Iida* (*ARIB, Japan*);

16:50 An Algorithm for 3-D Imaging of Subsurface Fractures in Directional Borehole Radar
T. Takayama, M. Sato (*Tohoku University, Japan*);

17:10 Simultaneous Estimation of the Position and Radius of a Reinforcing Bar and the Dielectric Constant of Concrete
Y. Mayumi, T. Tanaka, T. Takenaka (*Nagasaki University, Japan*);

17:30 A Simple Inversion Technique of Cross-Hole Data for Location of Buried Pipes
K. Takahashi, M. Sato (*Tohoku University, Japan*);

17:50 Localization of the Investigation Domain in Electromagnetic Imaging of Buried 2-D Dielectric Pipelines with Circular Cross Section
V. Thomas, C. Gopakumar, J. Yohannan, A. Lonappan, G. Bindu, K. T. Mathew (*Cochin University of Science and Technology, India*);

Session 2P2
Earth-Space Propagation

Thursday PM, August 3, 2006

Room 6409

Organized by Yasuyuki Maekawa

Chaired by Yasuyuki Maekawa, Max van de Kamp

13:10 Rain Attenuation Characteristics in Fixed Wireless Access at 32 GHz
H. Sawada (*National Institute of Information and Communications Technology, Japan*); *K. Hamaguchi* (*National Institute of Information and Communications Technology, Japan*); *H. Ogawa* (*National Institute of Information and Communications Technology, Japan*);

13:30 Construction of Rain Attenuation Predictive Model at FWA and Ka Band Satellite Communications
R. Saotome, T. Miyazato, S. Tamaki (*University of the Ryukyus, Japan*);

13:50 A Proposal of Modified Lavergnat-Gole Model for Global Conversion of Different Integration Time Rain Rates
C. Ito, Y. Hosoya (*Kitami Institute of Technology, Japan*);

14:10 Propagation Characteristics of FM Broadcasting Waves at the Mid Niigata Prefecture Earthquake
S. Takahashi (*Hiroshima City University, Japan*); *M. Kobayashi* (*Hiroshima City University, Japan*); *A. Kaneda* (*Hiroshima City University, Japan*); *M. Nishi* (*Hiroshima City University, Japan*); *T. Yoshida* (*Hiroshima City University, Japan*);

14:30 Ground Wave Propagation over Mixed-Paths Including Tropospheric Ducting Effect
T. Kawano, T. Ishihara (*National Defense Academy, Japan*);

14:50 Study on the Propagation Environment Evaluation for the Land Mobile Satellite link Using GPS
W. Abidin (*Kyushu University, Japan*); *W. Abidin* (*Kyushu University, Japan*); *K. Fujisaki* (*Kyushu University, Japan*); *M. Tateiba* (*Kyushu University, Japan*);

15:10 The Electromagnetic Fields of a Vertical Electric Dipole in the Presence of a Large Stratified Sphere
T. Fei, L. W. Li, T. S. Yeo (*National University of Singapore, Singapore*); *Q. Wu* (*Harbin Institute of Technology, China*);

15:30 **Coffee Break**

15:50 Relationship between Raindrop Size Distribution and Cross Polarization Discrimination of the Ka-band Satellite Communications Link
H. Nishio, Y. Maekawa (*Osaka Electro-Communication University, Japan*);

16:10 Rain Attenuation Characteristics in a 1-Hour-Rainfall Event
F. Minematsu, Y. Suzuki, K. Imai, K. Shogen (*Wireless Systems,NHK Science and Technical Research Laboratories, Japan*);

16:30 Derivation of a conditional distribution of fade-slope by the analysis of absolute slope
F. F. Fondjo, K. Fujisaki, M. Tateiba (*Kyushu University, Japan*); *T. Matsuoka* (*Kyushu Sangyo University, Japan*);

16:50 The Two-Sample Model: Short-term Prediction of Rain Attenuation
M. V. D. Kamp (*University of Bath, United Kingdom*);

17:10 Rain Attenuation Characteristics of Up and Down Link Radio Waves of Ku-band Satellite Communications Observed in Japan and Indonesia
Y. Maekawa, S. Tsujuno (*Osaka Electro-Communication University, Japan*); *Y. Shibagaki* (*Osaka Electro-Communication University, Japan*); *T. Sato, M. Yamamoto, H. Hashiguchi, S. Fukao* (*Kyoto University, Japan*);

17:30 Diurnal and Seasonal Variations of Cloud and Water Vapor in the Troposphere
Q. W. Pan (*Manukau Institute of Technology, New Zealand*); *J. E. Allnutt* (*George Mason University, USA*); *C. Tsui* (*Manukau Institute of Technology, New Zealand*);

17:50 Characterization of Rainfall Rate, Ku-Band Rain Attenuation and Tropospheric Scintillation at Indonesian Tropical Cities
J. Suryana, U. Sastrokusumo (*Institute of Technology Bandung (ITB), Indonesia*); *K. Tanaka, K. Igarashi* (*National Institute of Information and Communications Technology (NICT), Japan*); *M. Iida* (*Association of Radio Industries and Businesses (ARIB), Japan*);

Session 2P3
Medical Applications

Thursday PM, August 3, 2006

Room 6417

Organized by Koichi Ito, Youji Kotsuka

Chaired by Koichi Ito, Youji Kotsuka

13:30 Complex Noninvasive Optical Scanning of Superficial Human Tissues in Examination of Patients with Vibration Disease
V. V. Tchernyi (*Russian Academy of Science, Russia*); *D. A. Rogatkin* (*Moscow Regional Research & Clinical Institute "MONIKI", Russia*); *R. V. Gorenkov* (*Moscow Regional Research & Clinical Institute "MONIKI", Russia*); *V. N. Karpov* (*Moscow Regional Research & Clinical Institute "MONIKI", Russia*); *P. N. Lubchenko* (*Moscow Regional Research & Clinical Institute "MONIKI", Russia*); *V. I. Shumskiy* (*Moscow Regional Research & Clinical Institute "MONIKI", Russia*);

13:50 Clinical Trials of the Interstitial Microwave Hyperthermia by Coaxial-Slot Antennas
K. Saito, S. Kikuchi, M. Takahashi, K. Ito (*Chiba University, Japan*); *Y. Aoyagi, H. Horita* (*Tokyo Dental College, Japan*);

14:10 Heating Characteristics of a Coaxial-Slot Antenna with Endoscope for Intracavitary Microwave Hyperthermia Aiming at the Bile Duct Carcinoma by Use of a Realistic Human Calculation Model
A. Hiroe (*Chiba University, Japan*); *K. Saito* (*Chiba University, Japan*); *M. Takahashi* (*Chiba University, Japan*); *K. Ito* (*Chiba University, Japan*);

14:30 Preliminary Assessment of Electromagnetic Absorption in the Breast for Cylindrical Microwave Breast Cancer Detection Systems
J. E. Johnson (*Nagasaki University, Japan*); *T. Takenaka* (*Nagasaki University, Japan*);

14:50 Experimental Test System to Assess the EMI from RFID Reader/Writer on Implantable Cardiac Pacemaker
S. Futatsumori (*Hokkaido University, Japan*); *T. Kono* (*Hokkaido University, Japan*); *T. Hikage* (*Hokkaido University, Japan*); *T. Nojima* (*Hokkaido University, Japan*); *B. Koike* (*Japan Automatic Identification Systems Association, Japan*);

15:10 Microwave Applicator for Local Thermotherapy
J. Vrba, T. Drizdal, R. Zajicek, L.Oppl, J.Vrba (jr.) (*Czech Technical University, Czech Republic*); *J.Kubes* (*Institute of Radiation Oncology, Czech Republic*); *J.Kvech* (*Radiation Oncology Dept., Czech Republic*);

15:30 **Coffee Break**

15:50 Intracavitary Applicator for Thermotherapy and Imaging
J. Vrba (*Czech Technical University, Czech Republic*); *M. Bolmsjö* (*University of Lund, Sweden*); *R. Hlavac, J.Vrba (jr.), L.Oppl* (*Czech Technical University, Czech Republic*);

16:10 Application of the Wavelets to the Study of the Human Sleep Slow Oscillation
S. Barmada, A. Gemignani, A. Landi, D. Menicucci (*University of Pisa, Italy*);

16:30 Investigations on the Characteristics of Eddy Current Absorber in Inductive Implant Heating
H. Kayahara (*Tokai University, Japan*); *Y. Kotsuka* (*Tokai University, Japan*);

16:50 Bounds for Power Deposition in Phantoms
B. Derat (*SAGEM, France*); *J. C. Bolomey* (*Paris XI University, France*);

Session 2P4
Advanced Computational Techniques and the Application for Microwave Devices

Thursday PM, August 3, 2006

Room 6418

Organized by Michiko Kuroda

Chaired by Michiko Kuroda, Manos Tentzeris

13:10 Three-dimensional Numerical Analysis of Light-Beam Scattering from DWDD Disk Model
Y. Irifune, M. Miyake, T. Kojima (*Kansai University, Japan*);

13:30 Dual-Pol Dual-Band Antenna Arrays In "Flexible" Liquid Crystal Polymer (LCP) Technology Using RF MEMS
A. N. Traille (*Cobb County Research Facility, U.S.A.*); *M. M. Tentzeris* (*Georgia Electronic Design Center, U.S.A.*);

13:50 The Modeling Technique of RF MEMS Structures with Transient Behavior
H. Iwamatsu, M. Kuroda (*Tokyo University of Technology, Japan*);

14:10 Numerical Technique for the Analysis of 2D MEMS Structure by Using Overset Grid Generation
N. Hanim (*Tokyo University of Technology, Japan*); *B. Piao* (*The University of Electro-Communications, Japan*); *M. Kuroda* (*Tokyo University of Technology, Japan*); *S. Kuroda* (*The University of Electro-Communications, Japan*);

14:30 Efficient Time Domain Calculation of Coupling Coefficient Between Two Resonators
I. Awai, T. Ishida, Y. Zhang (*Ryukoku University, Japan*);

14:50 A Rigorous Stability Analysis of Instability in ADI-FDTD Method with PML Absorber
J. N. Hwang, F. C. Chen (*National Chiao Tung University, Taiwan*);

15:10 Modelling Microwave Fixtures with the Genetic Algorithm
A. Adalev (*The University of Electro-Communications, Japan*); *M. Hayakawa* (*The University of Electro-Communications, Japan*); *N. V. Korovkin* (*Saint-Petersburg State Polytechnical University, Russia*); *J. B. Nitsch* (*Otto-von-Guericke University, Germany*);

15:30 **Coffee Break**

15:50 Expression of Radiating Wave from 2D Objects by Using a Series of Cylindrical Functions
K. Motojima (*Gunma University, Japan*);

16:10 Preconditioned Parallel MLFMA Solution of Metamaterial Structures
L. Gürel, Ö. Ergül, T. Malas, A. Ünal (*Bilkent University, Turkey*);

16:30 Multiport Network Method and Using It for Accurate Design of Spiral Antennas and Comparing Simulated Results with Experimental Results
S. Rajebi, C. Ghobadi, J. Nourinia (*Urmia University, Iran*);

16:50 Leakage Fields in Patch Antennas and Modeling It with Multiport Network Model
S. Rajebi (*Urmia University, Iran*); *C. Ghobadi* (*Urmia University, Iran*); *J.Nourinia* (*Urmia University, Iran*);

17:10 New Approach Using Universal Autonamous Blocks with Floket Channels for Rigourous Mathematical Modeling of Microwave Devices
G. S. Makeeva (*Penza State University, Russia*); *O. A. Golovanov* (*Penza Military Institute of Artillery, Russia*); *M. P. Horvath* (*The George Washington University, U.S.A.*);

17:30 Mesh of Various Propagation Models to Use in the Conception of a Proposed Wireless System: Application in the City of Curritiba - Brazil
H. Tertuliano, M. A. Betinipereira, C. A. Dartora (*Federal University of Parana, Brazil*);

17:50 Numerical Analysis of an Optical Near Field From an Aperture In a Metallic Layer -Application of the FDTD Method Combined with the Motion Equation of Ectron-
S. Kagawa (*Kansai University, Japan*); *Y. He* (*Osaka Electro-Communication University, Japan*); *T. Kojima* (*Kansai University, Japan*);

Session 2P5
Numerical and Analytical Technologies of Photonic Devices II

Thursday PM, August 3, 2006

Room 6425

Organized by Mitsuhiro Yokota, Hung-chun Chang

Chaired by Kiyotoshi Yasumoto, Lindsay C. Botten

13:30 Large-mode-Area Single-Mode Holey Fiber with Low Bending Losses
Y. Tsuchida, K. Saitoh, M. Koshiba (*Hokkaido University, Japan*);

13:50 Full-Vectorial Pseudospectral Frequency-Domain Method for Optical Waveguide Analysis
H. C. Chang (*University of Miyazaki, Japan*); *P. J. Chiang* (*National Taiwan University, Taiwan R.O.C.*);

14:10 A Domain Decomposition Method for Photonic Crystal Modeling
Y. Huang, Y. Y. Lu (*City University of Hong Kong, China*);

14:30 Supermodes of Coupled Photonic Crystal Waveguides: a Tight Binding Analysis
L. C. Botten (*University of Technology, Australia*); *C. M. de Sterke, R. A. Hansen* (*University of Sydney, Australia*);

14:50 Enhancement of Nonreciprocal Phase Shifts Through the Utilization of Large Group-Velocity Dispersion in Magneto-Photonic Crystal Waveguides
N. Kono, M. Koshiba (*Hokkaido University, Japan*);

15:10 All-Optical Logic Device by Photonic Crystal Directional Coupler with Kerr- Type Nonliner Material
X. Li, H. Maeda, K. Uchida (*Fukuoka Institute of Technology, Japan*);

15:30 **Coffee Break**

15:50 Efficient, Low Reflection Coupling into Rod-Type Photonic Crystals
L. C. Botten (*University of Technology, Australia*); *T. P. White* (*University of Sydney, Australia*); *C. M. de Sterke* (*University of Sydney, Australia*); *R. C. McPhedran* (*University of Sydney, Australia*);

16:10 Analysis of Electromagnetic Radiation from a Source Embedded in Photonic Crystals
K. Yasumoto, V. Jandieri, H. Toyama (*Kyushu University, Japan*);

16:30 Analysis of Two-Dimensional Photonic Crystal Branching Waveguide with Microcavity
Y. Naka, H. Ikuno (*Kumamoto University, Japan*);

16:50 Optical Characterization of Planar Photonic Crystal Resonant Cavities with Elliptically-Elongated Veins
N. J. Florous, K. Saitoh, M. Koshiba (*Hokkaido University, Japan*);

17:10 Calculation of the Green's Function in Presence of Three-Dimensional Photonic Structures
B. Gralak (*CNRS, Institut Fresnel, France*);

Session 2P6
Electromagnetic and Optical Wave Technologies for Communications and Sensing

Thursday PM, August 3, 2006

Room 6426

Organized by Yasumitsu Miyazaki, Manabu Kagami

Chaired by Yasumitsu Miyazaki, Manabu Kagami

13:30 On Position and Attitude Determination in Bistatic SAR
S. Knedlik (*University of Siegen, Germany*);

13:50 Transmission Characteristics of UART-CSMA/CD Control Network with One-chip Microcontroller and RS485 Driver IC
C. Ninagawa, K. Yokohama, F. Aoi, H. Otake (*Mitsubishi Heavy Industries, Ltd., Japan*); *Y. Miyazaki* (*Aichi University of Technology, Japan*);

14:10 A Reconfigurable Quadri-Polarization Diversity Aperture Coupling Patch Antenna
Y. F. Wu, C. H. Wu, D. Y. Lai, F. C. Chen (*National Chiao Tung University, Taiwan*);

14:30 Bi-Directional Optical Transceiver Module Fabricated by 3-D Polymer Optical Waveguides for Visible-WDM Plastic Optical Fiber Communication
M. Kagami, M. Yonemura, A. Kawasaki, S. Kato (*Toyota Central R&D Labs., Inc., Japan*); *Y. Inui* (*Toyoda Gosei co., Ltd., Japan*);

14:50 Code Recognition Chracteristics in Optical Label Matching with Integrated-Optic Collinear Acoustooptic Devices
N. Goto (*Toyohashi University of Technology, Japan*); *Y. Miyazaki* (*Aichi University of Technology, Japan*);

15:10 Stub-Loaded Ridge Waveguides for Frequency-Scanning Antenna Application
M. Tsuji, H. Deguchi (*Doshisha University, Japan*);

15:30 **Coffee Break**

15:50 Theoretical Analysis of Propagation characteristics in Medium Waves tTransmission from the Top of the Mountain
Y. Norimatsu (*Nankai Broadcasting Ltd., Japan*); *K. Ono* (*Ehime University, Japan*); *M. Matsunaga* (*Ehime University, Japan*);

16:10 Performance Limitations in CATV Networks Employing WDM System Due to Optical Fiber Nonlinearities
R. Balasubramanian (*Synclayer, Inc., Japan*); *Y. Miyazaki* (*Aichi University of Technology, Japan*); *M. Kondo* (*Synclayer, Inc., Japan*);

16:30 Electromagnetic Analysis of Circular Waveguides for Tera Hertz Transmission Using Conformal Mapping
Y. Miyazaki (*Aichi University of Technology, Japan*);

16:50 Long-Pulse Tunable Micro-Rod Yb:YAG Laser for Sensing Applications
R. Bhandari (*SUNX Limited, Japan*); *T. Kamiya* (*SUNX Limited, Japan*); *T. Taira* (*Institute for Molecular Science, Japan*);

17:10 Radiation Characteristics of Meander Line Antennas with Planar Coupled Parasitic Meander Elements for RFID Tags
K. Taki (*Brother Industries, Ltd., Japan*); *Y. Miyazaki* (*Aichi University of Technology, Japan*);

Session 3A1
Microwave Phenomena on Superconductors I

Friday AM, August 4, 2006

Room 6401

Organized by Tamio Endo, Masashi Mukaida, Atsutaka Maeda

Chaired by Isao Watanabe, Yasunori Mawatari

09:00 Pulsed Tera-hertz Radition from Femto-second Laser Excited Superconductive $YBa_2Cu_3O_7$ Antenna
S. S. Pai, C. C. Chi (*National Tsing Hua University, Taiwan*);

09:20 Theoretical Approach to Circular Polarization Dependence of Microwave-Induced Photoconductivity
T. K. Ng, S. Wang (*Hong Kong University of Science and Technology, China*);

09:40 Critical Fluctuations in Superconducting $La_{2-x}Sr_xCuO_4$ Thin Films Studied by Frequency-dependent Microwave Conductivity
T. Ohashi, H. Kitano (*University of Tokyo, Japan*); *A. Maeda* (*University of Tokyo, Japan*); *I. Tsukada* (*Central Research Institute of Electrical Power Industry, Japan*);

10:00 Precise Measurement of Frequency-Dependent Complex Conductivity of Superconducting Thin Film near Tc
H. Kitano, T. Ohashi (*University of Tokyo, Japan*); *A. Maeda* (*University of Tokyo, Japan*);

10:20 **Coffee Break**

10:40 Cu-Spin Dynamics in La2-xSrxCuO4 Probed by Zero-Field Muon Spin Relaxation
I. Watanabe (*RIKEN, Japan*); *T. Adachi* (*Tohoku University, Japan*); *Y. Koike* (*Tohoku University, Japan*);

11:00 Microwave Properties on $H_i - T_c$ Superconductors
T. Endo, H. Zhu, A. K. Sarkar, A. Akiba, A. Kamiya, H. O-oka, T. Morimoto (*Mie University, Japan*);

11:20 Temperature Dependence of Microwave Absorption in Bi2212 Single Crystals
H. Ooka (*Mie University, Japan*); *A. K. Sarkar* (*Mie University, Japan*); *A. Kamiya* (*Mie University, Japan*); *K. Nakanishi* (*Mie University, Japan*); *T. Endo* (*Mie University, Japan*); *M. Shahabuddin* (*University of Jamia Millia Islamia, India*);

11:40 Microwave Power Dependence of Microwave Absorption in Bi2212 Single Crystals
T. Morimoto, A. K. Sarkar, A. Akiba, A. Nishio, T. Endo (*Mie University, Japan*); *M. Shahabuddin* (*University of Jamia Millia Islamia, India*);

Session 3A2
Wave Scattering, Random Media and Wireless Communications I

Friday AM, August 4, 2006

Room 6409

Organized by Rachid Talhi

Chaired by Rachid Talhi

09:00 An Antenna Array Approach for Propagation of Electromagnetic Waves in Different Media
António E. M. S. Casimiro (*University of Algarve, Portugal*);

09:20 Propagation Characteristics on a Wet Road for a Inter-Vehicle Communication
A. Yamamoto (*Matsushita Electric Industrial Co., Ltd., Japan*); *K. Sato* (*National Institute of Information and Communications Technology, Japan*); *H. Kida* (*JRC Ltd., Japan*); *K. Ogawa* (*Matsushita Electric Industrial Co., Ltd., Japan*); *M. Fujise* (*National Institute of Information and Communications Technology, Japan*); *T. Horimatsu* (*Fujitsu Ltd., Japan*);

09:40 Wave Propagation Phenomena in Troposphere Over the Indian Subcontinent
S. K. Sarkar (*National Physical Laboratory, India*);

10:00 The Bistatic Radar Cross-Section of a Large Size Body Embedded in a Random Medium
Z. Q. Meng (*Fukuoka University, Japan*); *M. Tateiba* (*Kyushu University, Japan*);

10:20 **Coffee Break**

10:40 Effective Medium and Radiative Transfer Equation
G. Berginc (*Thales Optronique, rue Guynemer, France*);

11:00 Electromagnetic Wave Scattering From a 3-Dimensional Random Media Bounded With Rough Surfaces : Green Functions Formalism
G. Berginc (*Thales Optronique, rue Guynemer, France*);

11:20 The Geometrically Based Single Bounce Multi-ellipse Model for Indoor LOS Multi-Polarized Channel
H. Moon (*Yonsei University, Korea*); *S. Kwon* (*Yonsei University, Korea*); *B. Lee* (*Yonsei University, Korea*); *J. Seok* (*Ministry of Information and Communication Radio Research Laboratory, Korea*); *C. Mun* (*Chungju National University, Korea*); *Y. Joong Yoon* (*Yonsei University, Korea*);

11:40 Properties of Metallic Photonic Band Gap Materials with Defects at Microwave Frequencies: Calculation, Experimental Verification and Application in Wireless Communications
S. Massaoudi (*Universite Paris-Sud, France*); *A. de Lustrac* (*Universite Paris-Sud, France*); *I. Huynen* (*Universite Catholique de Louvain, Belgium*); *R. Talhi* (*CNRS-LPCE and University of Tours, France*);

12:00 Wave Reflection and Transmission from a Two-dimensional Random Slab
Y. Tamura, J. Nakayama (*Kyoto Institute of Technology, Japan*);

Session 3A3
Periodic Structures I

Friday AM, August 4, 2006

Room 6417

Organized by Yoichi Okuno, Tsuneki Yamasaki

Chaired by Yoichi Okuno, Tsuneki Yamasaki

09:00 Analysis of Thin Sinusoidal Metallic Gratings in Conical Diffraction
H. Wakabayashi, J. Yamakita (*Okayama Prefectural University, Japan*);

09:20 The Effect of Veins on the Complete Bandgaps in Two-Dimensional Photonic Crystals: Mie Scattering Meohanism
T. J. Yang (*National Chiao-Tung University, Taiwan R. O. C.*); *W. L. Liu* (*National Chiao-Tung University, Taiwan R. O. C.*); *B. Y. Gu* (*Chinese Acadamy of Sciences, China*);

09:40 The Diffraction Efficiencies by Multilayer-Coated Fouried Grationgs in Conical Mounting
M. Ohki (*Shonan Institute of Technology, Japan*); *K. Sato* (*Shonan Institute of Technology, Japan*); *H. Sakurai* (*Gunma College of Technology, Japan*); *S. Kozaki* (*Gunma University, Japan*);

10:00 Precise Method for Analysis of Scattering Problem by an Imperfection of Finite Extent in a Plane Surface
M.Tomita, T.Sakashita, Y.Karasawa (*University of Electro-Communications, Japan*);

10:20 **Coffee Break**

10:40 Propagation Properties of Lightwave in Two-Dimensional Photonic Crystal Waveguide with Microcavity
K. Takamiya, N. Ohtsuka, M. Yokota (*University of Miyazaki, Japan*);

11:00 Band Structures of Phononic Crystals with Damping Effects
Y. H. Liu (*Academia Sinica, Taiwan R.O.C.*); *Chien C. Chang* (*Academia Sinica, Taiwan R.O.C.*); *R. L. Chern* (*National Taiwan University, ROC*);

11:20 Exact calculation of the nonlinear optical response of one-dimensional photonic bandgap structures
K. Kim, D. K. Phung, F. Rotermund, H. Lim (*Ajou University, Korea*);

11:40 An Analysis of the Transfer Matrix Method on Band Structure of One Dimension Graded-Index Photonic
I. C. Tsai, J. J. Wu (*Chung Hua University, Taiwan R.O.C*); *T. J. Yang* (*National Chiao-TUng University, Taiwan R. O. C.*);

12:00 Propagation Characteristics of Multilayered Circular Dielectric Gratings in Inhomogeneous Media with Loaded the Rectangular Dielectric Constants
R. Ozaki, T. Yamasaki, T. Hinata (*Nihon University, Japan*);

Session 3A4
Plasmonic Nanophotonics I

Friday AM, August 4, 2006

Room 6418

Organized by Din Ping Tsai

Chaired by Din Ping Tsai

09:00 Characteristics of Coupled Wedge Plasmonic Waveguides
M. Fukui, M. Haraguchi, D. F. P. Pile, T. Okamoto (*The University of Tokushima, Japan*); *D. K. Gramotnev* (*Queensland University of Technology, Australia*);

09:20 Plasmonic Crystals as Cathodes of Organic Light Emitting Devices
T. Okamoto, J. Feng (*RIKEN, Japan*); *S. Kawata* (*Osaka University, Japan*);

09:40 Complex-Shaped Three-Dimensional Electromagnetic Micro-Nanostructures
H. B. Sun (*Jilin University, China*); *S. Kawata* (*Osaka University, Japan*);

10:00 Experimental and Numerical Study of Plasma Resonant Light Scattering and Absorption from Nanospheres
H. Tamaru, K. Miyano (*The University of Tokyo, Japan*);

10:20 **Coffee Break**

10:40 Surface Plasmon Excitations due to Evanescent Waves of Molecular Luminescence and Emission Light from Plasmons
F. Kaneko, Y. Ohdaira, K. Shinbo, K. Kato (*Niigata University, Japan*);

11:00 Coherent Near-Field Investigation of Plasmonic Structures
A. Nesci (*Nanophotonics and Metrology Laboratory (NAM), Switzerland*); *O. J. F. Martin* (*Swiss Federal Institute of Technololgy (EPFL), Switzerland*);

11:20 Plasmonic Enhanced Raman Spectroscopy for Nanoscale Characterizations of Molecular Vibrations
N. Hayazawa (*RIKEN,, Japan*); *Y. Saito, M. Motohashi* (*RIKEN, Japan*); *S. Kawata* (*Osaka University, Japan*);

11:40 Plasmon Absorption Properties of Au/Polymer Nanocomposites: Dependence of Size and Shape
X. M. Duan (*Chinese Academy of Sciences, China*); *M. Umemoto* (*Osaka University, Japan*); *W. Q. Chen, Y. Y. Cao* (*Chinese Academy of Sciences, China*);

12:00 Plasmonic Resonance Modes on Au Nanoparticles
H. J. Huang, Y. H. Fu (*National Taiwan University, Taiwan R.O.C.*); *H. P. Chiang* (*National Taiwan Ocean University, Taiwan R.O.C.*); *D. P. Tsai* (*National Taiwan University, Taiwan R.O.C.*);

Session 3A5
Light Modulation Technology

Friday AM, August 4, 2006

Room 6425

Organized by Tetsuya Kawanishi

Chaired by Tetsuya Kawanishi

09:00 High-Speed Optical Switching by PLZT Waveguides on Semiconductors
K. Nashimoto, N. Tanaka, M. LaBuda, D. Ritums, J. Dawley, M. Raj, D. Kudzuma, T. Vo, J. Fang (*Nozomi Photonics Co., Ltd., U.S.A.*);

09:20 Property of Resonant Electrode of Coupled Microstrip Lines for Guided-Wave EO modulator
A. Enokihara (*Matsushita Electric Industrial Co., Ltd., Japan*); *H. Yajima* (*Matsushita Electric Industrial Co., Ltd., Japan*); *H. Murata* (*Osaka University, Japan*); *Y. Okamura* (*Osaka University, Japan*);

09:40 Ring Resonator-Based Electro-Optic Polymer Modulator and Its Linearity
H. Tazawa (*University of Southern California, U.S.A.*); *Y. H. Kuo* (*University of Southern California, U.S.A.*); *W. H. Steier* (*University of Southern California, U.S.A.*); *B. Bortnik* (*University of California, U.S.A.*); *Y. C. Hung* (*University of California, U.S.A.*); *I. Dunayevskiy* (*University of California, U.S.A.*); *H. R. Fetterman* (*University of California, U.S.A.*); *J. Luo* (*University of Washington, U.S.A.*); *A. K. Y. Jen* (*University of Washington, U.S.A.*);

10:00 Resonant Type $LiNbO_3$ Optical Modulator Array with Micro Strip Antennas
S. Shinada (*National Institute of Information and Communications Technology (NICT), Japan*); *T. Kawanishi* (*National Institute of Information and Communications Technology (NICT), Japan*); *M. Izutsu* (*National Institute of Information and Communications Technology (NICT), Japan*);

10:20 **Coffee Break**

10:40 Broadband Antenna Measurement with Optical Fiber Link System
S. Kurokawa (*National Institute of Advanced Industrial Science and Technology, Japan*); *M. Hirose* (*National Institute of Advanced Industrial Science and Technology, Japan*); *K. Komiyama* (*National Institute of Advanced Industrial Science and Technology, Japan*);

11:00 Antenna Absolute Gain and Pattern Measurements Using Photonic Sensor and Compact Spherical Near-Field Scanner
M. Hirose, S. Kurokawa, K. Komiyama (*National Institute of Advanced Industrial Science and Technology, Japan*);

11:20 Resonant-Electrode-Type Optoelectronic Oscillator (RE-OEO) as a Single-Mode Oscillator
T. Sakamoto (*National Institute of Information and Communications Technology (NICT), Japan*); *T. Kawanishi, M. Izutsu* (*National Institute of Information and Communications Technology (NICT), Japan*);

11:40 A Study on Dispersion Tolerance of 10Gbit/s $LiNbO_3$ Mach-Zehnder Modulator
T. Fujita (*Sumitomo Osaka Cement Co., Ltd., Japan*); *S. Oikawa* (*Sumitomo Osaka Cement Co., Ltd., Japan*);

12:00 Variable Frequency Shifting of a Continuous Light Wave Based on Multistage Phase Modulation
S. Hisatake (*Osaka University, Japan*); *T. Kobayashi* (*Osaka University, Japan*);

Session 3A6
SAR/Polarimetry

Friday AM, August 4, 2006

Room 6426

Organized by Motoyuki Sato

Chaired by Motoyuki Sato

10:40 ESPRIT-based Pol-InSAR Technique with Scattering Model Decomposition Preprocessing for Forest Analysis
H. Yamada (*Niigata University, Japan*); *M. Yamazaki* (*Niigata University, Japan*); *Y. Yamaguchi* (*Niigata University, Japan*);

11:00 Polarization Orientation Angle Analysis of Pol-SAR Using Multiple Flight Paths Dataset
K. Iribe (*Tohoku University, Japan*); *M. Sato* (*Tohoku University, Japan*);

11:20 Modified Range Migration Algorithm for Airborne Squint Mode Spotlight SAR Data Procession
H. S. Shin (*Korea Advanced Institute of Science and Technology, Korea*); *J. T. Lim* (*Korea Advanced Institute of Science and Technology, Korea*);

11:40 Phase Unwrapping by Spreading Phase Singularity in Airbone Interferogram
R. Yamaki (*The Univirsity of Tokyo, Japan*); *A. Hirose* (*The University of Tokyo, Japan*);

12:00 Evaluation of the Scattering Characteristics of Trihedral Corner Reflector for Polarimetric SAR Calibration
S. Kusano (*Tohoku University, Japan*); *M. Sato* (*Tohoku University, Japan*);

Session 3A7
Novel Mathematical Methods in Electromagnetics I

Friday AM, August 4, 2006

Room 6302

Organized by Yury Shestopalov, Kazuya Kobayashi

Chaired by Yury Shestopalov, Alexander B. Samokhin

9:00 Domain Decomposition Method for Conformal Modules Applied to the Design of On-Chip Passives in CMOS
J. X. Zhao (*China Jiliang University, China*);

9:20 Solving Stiff Inverse Problems Using Linear Relations Between Transient Characteristics
A. Adalev (*The University of Electro-Communications, Japan*); *M. Hayakawa* (*The University of Electro-Communications, Japan*); *N. V. Korovkin* (*Saint-Petersburg State Polytechnical University, Russia*);

9:40 Analysis of Coupling between Two Rectangular Waveguides with a Common Flange
H. Serizawa (*Numazu National College of Technology, Japan*); *K. Hongo* (*Toho University, Japan*);

10:00 Singular Volume Integral Equations for Non-Stationary Problems of Electromagnetics in Three-Dimensional Material Media
A. B. Samokhin (*Moscow Institute of Radio Engineering, Russia*);

10:20 **Coffee Break**

10:40 Interfacial Operator for Computing Band Structures of Polaritonic Crystals
R. L. Chern (*National Taiwan University, Taiwan R.O.C.*); *Chien C. Chang* (*Academia Sinica, Taiwan R.O.C.*); *C. Chung Chang* (*Academia Sinica, Taiwan R.O.C.*);

11:00 Advances in Mathematical Methods for Electromagnetics: Nonlinear Problems and Nonselfadjoint Operator Theory (A Review)
Y. Shestopalov (*Karlstad University, Sweden*);

11:20 Theoretical Analysis of Volume Integral Equation Method and Subhierarchal Parallel Algorithm for Solving Electromagnetic Diffraction Problem on a Dielectric Body in a Layer
Y. G. Smirnov (*Penza State University, Russia*);

11:40 An Analysis of Characteristic Impedance of LPDA Feeder
F. Zhang, X. Y. Du, D. F. Zhou, Z. X. Niu (*Information Engineering University, China*);

12:00 Resonant Scattering by Layered Dielectric Structure with Weakly Kerr-Like Nonlinearity
V. V. Yatsyk (*Nat. Acad. of Sci. of Ukraine, Ukraine*);

Session 3P1
Microwave Phenomena on Superconductors II

Friday PM, August 4, 2006

Room 6401

Organized by Tamio Endo, Masashi Mukaida, Atsutaka Maeda

Chaired by Isao Watanabe, Yasunori Mawatari

13:30 High-Jc Processing for YBCO Thick Films by TFA-MOD Method
R. Teranishi, N. Mori, K. Yamada, M. Mukaida, Y. Shingai (*Kyushu University, Japan*); *J. Matsuda, K. Nakaoka, T. Izumi, Y. Shiohara* (*Superconductivity Research Laboratory-ISTEC, Japan*);

13:50 Effect of 0-D Artificial Pinning Centers on Surface Resistance of Er123 Films
M. Mukaida (*Kyushu University, Japan*); *A. Saito* (*Yamagata University, Japan*); *R. Kita* (*Shizuoka University, Japan*); *T. Horide* (*Kyoto University, Japan*); *K. Matsumoto* (*Kyoto University, Japan*); *A. Ichinose* (*CRIEPI, Japan*); *Y. Yoshida* (*Nagoya University, Japan*); *S. Horii* (*University of Tokyo, Japan*); *R. Teranishi* (*Kyushu University, Japan*); *K. Yamada* (*Kyushu University, Japan*); *N. Mori* (*Kyushu University, Japan*);

14:10 Microwave Properties of Superconducting Magnesium Diboride Thin Films: Effects of Disorder
G. Ghigo (*Politecnico di Torino, Department of Physics, Italy*); *D. Andreone* (*Istituto Nazionale di Ricerca Metrologica, Italy*); *R. Gerbaldo, L. Gozzelino, F. Laviano, B. Minetti* (*Politecnico di Torino, Department of Physics, Italy*); *E. Monticone* (*Istituto Nazionale di Ricerca Metrologica, Italy*); *G. Ummarino, E. Mezzetti* (*Politecnico di Torino, Department of Physics, Italy*);

14:30 Peculiarities of the Microwave Conductivity of High-Tc Single Crystals with Different Doping Levels
M. R. Trunin (*Institute of Solid State Physics RAS, Russia*);

14:50 Novel High-Precision Technique of the Microwave Spectroscopy of Solids in Strong Magnetic Fields
Y. A. Nefyodov, A. F. Shevchun, A. M. Shuvaev, M. R. Trunin (*Institute of Solid State Physics RAS, Russia*); *V. N. Egorov, V. L. Masalov* (*East-Siberian Research Institute of Physico-Technical and Radioengineering Measurements, Russia*);

15:10 Field Sweep-rate Dependence of Microwave Absorption in a-Oriented YBCO Superconductors
A. Akiba, H. Zhu, T. Endo (*Mie University, Japan*); *M. Mukaida* (*Kyushu University, Japan*);

15:30 Microwave Absorption in Superconducting/Ferromagnetic YBCO/LCMO Superlattice
H. Zhu (*Mie University, Japan*); *A. Akiba* (*Mie University, Japan*); *T. Endo* (*Mie University, Japan*); *J. Santamaria* (*Universidad Complutense de Madrid, Spain*); *A. Hoffmann* (*Argonne National Laboratory, U.S.A.*);

Session 3P2
Wave Scattering, Random Media and Wireless Communications II

Friday PM, August 4, 2006

Room 6409

Organized by Rachid Talhi

Chaired by Rachid Talhi

13:30 Scattering of TM Plane wave from periodic grating with single Defect
K. Hattori (*Kyoto Institute of Technology, Japan*); *J. Nakayama* (*Kyoto Institute of Technology, Japan*);

13:50 Determination of Optical Properties of Rectangular Parallelepiped Highly Scattering Media
J. Taniguchi (*Osaka University, Japan*); *H. Murata* (*Osaka University, Japan*); *Y. Okamura* (*Osaka University, Japan*);

14:10 Numerical and Experimental Investigations of a Tropical Outdoor UWB Channel Characteristics for Short Pulse Transmission
J. Suryana (*STEI ITB, Indonesia*); *A. B. Suksmono, Sugihartono, A. Kurniawan* (*STEI ITB, Indonesia*); *K. Tanaka, K. Igarashi* (*NICT, Japan*); *M. Iida* (*ARIB, Japan*);

14:30 Frequency Extrapolation in Terrestrial Microwave Propagation Simulations
M. Grabner, V. Kvicera (*TESTCOM, Czech Republic*);

14:50 Some Issues in Probabilistic Interpretation of Polarized Wave Scattering in a Random Medium
R. Talhi (*University of Tours and C.N.R.S, France*); *A. Lebrere* (*University of Tours and C.N.R.S, France*); *M. Dabernat* (*University of Tours and C.N.R.S, France*); *S. Massaoudi* (*Catholic University of Louvain, belgium*);

15:10 Integrated Gytrotropic Feed Network for Microstrip Phased Array Antennas
S. I. Sheikh (*K. F. University of Petroleum and Minerals (KFUPM), Saudi Arabia*);

15:30 **Coffee Break**

15:50 Cavity Antenna with Partly Transparent Apertures for Wireless Communications
N. I. Voytovich (*Southern Ural State University, Russia*); *A. V. Ershov* (*Southern Ural State University, Russia*); *N. N. Repin* (*Open Corporation, Russia*); *A. N. Sokolov* (*Chelyabinsk State University, Russia*);

16:10 A Study on Relative Backscattering Coefficients of Sea Surfaces in Satellite Altimetry
K. Fukuda, K. Fujisaki, M. Tateiba (*Kyushu University, Japan*);

16:30 Soil Multi-Scale Roughness Parameters and Soil Moisture Retrieval from Radar Backscattering Using a Neural Network Technique
L. B. Farah (*Ecole Nationale d Ingenieurs de Tunis.Le Belvedere, Tunisie*); *I. R. Farah* (*Ecole Nationale des sciences de l informatique, Tunisie*); *R. Bennaceur* (*Faculte des Sciences de Tunis, Tunisie*); *Z. Belhadj* (*Ecole Nationale d Ingenieurs de Tunis, Tunisie*); *R. Boussema* (*Ecole Nationale d Ingenieurs de Tunis, Tunisie*);

Session 3P3
Periodic Structures II

Friday PM, August 4, 2006

Room 6417

Organized by Yoichi Okuno, Tsuneki Yamasaki

Chaired by Yoichi Okuno, Tsuneki Yamasaki

13:30 Formation of the Light Localization in a Disordered Waveguide System
A. Komiyama (*Osaka Electro-Communication University, Japan*);

13:50 Radiation Characteristics of a Finite Periodic Slot Array in a Parallel Plate Waveguide Filled with a Transversely Magnetized Ferrite
K. Nishimura (*Ryukoku Univesrsity, Japan*);

14:10 A hybrid Trefftz element solution to plane wave scattering problems of multilayered gratings
K. Hasegawa, S. Sato (*Muroran Institute of Technology, Japan*);

14:30 Mode Analysis of Coupled Cavity Waveguides Consisting of Dielectric Rectangular-Rods
H. T. Jia (*Kyushu University, Japan*); *K. Yasumoto* (*Kyushu University, Japan*);

14:50 Scattering of Electromagnetic Waves by Inhomogeneous Dielectric Gratings Loaded with Three Perfectly Conducting Strips
T. Yamasaki, T. Ujiie, T. Hinata (*Nihon University, Japan*);

15:10 Characteristics of Poly-Silane Optical Waveguides with Long Periodic Grating
S. Watanabe (*Osaka University, Japan*); *H. Murata* (*Osaka University, Japan*); *Y. Okamura* (*Osaka University, Japan*);

15:30 **Coffee Break**

15:50 Experimental Evaluation of EM Wave Suppressions by Lattice Array of Conductive Wires.
A. Saito (*Tohoku Gakuin University, Japan*); *T. Saito* (*Tohoku Gakuin University, Japan*); *K. Aizawa* (*Tohoku Gakuin University, Japan*); *H. Echigo* (*Tohoku Gakuin University, Japan*);

16:10 Scattering of TM Wave from Conductive Rough Surface: Low Grazing Limit of Incidence
J. Nakayama (*Kyoto Institute of Technology, Japan*); *K. Hattori* (*Kyoto Institute of Technology, Japan*); *Y. Tamura* (*Kyoto Institute of Technology, Japan*);

16:30 Parameter Optimization of Wavelength Selective Gratings Using Genetic Algorithm
K. Higa (*Fukuoka Institute of Technology, Japan*); *K. Watanabe* (*Fukuoka Institute of Technology, Japan*);

Session 3P4
Plasmonic Nanophotonics II

Friday PM, August 4, 2006

Room 6418

Organized by Din Ping Tsai

Chaired by H. B. Sun

13:30 Holographic lithography and Defect Engineering for Photonic Crystals
H. B. Sun (*Jilin University, China*); *S. Shoji, S. Kawata* (*Osaka University, Japan*);

13:50 Plasmonic Metamaterials and Its Application to Novel Optical Devices in the Visible Light Frequency Region
T. Tanaka, A. Ishikawa (*RIKEN, Japan*); *S. Kawata* (*Osaka University, Japan*);

14:10 Simulation Study of Optical Properties for Metallic Nanoparticle Ring
Y. C. Lan (*National Cheng Kung University, Taiwan R. O. C.*); *W. L. Chen* (*National Cheng Kung University, Taiwan R. O. C.*); *L. Y. Wang* (*National Cheng Kung University, Taiwan R. O. C.*);

14:30 Plasmonic Imaging: a Novel Function of Metallic Nanostructures
J. Kato (*RIKEN, Japan*); *A. Ono* (*RIKEN, Japan*); *S. Kawata* (*Osaka University, Japan*);

14:50 Dynamics of Enhance-Transmitted Light Beam Through Sub-Wavelength Slit
K. R. Chen (*National Cheng Kung University, Taiwan*); *J. Y. Lai* (*National Cheng Kung University, Taiwan*); *T. H. Tsai* (*National Cheng Kung University, Taiwan*); *J. S. Hong* (*National Cheng Kung University, Taiwan*);

15:10 Plasmonic Nanorod Array for Optical Nanoimaging
A. Ono (*RIKEN, Japan*); *J. Kato* (*RIKEN, Japan*); *S. Kawata* (*Osaka University, Japan*);

15:30 **Coffee Break**

15:50 Perturbative Behavior of Surface plasmon Modes
W. C. Liu (*National Taiwan Normail University, Taiwan R. O. C.*);

16:10 Theoretical Analysis of Volume Integral Equation Method and Subhierarchal Parallel Algorithm for Solving Electromagnetic Diffraction Problem on a Dielectric Body in a Layer
Y. G. Smirnov (*Penza State University, Russia*);

16:30 The Quantum Yield of a Metallic Nanostructure of Dimer
J. W. Liaw (*Chang Gung University, Taiwan*);

16:50 Local-Field Enhancement in Open Cavities of Metallic Nanocylinder Pairs
M. Y. Ng (*National Taiwan Normail University, Taiwan*); *W. C. Liu* (*National Taiwan Normail University, Taiwan*);

Session 3P5
Recent Trends on Microwave Application Technologies

Friday PM, August 4, 2006

Room 6425

Organized by Yoshio Nikawa

Chaired by Yoshio Nikawa

13:30 Five-Band Microwave Radiometer System For Non-Invasive Measurement of Deep Brain Temperatures In Newborn Infants : First Phantom Measurement Study
T. Sugiura, S. Hoshino, Y. Sawayama, H. Hirata, S. Mizushina (*Shizuoka University, Japan*);

13:50 The Design of Multi-Beam Smart Antenna Arrays for Long Range RFID System
T. Y. Shih, C. C. Chang, S. F. Chang (*National Chung Cheng University, Taiwan R. O. C.*);

14:10 Design of Planar Antenna For Glottal Motion Sensor
J. C. Lin, C. C. Chang, S. F. Chang (*National Chung Cheng University, Taiwan R. O. C.*);

14:30 Study of Appropriate Number of Receivers in Microwave Radiometry Based on the Change of Tissue Electric Constants
Y. Sawayama, S. Hoshino, H. Hirata, M. Kimura, T. Sugiura (*Shizuoka University, Japan*);

14:50 A Compact Multi-Transmission-Zero Bandpass Filter Using Three-Coupled-Line Resonators for UWB-OFDM Systems
W. C. Lo (*National Chung Cheng University, Taiwan R. O. C.*); *Y. M. Chen, C. C. Chang, S. F. Chang* (*National Chung Cheng University, Taiwan R. O. C.*);

15:10 A CMOS Fully-Differential Programmable Gain Amplifier for MBOA-UWB System
M. D. Wei, S. F, Chang, C. C. Chang (*National Chung Cheng University, Taiwan R. O. C.*);

15:30 **Coffee Break**

15:50 Non-Invasive Measurement of Blood Sugar Level in Millimeter Wave Using Resonant Applicator
Y. Nikawa (*Kokushikan University, Japan*);

16:10 Rapid Variations in Atmospheric Refractivity Revealed by an S-Band Phased Array Weather Radar
B. L. Cheong, R. D. Palmer (*University of Oklahoma, U.S.A.*); *T. Y. Yu* (*School of Meteorology, University of Oklahoma, U.S.A.*); *C. D. Curtis* (*National Severe Storms Laboratory, NOAA, U.S.A.*);

16:30 Refractivity Retrieval Using X-Band Radars: Mitigation of Rapid Phase Wrapping
R. D. Palmer, B. L. Cheong (*University of Oklahoma, U.S.A.*);

16:50 Design and Evaluation of System for Microwave Drying of Textile
J. Vrba, M. Pourová, O. Žák, J. Vrba (jr.) (*Czech Technical University, Czech Republic*);

Session 3P6
Metamaterial and New Material Applications to EMC

Friday PM, August 4, 2006

Room 6426

Organized by Kenichi Hatakeyama, Youji Kotsuka

Chaired by Kenichi Hatakeyama

13:30 Complex Permeability Spectra of Ferromagnetic Metal Composite Materials and EMC Applications
T. Kasagi (*Beppu Mizobe Gakuen College, Japan*); *T. Tsutaoka* (*Hiroshima University, Japan*); *K. Hatakeyama* (*University of Hyogo, Japan*);

13:50 Permeability Spectra of Substituted Barium Ferrite BaFe12-x(Ti0.5Co0.5)xO19 in Microwave Frequencies and its Use as EMC Devices
T. Tsutaoka, N. Koga (*Hiroshima University, Japan*); *T. Kasagi* (*Beppu Mizobe Gakuen College, Japan*); *K. Hatakeyama* (*University of Hyogo, Japan*);

14:10 Frequency Selective Shielding Screen By The use Of Artificial Media
T. Iwai, K. Hatakeyama (*University of Hyogo, Japan*);

14:30 Study of EM Wave Shielding of Conductive Array Sheet with Ferromagnetic Metal Composite Layer
S. Yamamoto (*University of Hyogo, Japan*); *K. Hasegawa* (*University of Hyogo, Japan*); *K. Hatakeyama* (*University of Hyogo, Japan*);

14:50 Broadband EM-Wave Absorber Characteristics Using IC-based Metamaterial
C. Kawamurra (*Tokai University, Japan*); *Y. Kotsuka* (*Tokai University, Japan*);

15:10 Effect of Porosity on Magnetic and Electric Properties of Mg-Zn Ferrites
B. K. Bammannavar (*Karnatak University, Dharwad*); *L. R. Naik* (*Karnatak University, Dharwad*); *R. B. Pujar* (*S. S. Arts College, India*);

15:30 **Coffee Break**

15:50 A Sequential Short-Circuited Patches Antenna with Parasitic Elements
P. Y. Lau (*City University of Hong Kong, China*); *H. Wong* (*City University of Hong Kong, China*); *E. K.N Yung* (*City University of Hong Kong, China*);

16:10 Suppression of Electromagnetic Radiation Noise from Wireless Module in Millimeter-Wave Band by Using Lid Made of PPS Resin Containing Titanium Oxide
Y. Takase (*Aoyama Gakuin University, Japan*); *T. Soh* (*The Yokohama Rubber Co.,Ltd, Japan*); *O. Hashimoto* (*Aoyama Gakuin University, Japan*);

16:30 EMC Simulations by the Finite-Difference Time-Domain Method with the Surface Impedance Boundary Condition
J. H. Lin (*National Taiwan Ocean University, Taiwan R.O.C.*); *W. C. Chen* (*National Taiwan Ocean University, Taiwan R.O.C.*);

16:50 Mitigation of 16 2/3 Hz Magnetic Fields Originated from a Railway System Using Scaling Rules and 3D-Propagation of Eddy Currents
E. Salinas (*London South Bank University, UK*); *J. Atalaya, Y. Hamnerius* (*Chalmers University of Technology, Sweden*); *D. G. Chávez, C. Contreras, C. L. Chinchay, M. A. Sumari* (*Universidad Nacional de Ingeniería*, Perú); *M. Rezinkina* (*Polytechnic University, Ukraine*);

Session 3P7a
Novel Mathematical Methods in Electromagnetics II

Friday PM, August 4, 2006

Room 6302

Organized by Yury Shestopalov, Kazuya Kobayashi

Chaired by Yury Shestopalov, Kazuya Kobayashi

13:30 An exploration about possibly levitating magnets using nonvertical configurations
J. N. Ho (*University of Washington, U.S.A.*); *W. C. Wang* (*University of Washington, U.S.A.*);

13:50 Mollifier and a Boundary Integral Equation on an Open Boundary-I. A Case of a Three Dimensional Scattering
Y. Hayashi (*Tokyo, Japan*);

14:10 Mollifier and a Boundary Integral Equation on an Open Boundary-II. A Case of a Two Dimensional Scattering
Y. Hayashi (*Tokyo, Japan*);

14:30 Investigation of Electromagnetic Diffraction by a Dielectric Body Using the Volume Singular Integral Equations
A. Tsupak (*Penza State University, Russia*);

14:50 The Lateral Displacement of a Gaussian Beam at an Anisotropic-Isotropic Dielectric Interface
H. Sakurai (*Gunma College of Technology, Japan*); *M. Ohki* (*Shonan Institute of Technology, Japan*); *S. Kozaki* (*Gunma University, Japan*);

15:10 Numerical Simulation of Ultrasonic Guide Waves Propagation in Architectural Structures
Sami Barmada (*University of Pisa, Italy*); *A. Musolino* (*University of Pisa, Italy*); *M. Raugi* (*University of Pisa, Italy*); *F. Turcu* (*University of Pisa, Italy*);

15:30 **Coffee Break**

Session 3P7b
Statistical Analysis of Remotely Sensed Data

Friday PM, August 4, 2006

Room 6302

Organized by Kazuo Ouchi, Ryuei Nishii

Chaired by Kazuo Ouchi, Shojiro Tanaka

15:50 Detection of Aircraft Embedded in Ground Clutter
S. G. Hwang (*National Defense Academy, Japan*); *S. Sayama* (*National Defense Academy, Japan*); *S. Ishii* (*National Defense Academy, Japan*); *M. Sekine* (*National Defense Academy, Japan*);

16:10 Amplitude Statistics of Sea Clutter Observed by an X-Band Radar Analyzed by MDL Principle
S. Sayama (*National Defense Academy, Japan*); *S. Ishii* (*National Defense Academy, Japan*); *M. Sekine* (*National Defense Academy, Japan*);

16:30 Statistical Analysis of Airborne SAR Images over a Forest Region
S. Fukuda, S. Nakamura (*Japan Exploration Agency(ISAS/JAXA), Japan*); *Shohei Nakamura* (*Japan Exploration Agency(ISAS/JAXA), Japan*);

16:50 Biomass Estimation Algorithm of Coniferous Forests Based on Statistical Texture Analysis Approach of High-Resolution Polarimetric SAR Data and Its Evaluation
H. Wang, K. Ouchi (*Kochi University of Technology, Japan*); *M. Watanabe, M. Shimada* (*Japan Aerospace Exploration Agency/Earth Observation Research and Application Center, Japan*);

17:10 Statistical Deforestation Models Due to Human Population and Relief Energy in East Asia
S. Tanaka (*Shimane University, Japan*); *R. Nishii* (*Kyushu University, Japan*);

Session 3P8
Poster

Friday PM, August 4, 2006
Room 6301
Organized by Kazuya Kobayashi, Tsuneki Ymasaki
Chaired by Kazuya Kobayashi, Tsuneki Yamasaki

1 Designs of 1/8-Wavelength Shorted-Patch Antennas in Multilayered Structures
H. H. Chen (*Huafan University, Taiwan, R. O. C*); *S. H. Lee* (*Huafan University, Taiwan, R. O. C*); *C. F. Liu* (*Huafan University, Taiwan, R. O. C*); *C. C. Yeh* (*Huafan University, Taiwan, R. O. C*); *R. C. Hsieh* (*Huafan University, Taiwan, R. O. C*); *Y. H. Chou* (*Huafan University, Taiwan, R. O. C*);

2 Bandwidth Enhancement of a Microstrip Antenna with a Loaded Chip-Resistor
C. Y. Huang (*National Kaohsiung Normal University, Taiwan*); *P. Y. Chiu* (*National Kaohsiung Normal University, Taiwan*); *C. C. Lin* (*National Kaohsiung Normal University, Taiwan*);

3 Design and Fabrication of a Novel V-band Tapered Slot Antenna
N. W. Chen (*National Central University, Taiwan*); *C. T. Chuang* (*National Central University, Taiwan*);

4 Dual-Broadband Y-Shaped Monopole Antenna with Shorted Strip-Sleeves
H. M. Hsiao (*National Kaohsiung Marine University, Taiwan R. O. C.*); *J. H. Lu* (*National Kaohsiung Marine University, Taiwan R. O. C.*); *J. W. Wu* (*National Kaohsiung Marine University, Taiwan R. O. C.*);

5 Investigation of CPW-fed Triangular-ring Slot Antennas and Triangular-ring Slot Coupled Patch Antennas
J. S. Chen, W. F. Chang (*Cheng shiu University, Taiwan R. O. C.*);

6 CPW-Fed Notched Annular-Ring Slot Antenna for Suppression of Harmonic Mode
Y. F. Lin (*National Kaohsiung University of Applied Sciences, Taiwan R.O.C.*); *H. M. Chen* (*National Kaohsiung University of Applied Sciences, Taiwan R.O.C.*);

7 Compact Folded Monopole Antennas
C. Y. Huang, P. Y. Chiu, C. C. Lin (*National Kaohsiung Normal University, Taiwan*);

8 A Miniaturized Phased Array Aperture Antenna Based On Bulk Ferroelectric Material
L. Peng (*Zhejiang University, China*); *J. T. Huangfu* (*Zhejiang University, China*); *L. X. Ran* (*Zhejiang University, China*); *Y. Y. K. Zou* (*Boston Applied Technologies Inc., U.S.A.*); *J. A. Kong* (*Zhejiang University, China*);

9 The Effective Permittivity of Metal Rod Arrays In Thz Band
S. Xi (*Zhejiang University, China*); *L. F. Shen* (*Zhejiang University, China*); *J. T. Huangfu* (*Zhejiang University, China*); *L. X. Ran* (*Zhejiang University, China*); *J. A. Kong* (*Zhejiang University, China*);

10 Multi-Frequency Resonator Based on Dual Bands S Shaped Left-handed Material
D. X. Wang (*Zhejiang University, China*); *J. T. Huangfu* (*Zhejiang University, China*); *L. X. Ran* (*Zhejiang University, China*); *B. I. Wu* (*Massachusetts Institute of Technology, USA*); *T. M. Grzegorczyk* (*Zhejiang University, China*); *H. S. Chen* (*Zhejiang University, China*); *J. A. Kong* (*Zhejiang University, China*);

11 Experimental Realization of A Wide-band Backward Coupling Waveguide Coupler Using Left-handed Material
J. J. Zhang (*Zhejiang University, China*); *J. T. Huangfu* (*Zhejiang University, China*); *H. S. Chen* (*Zhejiang University, China*); *L. X. Ran* (*Zhejiang University, China*); *J. A. Kong* (*Zhejiang University, China*);

12 A Miniaturized Microstrip Dual-Mode Filter for Spurious Suppression
C. J. Wang (*Feng-Chia University, Taiwan*); *S. Y. Chen* (*Feng-Chia University, Taiwan*); *Z. C. Ker* (*Feng-Chia University, Taiwan*);

13 Near-field Scanning Dielectric Probe Millimeter-wave Microscopy
E. Kume (*National Institute of Advanced Industrial Science and Technology, Japan*); *S. Sakai* (*National Institute of Advanced Industrial Science and Technology, Japan*);

14 Electromagnetic Scattering of Three-Dimensional Objects Solved by Parallel Generalized Method of Moments with Multilevel Fast Multipole Algorithm
J. H. Lin, K. J. Wu, I. H. Huang (*National Taiwan Ocean University, Taiwan R.O.C*);

15 Inverse Scattering by Local Shape Function with Total Variation Method
J. H. Lin (*National Taiwan Ocean University, Taiwan*); *B. H. Pong* (*National Taiwan Ocean University, Taiwan*);

16 Dual Patch Butterfly Shape Stacked Structure Wide Band CP Microstrip Antenna.
H. C. Lien (*Wu Feng Institute of Technology, Taiwan R. O. C.*); *H. C. Tsai* (,);

17 Using Nonlinear Universal Blocks with Floket Channels for Accurate Electromagnetic Modeling of Nonlinear Microwave Semiconductor and Ferrite Devices
G. S. Makeeva (*Penza State University, Russia*); *O. A. Golovanov* (*Penza Military Institute of Artillery, Russia*); *M. P. Horvath* (*The George Washington University, U.S.A.*);

18 Design of the Miniaturized Noise Suppression Filters Using Multilayer Inductors
Y. H. Chou (*Huafan University, Taiwan, R.O.C.*); *J. L. Lai* (*HuaFan University, Taiwan R. O. C.*); *C. C. Yeh* (*Huafan University, Taiwan, R.O.C.*); *H. H. Chen* (*Huafan University, Taiwan, R.O.C.*); *R. C. Hsieh* (*Huafan University, Taiwan, R.O.C.*);

19 Algorithmic System for Identifying Bird Radio-Echo and Plotting Radar Ornithological Charts
L. Dinevich (*Tel-Aviv University, Israel*); *Y. Leshem* (*Tel-Aviv University, Israel*);

20 Resonant Scattering by Layered Dielectric Structure with Weakly Kerr-Like Nonlinearity
V. V. Yatsyk (*Nat. Acad. of Sci. of Ukraine, Ukraine*);

21 Analysis of Current Density Distribution Induced by ELF Magnetic Fields Utilizing Fast-Multipole Surface-Charge-Simulation Method for Voxel Data
S. Hamada, T. Kobayashi (*Kyoto University, Japan*);

22 An Analysis of the Transfer Matrix Method on Band Structure of One Dimension Graded-Index Photonic
I. C. Tsai, J. J. Wu (*Chung Hua University, Taiwan R.O.C*); *T. J. Yang* (*National Chiao-TUng University, Taiwan R. O. C.*);

23 Cavity Antenna with Partly Transparent Apertures for Wireless Communications
N. I. Voytovich (*Southern Ural State University, Russia*); *A. V. Ershov* (*Southern Ural State University, Russia*); *N. N. Repin* (*Open Corporation, Russia*); *A. N. Sokolov* (*Chelyabinsk State University, Russia*);

24 Improvement of Surface Resistance Property of $ErBa_2Cu_3O_7$- Films with $BaTiO_3$
Y. Shingai (*Kyushu University, Japan*); *M. Mukaida* (*Kyushu University, Japan*); *R. Teranishi* (*Kyushu University, Japan*); *K. Yamada* (*Kyushu University, Japan*); *N. Mori* (*Kyushu University, Japan*); *A. Ichinose* (*CRIEPI, Japan*); *R. Kita* (*Shizuoka University, Japan*); *S. Horii* (*University of Tokyo, Japan*); *Y. Yoshida* (*Nagoya University, Japan*); *K. Matsumoto* (*Kyoto University, Japan*); *T. Abe* (*Yamagata University, Japan*); *A. Saito* (*Yamagata University, Japan*);

Session 4A1
Numerical Techniques I

Saturday AM, August 5, 2006

Room 6401

Organized by Tsuneki Yamasaki, Yoichi Okuno

Chaired by Tsuneki Yamasaki, Yoichi Okuno

09:00 Sine Transform Based Preconditioner for the FDFD Method Inside a Parallel Plate Waveguide
A. Chabory, B. P. de Hon, A. G. Tijhuis (*Eindhoven University of Technology, The Netherlands*);

09:20 Total-Field/Scattered-Field Boundary Condition for CIP Method
Y. Ando, M. Hayakawa (*The University of Electro-Communication, Japan*);

09:40 A Study of Topology Optimization for Built-in Antenna Loaded with Magnetic Material
A. Matsuzaki, H. Morishita (*National Defense Academy, Japan*); *T. Nomura, K. Sato* (*Toyota Central R&D Labs., Nagakute, Japan*); *K. Taguchi, T. Kashiwa* (*Kitami Institute of Technology, Japan*);

10:00 A Low Cost Hybrid FDTD Algorithm to Compute Optical Propagation in Dispersive Media
J. B. Cole, S. Banerjee, T. Plewe (*University of Tsukuba, Japan*);

10:20 **Coffee Break**

10:40 Numerical Characteristics of Integro-Difference Time-Domain (IDTD) Method
S. T. Chun, M. Kragalott, R. S. Schechter (*Naval Research Laboratory, U.S.A.*);

11:00 Fast MoM Calculation With/Without Magnetic Boundary Condition
K. Takei, M. Ikegaya (*Hitachi Cable Ltd., Japan*);

11:20 Multiple Region Finite-Difference Time-Domain Simulation Accelerated by Plane-Wave Time-Domain Techniques
J. H. Lin (*National Taiwan Ocean University, Taiwan*); *G. J. Mon* (*Acrosser Technology Co., San Chung, Taiwan*); *S. G. Lin* (*Quanta Computer Inc., Kuei Shan Hsiang, Taiwan*); *M. Y. Lu* (*, Taiwan*);

11:40 Radiation-Pattern Synthesis Based on Quadratic Programming for Multimode Circular Horns
H. Deguchi, M. Tsuji (*Doshisha University, Japan*);

12:00 Numerical Analysis of an Elliptical Core Optical Fiber with Arbitrary refractive Index Profile
S. Furukawa (*Sano College, Japan*); *T. Hinata* (*Nihon University, Japan*); *N. Shimizu* (*Nippon Light Co.,Ltd., Japan*); *W. Satou* (*Nihon University, Japan*);

Session 4A2
Induced Current in a Human Body by ELF/Intermediate Electric or Magnetic Fields

Saturday AM, August 5, 2006

Room 6409

Organized by Tadasu Takuma

Chaired by Tadasu Takuma

09:00 Simple Dosimetry for Human Exposure to Non-Uniform ELF Magnetic Field
K. Yamazaki (*Central Research Institute of Electric Power Industry, Japan*); *T. Kawamoto* (*Central Research Institute of Electric Power Industry, Japan*); *T. Shigemitsu* (*Central Research Institute of Electric Power Industry, Japan*);

09:20 Calculation of Induced Current Inside a Human Body near an IH Cooker by SPFD Method
Y. Kamimura, K. Ito, Y. Yamada (*Utsunomiya University, Japan*);

09:40 Analysis of Induced Electric Field within Eccentric Multi-Layered Sphere
Y. Suzuki, M. Taki (*Tokyo Metropolitan University, Japan*);

10:00 Analysis of Current Density Distribution Induced by ELF Magnetic Fields Utilizing Fast-Multipole Surface-Charge-Simulation Method for Voxel Data
S. Hamada, T. Kobayashi (*Kyoto University, Japan*);

10:20 **Coffee Break**

10:40 Induced Currents in Realistic Japanese Models Due to Power-Frequency Electric Fields
A. Hirata, O. Fujiwara (*Nagoya Institute of Technology, Japan*);

11:00 Electric and Magnetic Field Distributions along High Voltage Power Lines
Q. W. Pan (*Manukau Institute of Technology, New Zealand*);

11:20 A Transfer Function Method for Determination of MRI Heating of an Implanted Medical Lead Wire
S.M. Park, R. Kamondetdacha, A. Amjad, J. Nyenhuis (*Purdue University, U.S.A.*);

Session 4A3
Electromagnetic Wave Scattering from Atmospheric Irregularities

Saturday AM, August 5, 2006

Room 6417

Organized by Marc Saillard, Hubert Luce

Chaired by Marc Saillard, Hubert Luce

09:00 High Resolution Atmospheric Profiling Using Range Imaging
T. Y. Yu (*School of Meteorology, University of Oklahoma, U.S.A.*); *P. Chilson* (*School of Meteorology,University of Oklahoma, U.S.A*); *W. O. J. Brown* (*National Center for Atmospheric Research, U.S.A*); *S. Frasier* (*University of Massachusetts, U.S.A*);

09:20 Radar Imaging of Troposphere and Stratosphere Echoes with new Middle and Upper Atmosphere Radar (MUR)
G. Hassenpflug, M. Yamamoto, S. Fukao (*Kyoto University, Japan*); *H. Luce* (*Toulon University, France*);

09:40 Review of Atmospheric Boundary Layer Observations Using the Turbulent Eddy Profiler
R. D. Palmer (*University of Oklahoma, U.S.A.*); *B. L. Cheong* (*University of Oklahoma, U.S.A.*);

10:00 Fine Scale Multistatic Wind Field Observations with EAR
K. Nishimura, E. Gotoh, T. Harada, T. Sato (*Kyoto University, Japan*);

10:20 **Coffee Break**

10:40 Multi-Sensor Ground-based Remote Sensing Measurements of Turbulence and Microphysical Parameters in Marine Boundary Layer Clouds at Palau in the Tropical Western Pacific Ocean
K. K. Reddy, R. Shirooka, T. Ushiyama, H. Kubota (*Japan Agency for Marine-Earth Science and Technology (JAMSTEC), Japan*); *H. Uyeda* (*Nagoya University, Japan*);

11:00 Observations and Analysis in Long-Distance Propagations of VHF Waves Transmitted from Oversea TV Broadcasting Stations
T. Takano, K. Sakurai, H. Nakata, H. Akaike, S. Ujigawa, I. Nagashima, A. Hirai, Y. Kawamura, S. Shimakura (*Chiba University, Japan*);

11:20 Performance of the Developed Low-Power and High-Sensitivity Cloud Profiling FM-CW Radar at 95 GHz
T. Takano, K. Akita, H. Kubo, H. Abe, J. Yamaguchi, K. Futaba, Y. Kawamura (*Chiba University, Japan*); *H. Kumagai* (*The National Institute of Information and Communications Technology, Japan*); *T. Takamura* (*Chiba University, Japan*); *Y. Nakanishi* (*Chiba University, Japan*);

Session 4A4
Microwave Materials for Functional Devices

Saturday AM, August 5, 2006

Room 6418

Organized by Yoshihiro Konishi, Kazuhiko Honjo

Chaired by Yoshihiro Konishi, Kazuhiko Honjo

09:00 2-10 GHz-Range Surface Acoustic Wave Filters Using Zero-TCFESuper High Coupling Substrates
K. Yamanouchi, Y. Satoh (*Tohoku Institute of Technology, Japan*);

09:20 Carbon Nanotube Electronics
T. Mizutani (*Nagoya University, Japan*);

09:40 A Liquid Crystal Beam Former for Two-dimensional Millimeter-wave Steering
H. Kamoda (*NHK (Japan Broadcasting Corporation), Japan*); *T. Kuki* (*NHK (Japan Broadcasting Corporation), Japan*); *H. Fujikake* (*NHK (Japan Broadcasting Corporation), Japan*); *T. Nomoto* (*NHK (Japan Broadcasting Corporation), Japan*);

10:00 Response Time of Microwave Liquid Crystal Devices
Y. Utsumi (*National Defense Academy, Japan*); *T. Kamei* (*National Defense Academy, Japan*);

10:20 **Coffee Break**

10:40 Microwave Variable Phase Shifter Using Ferroelectric Liquid Crystal
H. Moritake (*National Defense Academy, Japan*); *S. Morita* (*National Defense Academy, Japan*); *R. Ozaki* (*National Defense Academy, Japan*); *T. Kamei* (*National Defense Academy, Japan*); *Y. Utsumi* (*National Defense Academy, Japan*);

11:00 Preparation of Aluminum Nitride Thin Films for Film Bulk Acoustic Resonator Devices
K. Nagao (*Ube Industries, Ltd., Japan*); *K. Nishimura, T. Yamada* (*Ube Industries, Ltd., Japan*);

11:20 A Broadside-Coupled Interdigital Resonator
I. Awai (*Ryukoku University, Japan*); *T. Nishimura* (*Ryukoku University, Japan*);

Session 4A5
UXO/Landmine Detection

Saturday AM, August 5, 2006

Room 6425

Organized by Akira Hirose

Chaired by Akira Hirose

09:00 Landmine Detection Radar Using Circular Small Loop Antenna Array
T. Miwa, K. Kimura, Y. Yamakoshi (*Gunma University, Japan*);

09:20 Plastic Landmine Imaging with Integrated Walled LTSA Handset
S. Masuyama, A. Hirose (*The University of Tokyo, Japan*);

09:40 Test and Evaluation of Japanese GPR-EMI Dual Sensor Systems at Benkovac Test Site in Croatia
J. Ishikawa, M. Kiyota (*Japan Science and Technology Agency (JST), Japan*); *N. Pavković* (*Development and Training (HCR-CTRO), Japan*); *K. Furuta* (*Tokyo Denki University (TDU) / JST, Japan*);

10:00 Remote Sensing of Explosives in a Landmine by Nuclear Quadrupole Resonance
G. Ota, H. Itozaki, J. Barras, K. Sakuta (*Osaka University, Japan*); *M. Tachiki* (*National Institute of Material Science, Japan*);

10:20 **Coffee Break**

10:40 Classification of Mine-Like Objects under Rough Ground Surface Using GPR Data
M. Nishimoto (*Kumamoto University, Japan*); *S. Ueno* (*Kumamoto University, Japan*); *K. Nagayoshi* (*Kumamoto University, Japan*); *Y. Kimura* (*Kumamoto University, Japan*);

11:00 Hand-held GPR MD Sensor System (ALIS) and Its Evaluation Test in Croatia
X. Feng, Q. Lu, T. Kobayashi, K. Takahashi, M. Sato (*Tohoku University, Japan*);

Session 4A6
Basic and Applied Concepts of Electromagnetic Vector Imaging: Polarimetry in Radar and SAR Remote Sensing

Saturday AM, August 5, 2006

Room 6426

Organized by Wolfgang-Martin Boerner, Yoshio Yamaguchi

Chaired by Wolfgang-Martin Boerner, Yoshio Yamaguchi

09:00 Fully Polarimetric L- and X-band Pi-SAR Observation of Tomakomai Forested Area
Y. Yamaguchi (*Niigata University, Japan*); *Y. Yajima* (*Niigata University, Japan*); *H. Yamada* (*Niigata University, Japan*);

09:20 Polarimetric Analysis of Radar Signature Of A Man-made Structure
J. S. Lee (*Naval Research Laboratory, U.S.A.*); *E. Krogager* (*Danish Defence Research Establishment, Denmark*); *W. M. Boerner* (*UIC-ECE Communications, Sensing and Navigation Laboratory, U.S.A.*);

9:40 Implementation of Differential Repeat-pass Sar Interferometry For (i) The Search For Earthquake Precursory Land-cover Deformation In Taiwan In Coordination With The Integrated Search For Taiwanese Earthquake Precursors Istep Taiwanese Program For Promoting Research Excellence; And (ii) The Assessment Of Land-cover Subsidence By Ground-water Withdrawal And/or Sea-water Infusion By Coastal Erosion
C. T. Wang (*NCU-CSRSR, Taiwan*); *W. M. Boerner* (*UIC-ECE Communications, Sensing and Navigation Laboratory, U.S.A.*);

10:00 How Infrasonic Imaging And Hf-othr Technology Can Favorably Be Implemented For Detecting The Onset Of Tsunamis And The Real-time Imaging Of Its Spreading
W. M. Boerner (*UIC-ECE Communications, Sensing and Navigation Laboratory, U.S.A.*);

10:20 **Coffee Break**

10:40 Recent Developments of Radar Remote Sensing: Air- and Space-Borne Multimodal SAR Remote Sensing in Forestry and Agriculture, Geology, Geophysics (Volcanology and Tectonology): Advances in P0L-SAR, IN-SAR, POLinSAR and POL-DIFF-IN-SAR Sensing and Imaging with Applications to Environmental and Geodynamic Stress-change Monitoring
W. M. Boerner (*UIC-ECE Communications, Sensing and Navigation Laboratory, U.S.A.*);

11:00 Microwave Radiometry Technology for the Nature-Society System Biocomplexity Assessment
V. F. Krapivin (*Russian Academy of Sciences, Russia*); *F. A. Mkrtchyan* (*Russian Academy of Sciences, Russia*);

11:20 An Adaptive Poliarization Optics Technology for Ecological Monitoring of the Aquatic Enviroment
F. A. Mkrtchyan (*Russian Academy of Sciences, Russia*); *V. F. Krapivin* (*Russian Academy of Sciences, Russia*); *V. I. Kovalev* (*Russian Academy of Sciences, Russia*); *V. V. Klimov* (*Russian Academy of Sciences, Russia*); *S. P. Golovachev* (*Russian Academy of Sciences, Russia*);

Session 4A7
High Frequency Micromachined Circuits

Saturday AM, August 5, 2006

Room 6302

Organized by Shiban K. Koul

Chaired by Shiban K. Koul

9:00 An Integrated Transmitter Circuits Design for Ultra-Wideband System
T. Y. Tzou, F. C. Chen (*National Chiao Tung University, Taiwan*);

9:20 Wideband diode linearizer for RF amplifier with adaptive bias stabilization
K. W. Lau (*City University of Hong Kong, China*); *Q. Xue* (*City University of Hong Kong, China*); *C. H. Chan* (*City University of Hong Kong, China*);

9:40 A Microstrip Dual-band Spiral Filter with Spur-line Structure and Defected Ground Structure
Z. C. Ker, J. H. Yao, S. Y. Chen, C. J. Wang (*Feng-Chia University, Taiwan R. O. C.*);

10:00 Amplitude Modulation Using Injection Locking Oscillator Under Strong Envelop Variation Injection
C. Thongsopa, C. Saetiaw (*Suranaree University of Technology, Thailand*); *A. Intarapanich* (*National Electronics and Computer Technology Center, Thailand*);

10:20 **Coffee Break**

10:40 A Broadband Microstrip-to-Coplanar Stripline Transition
C. H. K. Chin, Q Xue, C. H. Chan (*City University of Hong Kong, China*);

11:00 Microstrip Ring Resonator Filter Miniaturization Using Vias
M. E. S. Mostafa (*Cairo University, Egypt*); *H. B. E. Shaarawy* (*Cairo University, Egypt*);

Session 4A8
ESD and Transients

Saturday AM, August 5, 2006

Room 6310

Organized by Osamu Fujiwara

Chaired by Osamu Fujiwara, Ken Kwamata

09:00 Impulsive Fields Caused by Low-Voltage ESD
M. Honda (*Impulse Physics Laboratory, Inc., Japan*);

09:20 Wideband Measurment of Voltage and Current Rise Time Due to Micro Gap Discharge as Low Voltage ESD Using the 12 GHz Experimental System
K. Kawamata (*Hachinohe Institute of Technology, Japan*); *S. Minegishi* (*Tohoku Gakuin University, Japan*); *A. Haga* (*Tohoku Gakuin University, Japan*); *O. Fujiwara* (*Nagoya Institute of Technology, Japan*);

09:40 Relationship between Gap Breakdown Field and Rise Time of Discharge Current Due to Collision of Hand-Held Metal Piece Electrified with Low Voltage
Y. Taka (*Nagoya Institute of Technology, Japan*); *I. Mori* (*Nagoya Institute of Technology, Japan*); *O. Fujiwara* (*Nagoya Institute of Technology, Japan*);

10:00 Wideband Measurement of Discharge Current Injected through Air Discharge of an ESD-gun
I. Mori (*Nagoya Institute of Technology, Japan*); *O. Fujiwara* (*Nagoya Institute of Technology, Japan*); *S. Ishigami* (*National Institute of Information and Communications Technology, Japan*);

10:20 **Coffee Break**

10:40 Effects of the Non-linear Heating of the Ionosphere Due to Lightning Discharges
S. S. De (*University of Calcutta, India*); *S. K. Adhikari* (*University of Calcutta, India*); *M. De* (*University of Calcutta, India*); *A. Guha* (*University of Calcutta, India*); *B. K. De* (*Tripura University, India*);

11:00 Simulation of Creeping Discharge Dynamics
A. Adalev (*The University of Electro-Communications, Japan*); *M. Hayakawa* (*The University of Electro-Communications, Japan*); *N. V. Korovkin* (*Saint-Petersburg State Polytechnical University, Russia*); *D. I. Iudin* (*Radiophysical Research Institute, Russia*); *V. Y. Traktengerts* (*Institute of Applied Physics, Russia*);

11:20 Alternative Method of Measuring Current Distribution in Telecommunication Sites
A. H. Samad (*, Malaysia*);

Session 4P1
Numerical Techniques II

Saturday PM, August 5, 2006

Room 6401

Organized by Tsuneki Yamasaki, Yoichi Okuno

Chaired by Tsuneki Yamasaki, Yoichi Okuno

13:30 Coupling Characteristics of Optical Fibers with Two Elliptical Cores
Kazunori Kameda, Shinichi Furukawa (*Sano College, Japan*); *Takashi Hinata* (*Nihon University, Japan*);

13:50 Numerical Analysis of the Pulse Response for an Anisotropic Medium
T. Yamaguchi (*Nihon University, Japan*); *T. Yamasaki* (*Nihon University, Japan*); *T. Hinata* (*Nihon University, Japan*);

14:10 Error Control of the Multilevel Fast Multipole Algorithm
S. Ohnuki (*Nihon University, Japan*); *W. C. Chew* (*University of Illinois at Urbana-Champaign, U.S.A.*);

14:30 Monte Carlo Simulation of Phosphor-Screened Ultraviolet Light in a White Light-Emitting Device
C. Chung Chang (*Academia Sinica, Taiwan ROC*); *Chien C. Chang* (*Academia Sinica, Taiwan ROC*); *R. L. Chern* (*National Taiwan University, Taiwan*);

14:50 Numerical Study on Waves from Particles Composed of Bunches of Helices
M. Asai (*Kinki University, Japan*); *J. Yamakita* (*Okayama Prefectural University, Japan*);

15:10 Combined RWG-Orthogonal Polynomial Expansion for MoM Analysis of Patch Antenna on Finite Dielectric Substrate
A. Saeedfar, H. Sato, K. Sawaya (*Tohoku University, Japan*);

15:30 **Coffee Break**

15:50 Hybrid Numerical Simulation of Electrostatic Force Microscopes in 3D
U. B. Bala, M. Greiff, W. Mathis (*University of Hannover, Germany*);

16:10 Pulse Propagation Characteristics of Multilayer Printed Circuit with Via Structures
D. Kobayashi (*Nihon University, Japan*); *S. Furukawa* (*Sano College, Japan*); *T. Hinata* (*Nihon University, Japan*);

16:30 Electromagnetic Scattering from Polygonal Geometry
S. Ohnuki (*Nihon University, Japan*); *N. Ohtaka* (*Nihon University, Japan*); *T. Hinata* (*Nihon University, Japan*);

16:50 Spectral-Element Discontinuous Galerkin Methods for Waveguiding Structures
M. Min (*Argonne National Laboratory, U.S.A.*);

17:10 Energy and Signal Indices of a Negative Index Medium
H. Hosono (*Nihon University, Japan*); *T. Hosono* (*Nihon University, Japan*);

17:30 Ray-Tracing Acceleration Techniques to Compute Diffraction and Double and Triple Effects in Rcs Prediction Methods Based on Physical Optics
L. Lozano, F. S. de Adana, M. F. Catedra (*Universidad de Alcalá, Spain*);

Session 4P2
Electromagnetic Modeling and Inversion and Applications

Saturday PM, August 5, 2006

Room 6409

Organized by Ganquan Xie

Chaired by Ganquan Xie

13:30 Microwave Surface Impedance of a Nearly Ferroelectric Superconductor
C. J. Wu (*National University of Kaohsiung, Taiwan*); *C. M. Fu* (*National University of Kaohsiung, Taiwan*);

13:50 Calculations of Optical Properties of an Annular Dielectric Mirror
C. J. Wu (*National University of Kaohsiung, Taiwan*); *S. Gwo* (*National University of Kaohsiung, Taiwan*);

14:10 A Model of Porous Medium Magneto-Hydro-Dynamics And Its Inverse Problem
Y. Guo (*Chinese Academy of Science and Wuhan Institute for Industrial and Applied Mathematics, China*);

14:30 The Propagation of an Elastic Wave in Half-Infinite Space a in Magnetic Field
H. T. Cai (*Central South University, China*);

14:50 Non-Contact Bias Voltage Measurement on Analog Circuits that Uses the Electro-Optic Probing Technique
W. K. Kuo (*National Formosa University, Taiwan R.O.C.*);

15:10 Markov skeleton processes and their applications
Z. Hou, H. T. Cai (*Central South University, China*);

15:30 **Coffee Break**

15:50 A Power Line Communication (PLC) System
Y. Watanabe (*Musashi Institute of Technology, Japan*);

16:10 3D GL Method for the Electromagnetic Field in the Nanometer Materials
G. Xie, F. Xie, J. Li (*GL Geophysical Laboratory, U.S.A.*);

16:30 A Filter Analysis for Local Internet System Using SAGILD Modeling
B. H. Xie (*New York Industries Inc., USA*); *J. Li, G. Xie* (*GL Geophysical Laboratory, USA*);

16:50 The 3D AGILD EM-Flow Coupled Modeling
G. Xie, J. Li, F. Xie (*GL Geophysical Laboratory, USA*);

17:10 A Metro Carlo AGILD EM Inversion
G. Xie, J. Li, F. Xie (*GL Geophysical Laboratory, USA*);

17:30 A 3D AGILD Forest Modeling
G. Xie (*GL Geophysical Laboratory, U.S.A.*); *J. Li* (*GL Geophysical Laboratory, U.S.A.*); *F. Xie* (*GL Geophysical Laboratory, U.S.A.*);

Session 4P3
UWB Antennas for Radar and Telecommunication

Saturday PM, August 5, 2006

Room 6417

Organized by A. G. Yarovoy, A. A. Lestari

Chaired by A. G. Yarovoy, A. A. Lestari

13:10 An Omnidirectional UWB Printed Dipole Antenna with Small Waveform Distortion
M. Ameya (*Hokkaido University, Japan*); *M. Yamamoto* (*Hokkaido University, Japan*); *T. Nojima* (*Hokkaido University, Japan*);

13:30 Optimization of Conical Helix Antenna Using Particle Swarm Method
A. A. L. Neyestanak (*Jahad Daneshgahi, Iran*);

13:50 Analysis and Optimization of a New Ultra Wide Band Microstrip Antenna
A. A. L. Neyestanak (*Islamic Azad University, Branch of Rey, Iran*); *S. A. Hosseini* (*Islamic Azad University, Branch of Rey, Iran*);

14:10 Time Domain Characterization of 1-2 GHz Circular-Ended Bowtie Antenna with Coaxial Balun Using the Normalized Impulse Response
J. Suryana (*STEI ITB, Indonesia*); *A. B. Suksmono, Sugihartono, A. Kurniawan* (*STEI ITB, Indonesia*); *K. Tanaka, K. Igarashi* (*NICT, Japan*); *M. Iida* (*ARIB, Japan*);

14:30 A Modified UWB Bow-Tie Antenna for Impulse Radio
A. A. Lestari, A. G. Yarovoy (*Delft University of Technology, The Netherlands*); *E. T. Rahardjo* (*University of Indonesia, Indonesia*); *L. P. Ligthart* (*Delft University of Technology, The Netherlands*);

14:50 Design Optimization of UWB Printed Antenna for Omnidirectional Pulse Radiation
N. Fortino, G. Kossiavas, J. Y. Dauvignac (*Université de Nice, France*);

15:10 Optimization and Evaluation of Antenna Elements Attached to the Optical Electric Field Sensor
N. Hayashi, M. Sato (*Tohoku University, Japan*);

15:30 **Coffee Break**

15:50 The Design of a Wideband TEM Horn Antenna with Balloons
S. Norouzi (,); *C. Ghobadi* (,);

16:10 Broadband TEM Horn Array for FOPEN Radar
S. Norouzi (,);

16:30 A New Design of TEM Horn Aintennas for Pulse Radiation
S. Norouzi (,);

16:50 A Planar UWB Triangular Monopole Antenna with Bandwidth Enhancement
C. C. Lin, H. R. Chuang (*National Cheng Kung University, Taiwan, R.O.C.*);

17:10 Self-compensating Antennas For A Dispersionless Uwb Channel
J. S. Tyo (*University of New Mexico, U.S.A.*); *C. J. Buchenauer* (*University of New Mexico, U.S.A.*); *M. Dogan* (*University of New Mexico, U.S.A.*);

17:30 Array Geometry for Real-time Ultra Wideband Systems
N. Y. Soltani (*Iran University of Science and Technology, Iran*); *M. Asgari* (*IRIB Faculty, Iran*); *F. H Kashani* (*Iran University of Science and Technology, Iran*);

17:50 Indoor Propagation Property and Its Application to MIMO-OFDM Systems
Y. Ohwatari (*Hokkaido University, Japan*); *H. Nishimoto* (*Hokkaido University, Japan*); *H. P. Bui* (*Hokkaido University, Japan*); *Y. Ogawa* (*Hokkaido University, Japan*); *T. Nishimura* (*Hokkaido University, Japan*); *T. Ohgane* (*Hokkaido University, Japan*);

18:10 Transmit and Receive Timing Control in LOS MIMO-UWB Environments
M. Takanashi (*Hokkaido University, Japan*); *T. Nishimura* (*Hokkaido University, Japan*); *Y. Ogawa* (*Hokkaido University, Japan*); *T. Ohgane* (*Hokkaido University, Japan*);

Session 4P4
Remote Sensing of Ocean/Forests

Saturday PM, August 5, 2006

Room 6418

Organized by Kazuo Ouchi

Chaired by Kazuo Ouchi, Yoshihisa Hara

13:30 Performance Evaluation of Ku-band Airborne Interferometric SAR
Y. Hara (*Mitsubishi Electric Corporation, Japan*); *T. Horiuchi* (*Mitsubishi Electric Corporation, Japan*); *M. Higuchi* (*Mitsubishi Electric Corporation, Japan*); *M. Tsuchida* (*Mitsubishi Electric Corporation, Japan*); *M. Iwamoto* (*Mitsubishi Electric Corporation, Japan*); *M. Furuhata* (*Japan Resources Observation System Organization, Japan*);

13:50 L-band SAR Coherence Map over a Forest, and Relation to Biomass
M. Watanabe (*Japan Aerospace Exploration Agency/Earth Observation Research and Application Center, Japan*); *M. Shimada* (*Japan Aerospace Exploration Agency/Earth Observation Research and Application Center, Japan*); *R. Furuta* (*Japan Aerospace Exploration Agency/Earth Observation Research and Application Center, Japan*);

14:10 Analysis of Bragg Scattering Phenomenon Observed in L-band SAR Images of Machine-Planted Rice Paddies
H. Wang, K. Ouchi (*Kochi University of Technology, Japan*); *N. Ishitsuka* (*National Institute for Agro-Environmental Sciences, Japan*); *G. Saito* (*Tohoku University, Japan*); *K. Mohri* (*Okayama University, Japan*);

14:30 A Generic Multi-Agent System for Analyzing Spatial-Temporal Geographic Information
I. R. Farah, K. S. Ettabaa, I. Hamdi, M. B. Ahmed (*Ecole Nationale des sciences de l informatique, Tunisie*);

14:50 Potential estimation of heat flux through sea ice and cover snow by remote sensing
Y. Sasaki, S. Iwasaki (*National Defense Academy, Japan*); *S. Kakuta* (*Japan Agency for Earth-Ocean Science and Technology, Japan*); *V. K. Pavlov* (*Norwegian Polar Institute, Norway*); *T. J. Weingartner* (*University of Alaska, U.S.A.*);

15:10 Dependency of the Normalized Radar Cross Section of Ocean Surface on Polarizations
A. Nadai, T. Umehara, S. Uratsuka (*National Institute of Information and Communications Technology, Japan*);

15:30 **Coffee Break**

15:50 Directional Characteristics of Wind-Wave Development Under High-Resolution Wind Fields
T. Shimada (*Tohoku University, Japan*); *H. Kawamura* (*Tohoku University, Japan*);

16:10 Automatic Detection Approach of Ship using RADARSAT-1 Synthetic Aperture Radar
C. S. Yang (*Korea Ocean Research and Development Institute, Korea*); *K. Ouchi* (*Kochi University of Technology, Japan*);

16:30 Measurement of Ocean Waves by Synthetic Aperture Radar Using Cross-Track Interferometry
A. Nadai (*National Institute of Information and Communications Technology, Japan*); *T. Umehara* (*National Institute of Information and Communications Technology, Japan*); *S. Uratsuka* (*National Institute of Information and Communications Technology, Japan*); *N. Sudo* (*Tokai University, Japan*);

16:50 Directional Spectrum Estimation from HF Ocean Radar
Y. Hisaki (*University of the Ryukyus, Japan*);

17:10 Long Range Ocean Radar for Surface Current Measurement in the Southern Part of the East China Sea
S. Fujii (*University of Ryukyus, Japan*); *S. Kojima, K. Sato, T. Matsuoka* (*National Institute of Information and Communications Technology, Japan*);

17:30 Wavelet Analysis for Internal Wave Detection in ERS SAR and ASTER Image Data
Y. Arvelyna, M. Oshima (*Tokyo University of Marine Science and Technology, Japan*);

17:50 Gim-Technology for the Classification and Qualitative Interpretation of the Data of Remote Sensing for Water Surface
F. A. Mkrtchyan (*Russian Academy of Sciences, Russia*); *V. F. Krapivin* (*Russian Academy of Sciences, Russia*); *S. M. Shapovalov* (*Russian Academy of Sciences, Russia*);

Session 4P5
Design of Complex Transmitters in Changing Enviroments by Simualtions: Recent Advances and Future Requirements

Saturday PM, August 5, 2006

Room 6425

Organized by Niels Kuster

Chaired by Niels Kuster

13:30 Circularly Polarized Antennas for Realizing In-Vivo Whole-Body Exposure
J. Q. Wang (*Nagoya Institute of Technology, Japan*); *O. Fujiwara* (*Nagoya Institute of Technology, Japan*); *K. Wake* (*National Institute of Information and Communications Technology, Japan*); *H. Kawai* (*National Institute of Information and Communications Technology, Japan*); *S. Watanabe* (*National Institute of Information and Communications Technology, Japan*);

13:50 SAR Calculation in Immature Rats Exposed by an 8-shaped Loop Antenna in 1.5 GHz band
S. Tanaka, T. Uno (*Tokyo University of Agriculture and Technology, Japan*); *K. Wake, H. Kawai, S. Watanabe* (*National Institute of Information and Communications Technology, Japan*); *H. Masuda, A. Ushiyama* (*National Institute of Public Health, Japan*); *M. Taki* (*Tokyo Metropolitan University, Japan*);

14:10 Movement of the Peak SAR Location in Close Proximity to the Surface of a COST244 Phantom Exposed to a Dipole Array Antenna
S. Kajiwara (*Matsushita Electric Industrial Co., Japan*);

14:30 FDTD Analysis for propagation Characteristics of Wireless LAN Equipped in a Jumbo Aircraft
M. Hirono, Y. Kawahara, T. Hikage, T. Nojima, M. Omiya (*Hokkaido University, Japan*);

14:50 Evaluation of Indoor Propagation of the Medical Implant Communication System (MICS) by FDTD Simulations.
A. J. Johansson (*Lund University, Sweden*);

15:10 Printed Quasi-Yagi Antennas for Switched-Beam WLAN Applications
K. F. Hung (*National Taiwan University, Taiwan*); *Y. C. Lin* (*National Taiwan University, Taiwan*);

15:30 **Coffee Break**

15:50 Virtual Prototyping and Failure Synthesis: RF Design and Optimization of Mobile Device Terminals
R. Tay (*Motorola Innovation Centre, Singapore*); *N. Chavannes* (*Foundation for Research on Information Technologies In Society (IT IS) - ETH, Switzerland*); *P. Futter* (*Schmid and Partner Engineering AG (SPEAG), Switzerland*); *Ng. GuanHong* (*Motorola Innovation Centre, Singapore*); *N. Kuster* (*Swiss Federal Institute of Technology, Switzerland*);

16:10 Solutions for Computational Dosimetry of Tomorrow
A. Christ, G. del Castillo (*Foundation for Research on Information Technologies in Society, Switzerland*); *N. Kuster* (*Swiss Federal Institute of Technology, Switzerland*); *N. Chavannes, E. Cherubini* (*Schmid Partner Engineering AG, Switzerland*);

16:30 Reliable Prediction of Mobile Phone Performance for Different Daily Usage Patterns by Numerical Methods
N. Chavannes (*Foundation for Research on Information Technologies In Society (IT IS) - ETH, Switzerland*); *P. Futter* (*Schmid and Partner Engineering AG (SPEAG), Switzerland*); *R. Tay* (*Motorola Innovation Centre, Singapore*); *K. Pokovic* (*Schmid and Partner Engineering AG (SPEAG), Switzerland*); *N. Kuster* (*Swiss Federal Institute of Technology, Switzerland*);

16:50 Passive Metallic Implants In the Near Field of a Dipole: FDTD Simulation Results for SAR In the MRI-Based Head Model
H. Virtanen (*University of Kuopio, Finland*); *J. Keshvari* (*Nokia Research Center, Finland*); *R. Lappalainen* (*University of Kuopio, Finland*);

17:10 A Dual-band Internal Antenna for Mobile Handsets: the Consideration of the Handset Case, Battery, Head, and Hand
Y. J. Cho, S. O. Park (*Information and Communications University, Korea*);

Session 4P6
Electromagnetic Fields of Nanometer Electromagnetic Waves and X-ray

Saturday PM, August 5, 2006

Room 6426

Organized by Yasumitsu Miyazaki, Masahiro Agu

Chaired by Yasumitsu Miyazaki, Masahiro Agu

13:30 Synchrotron Radiation and Free-Electron Lasers - Tutorial Review
T. Shiozawa (*Chubu University, Japan*);

13:50 Present Status and Future Prospect of Saga Synchrotron Light Project
M. Kamada (*Saga University, Japan*); *K. Takahashi* (*Saga University, Japan*); *J. Azuma* (*Saga University, Japan*); *T. Tanaka* (*Saga University, Japan*); *H. Ogawa* (*Saga University, Japan*);

14:10 X-Ray Waveguides and Waveguide-Based Lens-Less Hard-X-Ray Imaging
C. Fuhse, C. Ollinger, T. Salditt (*University of Gottingen, Germany*);

14:30 X-Ray Nanofocusing Limits for Capillaries and Zone Plates
C. Bergemann (*University of Cambridge, U.K.*); *F. Pfeiffer, C. David, H. Keymeulen, F. van der Veen* (*Paul Scherrer Institut, Switzerland*);

14:50 Analysis of Dispersion Characteristics in Photonic Crystal Consisting of Periodic Atoms for Nanometer Waveguides
Y. Miyazaki (*Aichi University of Technology, Japan*); *N. Goto, T. Innami* (*Toyohashi University of Technology, Japan*);

15:10 Electromagnetic Characteristics of Grid Structures for Scattering Fields of Nano-Meter Electromagnetic Waves and X-Rays
Y. Miyazaki (*Aichi University of Technology, Japan*);

15:30 **Coffee Break**

15:50 FDTD Parallel Computing of Fundamental Scattering and Attenuation Characteristics of X-ray for Medical Image Diagnosis
K. Takahashi (*Aichi University of Technology, Japan*); *Y. Miyazaki* (*Aichi University of Technology, Japan*); *N. Goto* (*Toyohashi University of Technology, Japan*);

16:10 Orthogonal Relations of Electromagnetic Fields Including Evanescent Filed in Dispersive Medium
J. B. Li (*Fuji Photo Film, Japan*); *M. Agu* (*Fukushima National College of Technology, Japan*);

16:30 Structure Dependent Magnetic and Electrical Properties of Nano Ferrites
P. P. Kulkarni (*S. S. Arts College, India*); *V. R. Bote* (*S. S. Arts College, India*); *S. A. Mane* (*S. S. Arts College, India*); *R. B. Pujar* (*T. P. Science Institute, India*);

16:50 Innovation Use of Nano Technology in Magnetic Storage Devices
D. Bajalan (*, Austria*);

17:10 Nano-beam production by Particle Channeling
D. Bajalan (*, Austria*);

17:30 Channeling in SWNT and Other Applications of Carbon Nano Tubes
D. Bajalan (*, Austria*);

Session 4P7
Novel Mathematical Methods in Electromagnetics III

Saturday PM, August 5, 2006

Room 6302

Organized by Yury Shestopalov, Kazuya Kobayashi

Chaired by Yury Shestopalov, Alexander B. Samokhin

13:30 Three-Dimensional Forward Solvers based on improved Formulations of the Extended Born Approximation
D. Franceschini (*University of Trento, Italy*); *A. Abubakar* (*Schlumberger-Doll Research, USA*); *T. M. Habashy* (*Schlumberger-Doll Research, USA*); *A. Massa* (*University of Trento, Italy*);

13:50 Characteristics of Diffuse Photon Density Waves in Column-Shaped Media
J. Taniguchi (*Osaka University, Japan*); *F. Iwata* (*Osaka University, Japan*); *M. Hattori* (*Osaka University, Japan*); *H. Murata* (*Osaka University, Japan*); *Y. Okamura* (*Osaka University, Japan*);

14:10 Computation of the Scattering of Arbitrary Shape Bodies Modeled by Parametric Surfaces Using the Multilevel Fast Multipole Method.
I. González, O. Gutiérrez, F. S. de Adana, M. F. Catedra (*Universidad de Alcalá, Spain*);

14:30 New Electric Field Integral Equation for Computer Aided Design of 3-Dimensional Waveguide
M. Tanaka (*Gifu University, Japan*); *K. Tanaka* (*Gifu University, Japan*);

14:50 Static Stability and Plate Spacing for Diamagnetic Levitating Magnets
J. N. Ho (*University of Washington, U.S.A.*); *W. C. Wang* (*University of Washington, U.S.A.*);

15:10 Responsibility of Electromagnetism for the Origin of the Rings of Saturn from Superconducting Particles of the Protoplanetary Cloud
V. V. Tchernyi (*Russian Academy of Science, Russia*);

15:30 **Coffee Break**

15:50 Statistical Representative Volume Element for Predicting the Dielectric Permittivity of Random Media
D. Jeulin, M. Moreaud (*Ecole des Mines de Paris, France*);

16:10 Plane Wave Diffraction by a Finite Parallel-Plate Waveguide with Four-Layer Material Loading: The Case of E Polarization
J. P. Zheng, K. Kobayashi (*Chuo University, Japan*);

16:30 Plane Wave Diffraction by a Finite Parallel-Plate Waveguide with Four-Layer Material Loading: The Case of H Polarization
E. H. Shang, K. Kobayashi (*Chuo University, Japan*);

16:50 Algorithmic System for Identifying Bird Radio-Echo and Plotting Radar Ornithological Charts
L. Dinevich (*Tel-Aviv University, Israel*); *Y. Leshem* (*Tel-Aviv University, Israel*);

17:10 Interpolating Wavelets on the Interval for Time-Domain Electromagnetics
C. Represa (*Universidad de Burgos, Spain*); *J. Munoz* (*Universidad de Murcia, Spain*); *S. Amat* (*Universidad Politecnica de Cartagena, Spain*);

Session 4P8
Microstrip and Printed Antennas

Saturday PM, August 5, 2006

Room 6310

Organized by Kazuya Kobayashi, Tsuneki Yamasaki

Chaired by Kazuya Kobayashi, Atsushi Kusunoki

13:30 Compact UHF Band Cavity Backed Microstrip Antenna for Airborne Applications
K. N. Rao (*Research Centre Imarat (RCI), India*);

13:50 Right Angle-Shaped Slot Antenna for IEEE 802.11b/g/j Applications
C. Jamjank, P. Wiriyacosol, N. Anantrasirichai (*King Mongkut's Institute of Technology Ladkrabang, Thailand*); *T. Wakabayashi* (*Tokai University, Japan*);

14:10 Particle Swarm Optimization of Dual-Band CPW-fed Antenna for WLAN Operation
W. C. Liu, C. M. Wu (*National Formosa University, Taiwan, Republic of China*);

14:30 RFID Tag Antenna with Relative Humidity Sensing Function
K. H. Chang (*Yonsei University, Korea*); *Y. H. Kim* (*Yonsei University, Korea*); *Y. J. Kim* (*Yonsei University, Korea*); *Y. J. Yoon* (*Yonsei University, Korea*);

14:50 Radiation Characteristics of a Microstrip Patch Antenna with LHM Substrate
A. Kusunoki, M. Tanaka (*Oita University, Japan*);

15:10 Typical Slanted Longitudinal Slot Waveguide Antenna
S. K. Satnoor (*Gulbarga University, India*); *R. M. Vani* (*Gulbarga University, India*); *S. N. Mulgi* (*Gulbarga University, India*); *P. M. Hadalgi* (*Gulbarga University, India*); *P. V. Hunagund* (*Gulbarga University, India*);

15:30 **Coffee Break**

15:50 Compact Stacked Microstrip Antenna with Inverted C-slot for Wireless Communications
Ravi. M. Yadahalli, R. M. Vani (*Gulbarga University, India*); *S. F. Farida* (*Salt Lake Community College, USA*); *P. V. Hunagund* (*Gulbarga University, India*);

16:10 Enhancement of Bandwidth of Compact Stacked Microstrip Antenna using Air Gap Technique
R. M. Yadahalli (*Gulbarga University, India*); *R. M. Vani* (*Gulbarga University, India*); *S. F. Farida* (*Salt Lake Community College, U.S.A.*); *P. V. Hunagund* (*Gulbarga University, India*);

16:30 Slot Loaded Equilateral Triangular Microstrip Antenna
G. M. Pushpanjali, R. B. Konda, S. N. Mulgi, P. V. Hunagund (*Gulbarga University, India*);

16:50 Slotted Rectangular Microstrip Array Antenna for Bandwidth Enhancement
R. B. Konda (*Gulbarga University, India*); *G. M. Pushpanjali* (*Gulbarga University, India*); *S. N. Mulgi* (*Gulbarga University, India*);

17:10 Flange Effect on V-Slot Array on the Narrowwall of a Rectangular Waveguide
Jyoti G, Usha Kiran K, S. K. Satnoor, S. N. Mulgi, P. V. Hunagund (*Gulbarga University, India*);

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7 Antenna theory and radiation
8 Microstrip and printed antennas, phase array antennas
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10 Mobile antennas, conformal and smart skin antennas
11 Power electronics, superconducting devices
12 Systems and components, electromagnetic compatibility
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14 Magnetic levitation, transportation and collision avoidance
15 Precision airport landing systems, GPS
16 Radar sounding of atmosphere, ionospheric propagation
17 Microwave remote sensing and polarimetry, SAR
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26 Quantum well devices, microwave photonic systems, PBG
27 Medical electromagnetics, radiation hazards, MRI
28 Fiber optics, optical sensors, quantum computing
29 Biological media, composite and random media
30 Plasmas, nonlinear media, fractal, chiral media, LHM
31 Constitutive relations and bianisotropic media
32 Moving media, relativity, field quantization, and others

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	WEDNESDAY AM AUGUST 2	WEDNESDAY PM AUGUST 2	THURSDAY AM AUGUST 3	THURSDAY AM AUGUST 3
ROOM 6401	1A1-Waveguides and Transmission-Lines Based on Metamaterials	1P1-Young Scientists Research for Applied Electromagnetics	2A1-Electromagnetic Precursors of Earthquakes	2P1a-Polarimetric Radar Remote Sensing 2P1b-Subsurface/GPR
ROOM 6409	1A2-Recent Advances on Metamaterials	1P2-Scattering by Canonical Objects	2A2-High-Frequency Techniques	2P2-Earth-Space Propagation
ROOM 6417	1A3-Computation in Electromagnetics for Ultra Wide Band Applications	1P3-EMC Problems on Printed Circuit Boards and Common Mode	2A3a-Highly Miniaturized on Chip Passive Components for MMIC/RFIC Applications 2A3b-Innovation in Interconnects Modeling	2P3-Medical Applications
ROOM 6418	1A4-Microwave and Millimeter-Wave circuits	1P4-Advances in Detection and Imaging: from Algorithms to Systems and Applications	2A4-Terahertz Technology	2P4-Advanced Computational Techniques and the Application for Microwave Devices
ROOM 6425	1A5-Extended/Unconventionl Electromagnetic Theory, EHD(Elecrohydrodynamics) /EMHD(Electromagnetohydrodynamics) and Electrobiology	1P5-Metamaterials, Nano-Optics, and Nano-Electromagnetism	2A5-Numerical and Analytical Technologies of Photonic Devices I	2P5-Numerical and Analytical Technologies of Photonic Devices II
ROOM 6426	1A6-Dosimetry of Human-Body Exposure to High-Frequency Electromagnetic Fields I	1P6-Dosimetry of Human-Body Exposure to High-Frequency Electromagnetic Fields II		2P6-Electromagnetic and Optical Wave Technologies for Communications and Sensing

	FRIDAY AM AUGUST 4	FRIDAY PM AUGUST 4	SATURDAY AM AUGUST 5	SATURDAY PM AUGUST 5
ROOM 6401	3A1-Microwave Phenomena on Superconductors I	3P1-Microwave Phenomena on Superconductors II	4A1-Numerical Techniques I	4P1-Numerical Techniques II
ROOM 6409	3A2-Wave Scattering, Random Media and Wireless Communications I	3P2-Wave Scattering, Random Media and Wireless Communications II	4A2-Induced Current in a Human Body by ELF/Intermediate Electric or Magnetic Fields	4P2-Electromagnetic Modeling And Inversion And Applications
ROOM 6417	3A3-Periodic Structures I	3P3-Periodic Structures II	4A3-Electromagnetic Wave Scattering from Atmospheric Irregularities	4P3-UWB Antennas for Radar and Telecommunication
ROOM 6418	3A4-Plasmonic Nanophotonics I	3P4-Plasmonic Nanophotonics II	4A4-Microwave Materials for Functional Devices	4P4-Remote Sensing of Ocean / Forests
ROOM 6425	3A5-Light Modulation Technology	3P5-Recent Trends on Microwave Application Technologies	4A5-UXO/Landmine Detection	4P5-Design of Complex Transmitters in Changing Enviroments by Simualtions: Recent Advances and Future Requirements
ROOM 6426	3A6-SAR/Polarimetry	3P6-Metamaterial and New Material Applications to EMC	4A6-Basic and Applied Concepts of Electromagnetic Vector Imaging: Polarimetry in Radar and SAR Remote Sensing	4P6-Electromagnetic Fields of Nanometer Electromagnetic Waves and X-ray
ROOM 6302	3A7-Novel Mathematical Methods in Electromagnetics I	3P7a-Novel Mathematical Methods in Electromagnetics II 3P7b-Statistical Analysis of Remotely Sensed Data	4A7-High Frequency Micromachined Circuits	4P7-Novel Mathematical Methods in Electromagnetics III
ROOM 6310			4A8-ESD and Transients	4P8-Microstrip and Printed Antennas
ROOM 6301		POSTER		