

# PIERS 2009 Moscow

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Progress In Electromagnetics Research Symposium

Program

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August 18–21, 2009  
Moscow, RUSSIA

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**Progress In Electromagnetics Research Symposium**  
**August 18–21, 2009**  
**Moscow, RUSSIA**

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- VIMPEL Interstate Corporation
- Zhejiang University
- The Electromagnetics Academy at Zhejiang University
- MIT Center for Electromagnetic Theory and Applications/Research Laboratory of Electronics
- The Electromagnetics Academy

## **SYMPOSIUM SITE**

The 2009 Progress in Electromagnetics Research Symposium will be held on August 18–21, 2009, at the Moscow Technical University of Radio Engineering, Electronics and Automatics (MIREA), Moscow, Russia. During the symposium, the PIERS OFFICE will be located in the MIREA Conference Building. PIERS OFFICE will open at 8:00 AM on Tuesday, August 18, 2009.

## **REGISTRATION**

The PIERS technical sessions will start at 13:20 on August 18, 2009. You may register at the registration desk located in Entrance Hall, 1st floor, MIREA Conference Building from 8:00 to 18:00 during the Symposium, August 18–21, 2009.

The on-site registration fee is US\$500. The student registration fee is US\$300; a valid student ID is required. If you have pre-registered and paid, your name badge and symposium program will be ready for you to pick up at the registration desk during the symposium. Please wear your name badge throughout the meeting. Access will be prohibited to the coffee break, interactive areas, and technical sessions if a name badge is not visible.

## **SPECIAL EVENTS**

### **Opening Reception**

On Tuesday, August 18, 2009, from 18:30 to 21:00, the opening reception will take place at Entrance Hall, 1st floor, MIREA Conference Building. For registered PIERS participant, the reception fee is free.

### **Symposium Banquet**

On Thursday evening, August 20, 2009, from 18:30 to 21:30, the symposium banquet is planned for PIERS participants and their guests. The banquet fee is US\$75. A limited number of banquet tickets will be sold on a first-come, first-served basis.

## **PIERS ONLINE**

Information on PIERS 2009 Moscow and future PIERS is posted at [www.piers.org](http://www.piers.org).

## GUIDELINES FOR PRESENTERS

### Oral Presentations

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

All Oral Presenters must load and test presentation files in the PIERS OFFICE no later than 12 hours before the scheduled talk. Presenters are not allowed to detach the session computer and attach their own notebook/laptop to the LCD projector in session rooms. Presenting Authors are highly suggested to upload the presentation files via PIERS webpage before the conference.

- **Presentation files format:**

PDFs and Powerpoint files are recommended. Movies or animations in MPEG, Windows Media, and etc, should be tested in PIERS computer in PIERS OFFICE no later than half-day before the session. Presentation files in USB disk, CD-ROM, DVD are acceptable by PIERS Computer.

- **Report to Session Chair:**

Presenters are required to report to their session chairs at least 10 minutes prior to the start of their session.

- **20 mins time limit:**

All oral presentations, including questions and answers, should be less than 20 minutes.

- **DO NOT change presentation sequence:**

Session Chair, please be present in the session room at least 15 minutes before the start of the session and must strictly observe the starting time and time limit of each talk and refrain from changing paper presentation sequence.

Presenters choosing to use overhead projectors with transparencies, please inform PIERS OFFICE to prepare in advance.

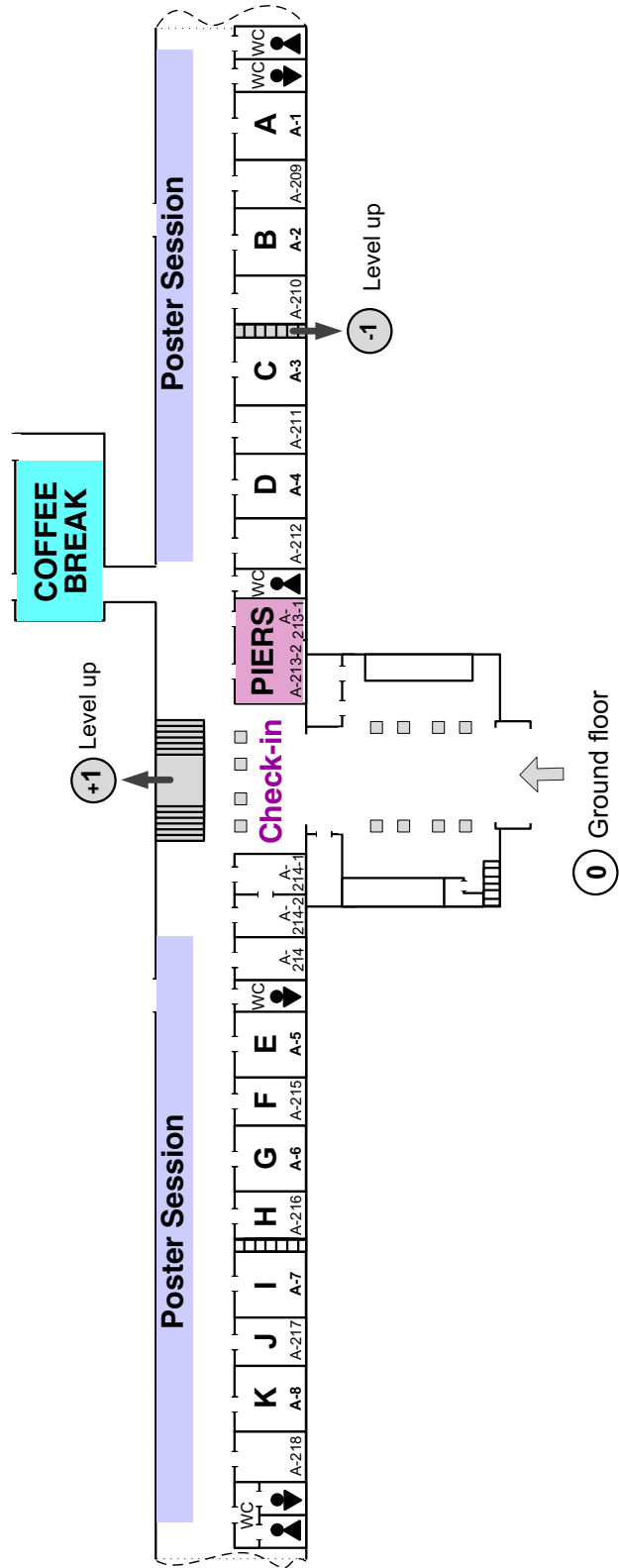
### Poster Presentations

One panel (about 70(W) x 180(H) cm) will be available for each poster.

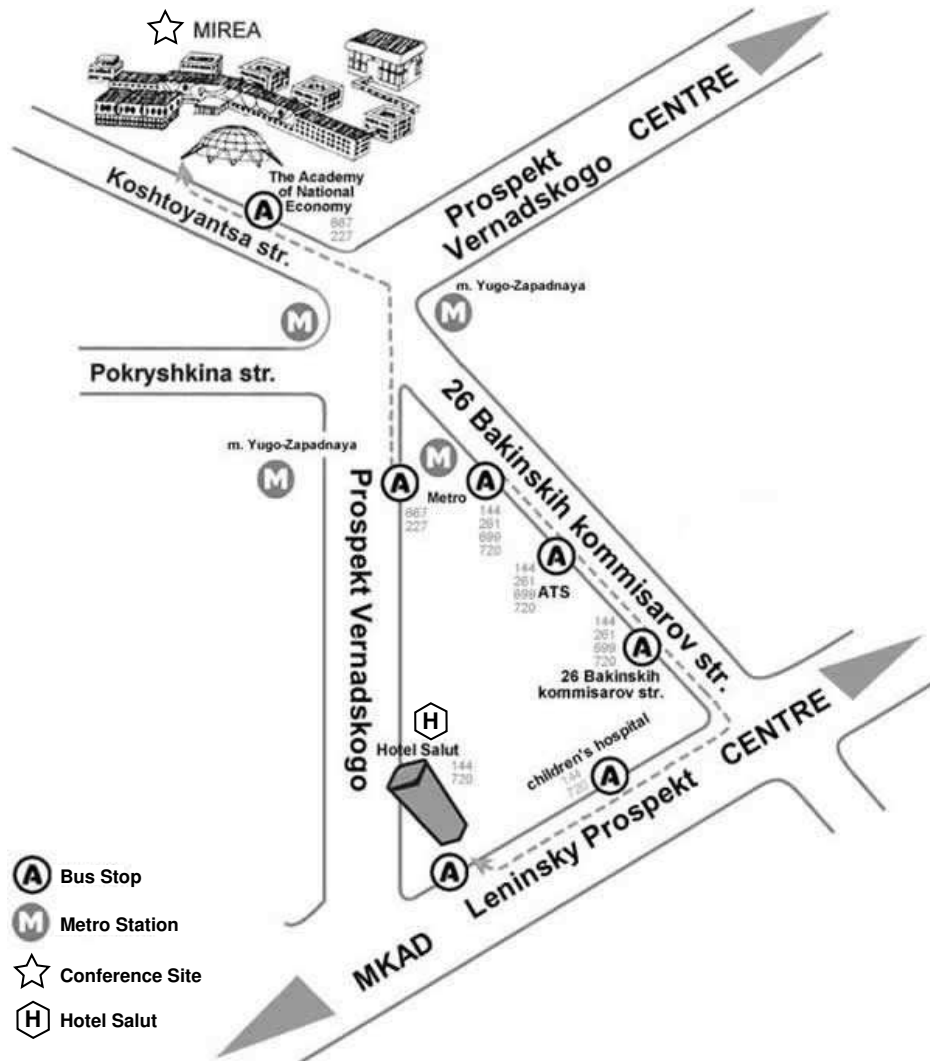
Poster Session 1 will be from 9:00 to 16:00 on Wednesday, August 19, 2009, Poster Session 2 will be from 9:00 to 16:00 on Thursday, August 20, 2009, and Poster Session 3 will be from 9:00 to 16:00 on Friday, August 21, 2009. All presenters are required to mount their papers at the beginning of the session and remove them at the end of their sessions.

Presenters should post time slots of their presence on the panel and be present for interactive questions within the posted time slots. All Presenters are suggested to be present during 10:20–10:40 and 15:20–15:40.

## MAP OF CONFERENCE SITE



## MAP OF OFFERED PIERS HOTEL



## GENERAL INFORMATION

### LANGUAGE

The official language for the Symposium is English.

### CURRENCY AND CREDIT CARDS

The local currency is the Russian Rouble (RUB) and the exchange rate is 1 USD for about 30 Roubles. The credit cards and cash are acceptable for payments. The credit cards are also acceptable in most large shopping centers and hotels.

### TAX AND TIP

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

### TAXI

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

### BUSINESS OPENING HOURS

- **Bank and Post Office**  
Opening hours: 9:00 – 19:00, from Monday to Friday.
- **Government Office**  
Opening hours: 8:00 – 17:00, from Monday to Friday.
- **Store**  
Opening hours: usually 10:00 to 21:00, but the large shopping center serves till 22:00, from Monday to Sunday.

### ELECTRICITY

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

## PIERS 2009 MOSCOW TECHNICAL PROGRAM

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### Session 2P1

#### Remote Sensing, RADAR Imaging & Detection

Tuesday PM, August 18, 2009

#### Room A

Chaired by Takuya Sakamoto, Shripad P. Mahulikar

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|---|--|
| <p>13:40 Experimental Study of Shadow Region Imaging Algorithm with Multiple Scattered Waves for UWB Radars<br/><i>Shouhei Kidera (University of Electro-Communications, Japan); Takuya Sakamoto (Kyoto University, Japan); Toru Sato (Kyoto University, Japan);</i></p> <p>14:00 Frequency and Polarization Dependence of Scattering in Bi-continuous Random Media Model with Application to Snow<br/><i>Xiaolan Xu (University of Washington, USA); Leung Tsang (University of Washington, USA);</i></p> <p>14:20 Monitoring Surface Deformations over Siberian Gas Deposit Areas Using ALOS PALSAR Interferometry<br/><i>Makoto Maruya (NEC Corporation, Japan); Seiji Yoshimoto (NEC Corporation, Japan); Masanori Miyawaki (NEC Aerospace Systems, Japan); Shino Yamaguchi (NEC Aerospace Systems, Japan); Evgeniy Kiselevskiy (Gazprom, Russia); Peter Korviakov (Gazprom Space Systems, Russia); Dmitry Sergeev (Gazprom Space Systems, Russia); Yuriy Baranov (Gazprom VNIIGAZ, Russia); Goro Ando (ERSDAC, Japan); Masaki Kawai (ERSDAC, Japan);</i></p> <p>14:40 Over the Horizon Sky-wave Radar: Coordinate Registration by Sea-land Transitions Identification<br/><i>Fabrizio Cuccoli (Università di Firenze, Italy); Luca Facheris (Università di Firenze, Italy); Dino Giuli (Università di Firenze, Italy); Francesco Sermi (Università di Firenze, Italy);</i></p> | <p>15:00 Complex Permittivity Measurement of Ores and Rocks by Two Coaxial Methods<br/><i>Sixin Liu (Jilin University, China); Junjun Wu (Jilin University, China); Hang Dong (Jilin University, China);</i></p> <p>15:20 <b>Coffee Break</b></p> <p>15:40 A Radar's Electronic Protection from ARM Attack Using an Active Decoy<br/><i>Joong-Soo Lim (Baekseok University, Korea);</i></p> <p>16:00 Radar Target Imaging from Ramp Responses Using Low Frequency Extrapolation<br/><i>Janic Chauveau (Université de Nantes, France); Nicole de Beauhoudrey (Université de Nantes, France); Joseph Saillard (Université de Nantes, France);</i></p> <p>16:20 Infrared Signature Studies of Aircraft and Helicopters<br/><i>Shripad P. Mahulikar (Indian Institute of Technology Bombay, India); G. A. Rao (Indian Institute of Technology Bombay, India); H. R. Sonawane (Indian Institute of Technology Bombay, India); H. S. S. Prasad (Indian Institute of Technology Bombay, India);</i></p> <p>16:40 Attitude Determination for Geostationary Satellite Using Optimized Real Time Image Registration Algorithm<br/><i>Mohammad A. Hebaishy (National Authority of Remote Sensing and Space Science (NARSS), Egypt); Osama A. Elsayed (National Authority of Remote Sensing and Space Science (NARSS), Egypt); Ahmed S. Farag (National Authority of Remote Sensing and Space Science (NARSS), Egypt);</i></p> |
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### Session 2P2a

#### Anisotropic and Liquid Crystals Optics

Tuesday PM, August 18, 2009

#### Room B

Organized by Ibrahim Abdulhalim

Chaired by Ibrahim Abdulhalim

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- 13:40 An Analytic Method for Computing the Time-Dependent Electromagnetic Fields in Anisotropic Crystals  
*Valery G. Yakhno (Dokuz Eylul University of Turkey, Turkey); Tatyana M. Yakhno (Izmir University, Turkey);*
- 14:00 All-optically Tunable Photonic Structures Infiltrated with Liquid Crystals  
*Andrey E. Miroshnichenko (The Australian National University, Australia); Etienne Brasselet (Université Bordeaux 1, France); Wieslaw Krolikowski (Australian National University, Australia); Yuri S. Kivshar (Australian National University, Australia);*
- 14:20 Design of Wide Band Tunable Birefringent Filters with Liquid Crystals  
*Ofir Aharon (Ben Gurion University, Israel); Ibrahim Abdulhalim (Ben Gurion University, Israel);*
- 14:40 Assessment of Guided Mode Resonant Structures for Sensing  
*Olga Krasnykov (Ben Gurion University of the Negev, Israel); Mark I. Auslender (Ben Gurion University of the Negev, Israel); Ibrahim Abdulhalim (Ben Gurion University of the Negev, Israel);*
- 15:20 **Coffee Break**
- 16:40 Spin-to-orbital Light Angular Momentum Coupling in Homogeneous Uniaxial Media  
*Etienne Brasselet (Université Bordeaux 1, France); Y. Izdebskaya (The Australian National University, Australia); V. Shvedov (The Australian National University, Australia); A. S. Desyatnikov (The Australian National University, Australia); Wieslaw Krolikowski (Australian National University, Australia); Yuri S. Kivshar (Australian National University, Australia);*
- 17:00 Spin Hall Effect of Light and the Geometrical Phase  
*Shuichi Murakami (Tokyo Institute of Technology, Japan);*
- 17:20 Dynamics of the Reflection and Transmission Processes of a Light Beam Carrying the Orbital Angular Momentum at a Plane Interface  
*Vladimir G. Fedoseyev (University of Tartu, Estonia);*
- 17:40 Spin-orbit Interactions of Light at Nano-scales  
*Konstantin Y. Bliokh (Australian National University, Australia);*

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**Session 2P3a****Systems and Components, Electromagnetic Compatibility**

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**Tuesday PM, August 18, 2009****Room C**Chaired by Reinhard Doebbelin, Rong Zeng

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**Session 2P2b****Geometric Phases and Transport in Polarization and Singular Optics**

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**Tuesday PM, August 18, 2009****Room B**

Organized by Konstantin Y. Bliokh

Chaired by Shuichi Murakami

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- 13:40 Design of Composite Electromagnetic Wave Absorber Made of Fine Aluminum Particles Dispersed in Polystyrene Resin by Controlling Permeability  
*Kenji Sakai (Doshisha University, Japan); Yoichi Wada (Doshisha University, Japan); Yuuki Sato (Doshisha University, Japan); Shinzo Yoshikado (Doshisha University, Japan);*
- 14:00 On the Passivation of AlGaIn/GaN MSM 2-DEG Varactor and Its Electromagnetic Pulse Protection Application  
*Liann-Be Chang (Chang Gung University, Taiwan, R.O.C.); Yi-Cherng Ferng (Chang Gung University, Taiwan, R.O.C.); Chien-Yeu Chen (Chang Gung University, Taiwan, R.O.C.); Atanu Das (Chang Gung University, Taiwan, R.O.C.); Chien-Fu Shih (Chang Gung University, Taiwan, R.O.C.); Hsien-Chin Chiu (Chang Gung University, Taiwan, R.O.C.); Ray-Ming Lin (Chang Gung University, Taiwan, R.O.C.); Ming-Jer Jeng (Chang Gung University, Taiwan, R.O.C.); Ta-Wei Soong (Chang Gung University, Taiwan, R.O.C.);*
- 15:40 Exploiting the Optical Berry Phase for Quantum Logic Using Cavity QED  
*Thaddeus D. Ladd (National Institute of Informatics, Japan); Yoshihisa Yamamoto (National Institute of Informatics, Japan);*
- 16:00 Beam Propagation Effects in Goos-Hanchen and Imbert-fedorov Shifts  
*Andrea Aiello (Max Planck Institute for the Science of Light, Germany); J. P. Woerdman (Leiden University, The Netherlands);*
- 16:20 Singularities in Single Photon Fields  
*Enrique J. Galvez (Colgate University, USA); L. E. Coyle (Colgate University, USA); E. Johnson (Colgate University, USA); B. Reschovsky (Colgate University, USA);*



- 14:20 Investigation of Coupling of EMC Disturbances in Doubly Fed Induction Generators  
*Sebastian Schulz (Otto-von-Guericke-University Magdeburg, Germany); Reinhard Döbbelin (Otto-von-Guericke University of Magdeburg, Germany); Andreas Lindemann (Otto-von-Guericke University of Magdeburg, Germany);*
- 14:40 Inductive Coupling between Wires in Cables with a Grounded Conductor  
*Bernd W. Jaekel (EMC Center, Germany);*
- 15:00 Measurement of Corona Characteristics and Electromagnetic Environment of  $\pm 800$  kV HVDC Transmission Lines under High Altitude Condition  
*Zheng Zhang (Tsinghua University, China); Rong Zeng (Tsinghua University, China); Zhanqing Yu (Tsinghua University, China);*
- 15:20 Coffee Break
- 16:40 Numerical Modelling of Multiple-scattering Problems in Periodic Media  
*J. Coatlaven (INRIA Rocquencourt, France); Patrick Joly (INRIA Rocquencourt, France);*
- 17:00 Diffraction by Slanted Lamellar Gratings  
*S. Campbell (University of Sydney, Australia); Ross C. McPhedran (University of Sydney, Australia); Lindsay C. Botten (University of Technology, Australia); C. Martijn de Sterke (University of Sydney, Australia);*

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**Session 2P4**
**Electromagnetic Field in the Metamaterials and Dispersion Design of Cloaks and Photonic Crystals 1**


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**Tuesday PM, August 18, 2009**
**Room D**

Organized by Ganquan Xie, Tzong-Jer Yang, Chien-Jang Wu

 Chaired by Wen-Chuan Kuo, Yuan-Fong Chau
 

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**Session 2P3b**
**Numerical and Semi-analytic Modelling of Photonic Crystals**


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**Tuesday PM, August 18, 2009**
**Room C**

Organized by Ross C. McPhedran

 Chaired by Ross C. McPhedran
 

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- 15:40 Envelope-Function-Based Asymptotics of Photonic Crystal Waveguides  
*Sahand Mahmoodian (University of Sydney, Australia); Kokou B. Dossou (University of Technology, Australia); Christopher G. Poulton (University of Technology, Australia); Ross C. McPhedran (University of Sydney, Australia); Lindsay C. Botten (University of Technology, Australia); C. Martijn De Sterke (University of Sydney, Australia);*
- 16:00 Accurate Semi-analytic Modelling of Finite Cluster Defects in Photonic Crystals  
*Kokou B. Dossou (University of Technology, Australia); Ross C. McPhedran (University of Sydney, Australia); Lindsay C. Botten (University of Technology, Australia); Christopher G. Poulton (University of Technology, Australia); Sahand Mahmoodian (University of Sydney, Australia); C. Martijn de Sterke (University of Sydney, Australia);*
- 16:20 Revision of the Plane Wave Expansion Method of 2D Photonic Crystals Using Complex Fourier Factorization  
*Roman Antos (Charles University, Czech Republic);*
- 13:20 No Maxwell Electromagnetic Wavefield Excited inside Cloaked Concealment and Broadband GL Cloaks  
*Jianhua Li (Da Yeh University, Taiwan); Ganquan Xie (National Sun Yat-sen University, Taiwan); Lee Xie (GL Geophysical Laboratory, USA); Feng Xie (GL Geophysical Laboratory, USA);*
- 13:40 Design Rules for a Multilayer Fabry-Perot Narrow Band Transmission Filter Containing a Metamaterial Negative-index Defect  
*Heng-Tung Hsu (Yuan Ze University, Taiwan, R.O.C.); Tzong-Jer Yang (Chung-Hua University, Taiwan, R.O.C.); Chien-Jang Wu (National Taiwan Normal University, Taiwan, R.O.C.);*
- 14:00 Scattering Field Interactions and Surface Plasmon Resonance in a Coupled Silver Nanocapsule  
*Yuan-Fong Chau (Chin Yuan University, Taiwan, R.O.C.); Tzong-Jer Yang (Chung-Hua University, Taiwan, R.O.C.);*
- 14:20 Sub-wavelength Microwave Guiding on a Periodically Corrugated Metal Wire  
*Jim-Jei Wu (Chung Hua University, Taiwan, R.O.C.); Tzong-Jer Yang (Chung-Hua University, Taiwan, R.O.C.); Linfang Shen (Zhejiang University, China);*
- 14:40 Microwave Equipment for Investigations of Metamaterials  
*I. A. Karpov (Institute of Solid State Physics of RAS, Russia); Michail Ryurikovich Trunin (Institute of Solid State Physics RAS, Russia);*

15:00 Surface Waves Suppression in a Biaxially Anisotropic Metamaterial Grounded Slab  
*Salma Mirhadi (K. N. Toosi University of Technology, Iran); Manoochehr Kamyab Hessari (K. N. Toosi University of Technology (KNTU), Iran);*

15:20 **Coffee Break**

15:40 Localisations and Perfect Lensing: GRIN Modelling in LHM (Part 2)  
*Philip Ingreby (University of Nottingham, United Kingdom);*

16:00 Almost Complete Absorption of Light in Nanostructured Metallic Coatings: Blackbody Behavior  
*Vasyl G. Kravets (University of Manchester, UK); Fred Schedin (University of Manchester, UK); A. N. Grigorenko (University of Manchester, UK);*

16:20 Theoretical Studies on Wired-based Metamaterials and Its Application in Spatial Beam-Splitter Design  
*Ruey-Bing Hwang (Chiao-Tung University, Taiwan, R.O.C.); Song-Tsuen Peng (Yuan Ze University, Taiwan, R.O.C.);*

16:40 Effects of Array Dimensions on the Resonance Characteristics of SRR Type Metamaterial Arrays with Small Sizes: Simulations and Experiments  
*Evren Ekmekci (Middle East Technical University, Turkey); Kagan Topalli (Middle East Technical University, Turkey); T. Akin (Middle East Technical University, Turkey); Gonul Turhan-Sayan (Middle East Technical University, Turkey);*

17:00 A Novel Dual-band Metamaterial Structure  
*Evren Ekmekci (Middle East Technical University, Turkey); Gonul Turhan-Sayan (Middle East Technical University, Turkey);*

17:20 The Effect of TEM in Generation of Earthquake Associated with Geological Engineering  
*Alireza Bayat (Imam Khomeini International University, Iran); H. Ghafari Fard (Imam Khomeini International University, Iran); Abolfazl Taherpour (International Institute of Earthquake Engineering and Seismology, Iran);*

17:40 Localisations and Perfect Lensing: GRIN Modelling in LHM (Part 1)  
*Philip Ingreby (University of Nottingham, United Kingdom);*

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**Session 2P5**

**Novel Mathematical Methods in Electromagnetics 1**

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**Tuesday PM, August 18, 2009**

**Room E**

Organized by Kazuya Kobayashi, Yury V. Shestopalov

Chaired by Kazuya Kobayashi, Yury V. Shestopalov

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13:20 Fourier Solution of the 2D Dirichlet Problem for the Helmholtz Equation  
*Diego Caratelli (Delft University of Technology, The Netherlands); P. Natalini (Roma Tre University, Italy); P. E. Ricci (Sapienza University of Rome, Italy);*

13:40 *H*-Polarized Plane Wave Diffraction by a Semi-Infinite Parallel-Plate Waveguide with Sinusoidal Wall Corrugation  
*Jianping Zheng (Chuo University, Japan); Kazuya Kobayashi (Chuo University, Japan);*

14:00 Analytical Regularization Approach to Solve MPIE for Axially Symmetrical Strip-like Surface  
*Fatih Dikmen (Gebze Institute of Technology, Turkey); Hüseyin Yigit (Gebze Institute of Technology, Turkey); S. Sinan Baser (Gebze Institute of Technology, Turkey);*

14:20 Improving the Absorbing Boundary Condition in a 3D Maxwell's Equation Solver  
*Franck Assous (44937 Ariel and Bar-Ilan University, Israel);*

14:40 Parallel Power Grid Analysis Using Sensitivities  
*Alexander Korobkov (Sun Microsystems Inc., USA); William Au (Sun Microsystems Inc., USA); Langya Yang (Sun Microsystems Inc., USA); Venkateswaran Subramanian (Sun Microsystems Inc., USA);*

15:00 Diffraction of a Waveguide Mode in a Nanowire  
*Vladimir G. Bordo (University of Southern Denmark, Denmark);*

15:20 **Coffee Break**

15:40 Nonlinear Time Series Analysis of the Ionospheric Measurements  
*Victor A. Eremenko (Institute of Terrestrial Magnetism, Russia); Natalia I. Manaenkova (Institute of Terrestrial Magnetism, Russia);*

- 16:00 Born-Infeld Non-linear Electrodynamics and String Theory  
*Sergei V. Ketov (Tokyo Metropolitan University, Japan);*
- 16:20 Computer System to Assist Selecting Models, Methods and Solution Algorithms for Problems in Electrodynamics  
*Anna S. Samokhina (Institute of Control Sciences, Russia); E. A. Trahtengerz (Institute of Control Sciences, Russia);*
- 16:40 The Virtual Resonator in Embedding Method of Horn Array Antennas  
*Pavel V. Filonov (Moscow State Technical University of Civil Aviation, Russian Federation); Valery L. Kuznetsov (Moscow State Technical University of Civil Aviation (MSTUCA), Russia);*
- 17:00 Numerical Calculation of Diffracted Field by a Circular Disk of Perfect Conductor Using Multiple Precision Arithmetic  
*Takashi Kuroki (Tokyo Metropolitan College of Industrial Technology, Japan); Toshihiko Shibasaki (Tokyo Metropolitan College of Industrial Technology, Japan); Teruhiro Kinoshita (Tokyo Polytechnic University, Japan);*
- 17:20 RCS of a Finite Parallel-plate Waveguide with Four-layer Material Loading  
*Erhao Shang (Japan Radio Co., Ltd., Japan); Jianping Zheng (Panasonic R&D Center China Co., Ltd., China); Kazuya Kobayashi (Chuo University, Japan);*
- 13:40 Vibrations of Electrically Polar Structures in Biosystems Give Rise to Electromagnetic Field: Theories and Experiments  
*Michal Cifra (Czech Technical University, Czech Republic); Jiri Pokorny (Institute of Photonics and Electronics, Academy of Sciences of the Czech Republic, Czech Republic); Frantisek Jelinek (Institute of Photonics and Electronics, Academy of Sciences of the Czech Republic, Czech Republic); Ondřej Kučera (Czech Technical University, Czech Republic);*
- 14:00 A Value-added Method to Design a Compact and Low Cost Hairpin Line Microstrip Bandpass Filter for Communication Systems  
*Jagdish Shivhare (Institute of Technology and Management, India); S. B. Jain (Indira Gandhi Institute of Technology, Indraprastha University Campus, India);*
- 14:20 Analytical Model of Resonant Dryer Textile  
*Jan Vrba (Czech Technical University, Czech Republic); Marika Pourova (Czech Technical University in Prague, Czech Republic);*
- 14:40 TEM Applicators with Enlarged Effective Aperture  
*Jan Vrba (Czech Technical University, Czech Republic); Jaroslav Vorlicek (CTU in Prague, Czech Republic); Jan Borovka (CTU in Prague, Czech Republic);*
- 15:00 Evaluation of Microwave Applicators for Medical Applications  
*Jan Vrba (Czech Technical University, Czech Republic); Ladislav Oppl (Czech Technical University in Prague, Czech Republic);*

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**Session 2P6a**

**Applicators for Medical and Industrial Applications of EM Field**

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**Tuesday PM, August 18, 2009**

**Room F**

Organized by Jan Vrba

Chaired by Jan Vrba

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- 13:20 Rigorous Electromagnetic Analysis of Domestic Induction Heating Appliances  
*Graziano Cerri (Universita Politecnica delle Marche, Italy); Sergey A. Kovyryalov (Universita Politecnica delle Marche, Italy); Valter Mariani Primiani (Universita Politecnica delle Marche, Italy); Paola Russo (Universita Politecnica delle Marche, Italy);*

15:20 **Coffee Break**

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**Session 2P6b**

**Medical Electromagnetics, RF Biological Effect**

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**Tuesday PM, August 18, 2009**

**Room F**

Chaired by Niels Kuster, Alberto Foletti

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- 15:40 Influence of Weak Combined Static and Low-frequency Alternating Magnetic Fields on Tumor Growth of Ehrlich Ascites Carcinoma in Mice  
*Vadim V. Novikov (Institute of Cell Biophysics, Russian Academy of Sciences, Russia); G. V. Novikov (Institute of Cell Biophysics, Russian Academy of Sciences, Russia); V. O. Ponomarev (Institute of Cell Biophysics, Russian Academy of Sciences, Russia); V. V. Kuvichkin (Institute of Cell Biophysics, Russian Academy of Sciences, Russia); Eugenii E. Fesenko (Institute of Cell Biophysics, Russian Academy of Sciences, Russia);*
- 16:00 Closed-loop Inductive Link for Wireless Powering of a Retinal Prosthesis  
*David C. Ng (University of Melbourne, Australia); S. Bai (The University of Melbourne, Australia); J. Yang (The University of Melbourne, Australia); N. Tran (The University of Melbourne, Australia); E. Skafidas (University of Melbourne, Australia);*
- 16:20 Merger of Two Different Dosimetry Rationales  
*Sergey Yu. Perov (RAMS Institute of Occupational Health, Russia); Quirino Balzano (University of Maryland, USA); Niels Kuster (Foundation for Research on Information Technologies in Society, Switzerland);*
- 16:40 Microwave Effect on Proteins in Solution — Fluorescence Polarization Studies  
*I. Barak (The Hebrew University of Jerusalem, Israel); Michael Golosovsky (The Hebrew University of Jerusalem, Israel); Dan Davidov (The Hebrew University of Jerusalem, Israel);*
- 17:00 Ion Cyclotron Bioresonance in Regenerative Medicine  
*Alberto Foletti (Medico Chirurgo, Specialista in Chirurgia Generale, Italy); Settimio Grimaldi (Istituto di Neurobiologia e Medicina Molecolare, C.N.R., Italy);*
- 17:20 A Definition of Thermophysiological Parameters of SAM Materials for Temperature Rise Calculation in the Head of Cellular Handset User  
*Salah I. Yahya Al-Mously (Academy of Graduate Studies, Libya); Marai M. Abousetta (Academy of Graduate Studies, Libya);*
- 17:40 Why Plants Do Not Suffer from Cancer  
*Ahmad Majd (Islamic Azad University, Tehran North Branch, Iran); Azita Shabrangi (Tehran Tarbiat Moallem University, Iran);*

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**Session 2P7**
**Antenna and Array: Theory and Design**


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**Tuesday PM, August 18, 2009**
**Room G**

 Chaired by Johnson Jenn-Hwa Wang, Wen Xun Zhang
 

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- 13:20 A Class of Broadband Planar Traveling-wave Antennas and Their Latest Applications  
*Johnson Jenn-Hwa Wang (Wang Electro-Opto Corporation, USA);*
- 13:40 Phase-only Synthesis of the Radiation Pattern of an Antenna Array with Quantized Phase Shifters  
*Alexander S. Kondratiev (Moscow Power Engineering Institute (Technical University), Russia);*
- 14:00 Stage-by-stage Testing Technique of Active Phased Array  
*M. V. Markosyan (Yerevan Telecommunication Research Institute, Republic of Armenia); Vahan H. Avetisyan (Yerevan Telecommunication Research Institute, Republic of Armenia); S. G. Eyremjyan (Yerevan Telecommunication Research Institute, Republic of Armenia);*
- 14:20 Experimental Investigations of Adaptive Reactance Parasitic Antenna Dipole Array  
*Maxim O. Shuralev (Nizhny Novgorod State University, Russia); A. L. Umnov (Nizhny Novgorod State University, Russia); A. Mainwaring (Intel Research Laboratory at Berkeley, USA); M. A. Sokolov (Nizhny Novgorod State University, Russia); A. U. Eltsov (Nizhny Novgorod State University, Russia);*
- 14:40 Planar Array Antenna with Parasitic Elements for Beam Steering Control  
*Mohd Tarmizi Ali (Universiti Teknologi Mara (UiTM), Malaysia); Tharek Abd Rahman (Universiti Teknologi Malaysia, Malaysia); Muhammad Ramee Bin Kamarudin (Universiti Teknologi Malaysia, Malaysia); M. N. Md Tan (Universiti Teknologi Mara (UiTM), Malaysia); Ronan Sauleau (University of Rennes 1, France);*
- 15:00 Multiband MIMO Antenna with a Band Stop Matching Circuit for Next Generation Mobile Applications  
*Minseok Han (Hanyang University, Korea); Jae-Hoon Choi (Hanyang University, Korea);*
- 15:20 **Coffee Break**

- 15:40 Dual ISM Band Microstrip Antenna for Satellite Internet Service  
*Byoungchul Kim (Ajou University, Korea); Sangwoon Lee (Ajou University, Korea); Joongyu Ryu (ETRI, Korea); Hosung Choo (Hongik University, Korea); Hojin Lee (ETRI, Korea); Ikmo Park (Ajou University, Korea);*
- 16:00 Directional GPS Antenna for Indoor Positioning Applications  
*Kerem Özsoy (Sabanci University, Turkey); İbrahim Tekin (Sabanci University, Turkey);*
- 16:20 Printed Dipole Array Fed with Parallel Stripline for Ku-band Applications  
*M. Doğan (Sabanci University, Turkey); Kerem Özsoy (Sabanci University, Turkey); İbrahim Tekin (Sabanci University, Turkey);*
- 16:40 A Circular Disc Monopole UWB Antenna Fed with a Tapered Microstrip Line on a Circular Ground  
*Yangjun Zhang (Ryukoku University, Japan); Masahiro Shimasaki (Ryukoku University, Japan); Toyokatsu Miyashita (Ryukoku University, Japan);*
- 17:00 Improved Tapered Slot-line Antennas Loaded by Grating  
*Peng Zhang (Southeast University, China); Shu Jun Tand (Southeast University, China); Wen Xun Zhang (Southeast University, China);*
- 17:20 Using High Impedance Ground Plane for Improving Radiation in Monopole Antenna and Its Unusual Reflection Phase Properties  
*Maryam Abootorabi (K. N. Toosi University of Technology, Iran); Mohsen Kaboli (K. N. Toosi University of Technology, Iran); Seyed Abdullah Mirtaheri (K. N. Toosi University of Technology, Iran); Mohammad Sadegh Abrishamian (K. N. Toosi University of Technology, Iran);*
- 17:40 The Impact of New Feeder Arrangement on RDRA Radiation Characteristics  
*Ahmed S. Elkorany (Menoufia University, Egypt); A. A. Sharshar (Menoufia University, Egypt); S. M. Elthalafawy (Menoufia University, Egypt);*
- 13:20 Vector Diffraction Integrals for Solving Inverse Problems of Radio-holographic Sensing of the Earth's Surface and Atmosphere  
*A. G. Pavelyev (Institute of Radio Engineering and Electronics of Russian Academy of Sciences (IRE RAS), Russia);*
- 13:40 Identification and Localization of Layers in the Atmosphere and Ionosphere Based on Observing Variations in the Phase and Amplitude of Radio Waves along the Satellite-to-satellite Path  
*A. G. Pavelyev (Institute of Radio Engineering and Electronics of Russian Academy of Sciences (IRE RAS), Russia); Yuei-An Liou (National Central University, Taiwan); J. Wickert (GeoForschungsZentrum, Germany); A. A. Pavelyev (Institute of Radio Engineering and Electronics of Russian Academy of Sciences (IRE RAS), Russia);*
- 14:00 Peculiarities and Perspectives of Network Digital Ionospheric Station "PARUS"  
*Alexander L. Karpenko (Institute of Terrestrial Magnetism, Ionosphere and Radio Wave Propagation (IZMIRAN), Russia); Ljudmila N. Leshchenko (Institute of Terrestrial Magnetism, Ionosphere and Radio Wave Propagation (IZMIRAN), Russia); Natalia I. Manaenkova (Institute of Terrestrial Magnetism, Russia);*
- 14:20 Active Space Experiments with the Use of the Transport Spacecraft "Progress" and Irkutsk IS Radar  
*Alexander P. Potekhin (Institute of Solar-Terrestrial Physics of Siberian Branch of Russian Academy of Sciences, Russia); Vitaliy Victorovich Khakhinov (Institute of Solar-Terrestrial Physics of Siberian Branch of Russian Academy of Sciences, Russia); Andrey V. Medvedev (Institute of Solar-Terrestrial Physics of Siberian Branch of Russian Academy of Sciences, Russia); Dmitry S. Kushnarev (Institute of Solar-Terrestrial Physics of Siberian Branch of Russian Academy of Sciences, Russia); Valentin P. Lebedev (Institute of Solar-Terrestrial Physics of Siberian Branch of Russian Academy of Sciences, Russia); Boris G. Shpynev (Institute of Solar-Terrestrial Physics of Siberian Branch of Russian Academy of Sciences, Russia);*
- 14:40 Influence of Ionospheric Disturbances on HF Propagation  
*Vladimir I. Kurkin (Institute of Solar-Terrestrial Physics SB RAS, Russia);*

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**Session 2P8**
**Electromagnetic Probing of Atmosphere and Ionosphere**
**Tuesday PM, August 18, 2009**
**Room H**

Organized by Viacheslav E. Kunitsyn

 Chaired by Viacheslav E. Kunitsyn
 

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- 15:00 Detection of Heating Effects Due to Powerful Radiowaves Propagation by Irkutsk Complex for Passive Doppler Sounding of the Ionosphere  
*Oleg I. Bergardt (Institute of Solar-Terrestrial Physics SB RAS, Russia); V. G. Abramov (Institute of Solar-Terrestrial Physics SB RAS, Russia); Vladimir I. Kurkin (Institute of Solar-Terrestrial Physics SB RAS, Russia); G. A. Zhrebtsov (Institute of Solar-Terrestrial Physics SB RAS, Russia);*
- 15:20 **Coffee Break**
- 15:40 Ionosphere Wave Packets Excited by the Solar Terminator: AGW or MHD Origin?  
*Edward L. Afraimovich (Institute of Solar-Terrestrial Physics (ISTP), Siberian Branch of Russian Academy of Sciences, Russia); S. V. Voyeikov (Institute of Solar-Terrestrial Physics (ISTP), Siberian Branch of Russian Academy of Sciences, Russia); I. K. Edemskiy (Institute of Solar-Terrestrial Physics (ISTP), Siberian Branch of Russian Academy of Sciences, Russia); Yu. V. Yasyukevich (Institute of Solar-Terrestrial Physics (ISTP), Siberian Branch of Russian Academy of Sciences, Russia);*
- 16:00 Radio Probing and Tomographic Imaging of the Ionosphere  
*Viacheslav E. Kunitsyn (M. Lomonosov Moscow State University, Russia); E. D. Tereshchenko (Polar Geophysical Institute RAS, Russia); E. S. Andreeva (M. Lomonosov Moscow State University, Russia); I. A. Nesterov (M. Lomonosov Moscow State University, Russia); M. O. Nazarenko (M. Lomonosov Moscow State University, Russia);*
- 16:20 Intercomparison between Different Schemes of Electromagnetic Probing  
*E. S. Andreeva (M. Lomonosov Moscow State University, Russia); S. A. Kalashnikova (M. Lomonosov Moscow State University, Russia); Viacheslav E. Kunitsyn (M. Lomonosov Moscow State University, Russia);*
- 16:40 Theoretical Investigation of the Ultrawideband FMCW Signal Propagation through Ionospheric Radiochannel  
*Nikolay V. Ilyin (Institute of Solar-Terrestrial Physics of Siberian Branch of Russian Academy of Sciences, Russia); Vitaliy Victorovich Khakhinov (Institute of Solar-Terrestrial Physics of Siberian Branch of Russian Academy of Sciences, Russia);*
- 17:00 Impact of the Small Scale Fluctuations of the Ionospheric Plasma on the Performance of the Subsurface Radar Sounder  
*Yaroslav A. Ilyushin (Moscow State University, Russia);*
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- Session 2P9**  
**Theory and Methods of Digital Signal and Image Processing**
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- Tuesday PM, August 18, 2009**  
**Room I**  
Organized by Victor Filippovich Kravchenko  
Chaired by Victor Filippovich Kravchenko
- 
- 13:20 Nongaussian Kravchenko-Rvachev Distributions in Radio Physical Applications  
*Victor Filippovich Kravchenko (Kotel'nikov Institute of Radio Engineering and Electronics of RAS, Russian Federation); O. V. Kravchenko (Bauman Moscow State Technical University, Russian Federation); A. R. Safin (Kotel'nikov Institute of Radio Engineering and Electronics of RAS, Russian Federation);*
- 13:40 The Theory of Spectral Estimation of Signals and Generalized Kravchenko-Kotel'nikov-Levitans Theorems  
*Victor Filippovich Kravchenko (Kotel'nikov Institute of Radio Engineering and Electronics of RAS, Russian Federation); Dmitry V. Churikov (Kotel'nikov Institute of Radio Engineering and Electronics of RAS, Russian Federation);*
- 14:00 Application of the Theory of R-functions to the Analysis and Synthesis of Multidimensional Signals  
*Dmitry V. Churikov (Kotel'nikov Institute of Radio Engineering and Electronics of RAS, Russian Federation);*
- 14:20 An Application Generalized Kravchenko-Kotel'nikov Theorem on Atomic Functions  $f_{upN}(t)$  to Interpolation Nonstationary Random Processes  
*O. V. Kravchenko (Bauman Moscow State Technical University, Russian Federation); A. R. Safin (Kotel'nikov Institute of Radio Engineering and Electronics of RAS, Russian Federation);*
- 14:40 Atomic Functions in Problems of Analysis and Synthesis of Optimal Discrete Receivers  
*O. V. Kravchenko (Moscow State Technical University named by N. E. Bauman, Russian Federation); A. R. Safin (Kotel'nikov Institute of Radio Engineering and Electronics of RAS, Russian Federation);*

- 15:00 Construction of New Kravchenko-Kotel'nikov-Chebyshev-Legendre Spectral Kernels and Their Application in Digital Multidimensional Signals Processing  
*Dmitry V. Churikov (Kotel'nikov Institute of Radio Engineering and Electronics of RAS, Russian Federation);*
- 15:20 **Coffee Break**
- 15:40 Short Range Radar with MIMO Antenna System and Multifrequency Sounding Signal  
*Valery Victorovich Chapursky (Bauman Moscow State Technical University, Russia); Sergey I. Ivashov (Bauman Moscow State Technical University, Russia); I. A. Vasiliev (Bauman Moscow State Technical University, Russia); A. V. Zhuravlev (Bauman Moscow State Technical University, Russia);*
- 16:00 A Wavelet Technique to Extract the Backscatter Signatures from SAR Images of the Sea  
*Stefano Zecchetto (Istituto Scienze dell'Atmosfera e del Clima (ISAC), Italy); Francesco De Biasio (Istituto Scienze dell'Atmosfera e del Clima (ISAC), Italy); Paolo Trivero (Universita' del Piemonte Orientale, Italy);*
- 16:20 Orthogonal Kravchenko Wavelets in Digital Signal and Image Processing  
*Y. Y. Konovalov (Bauman Moscow State Technical University, Russia); A. V. Yurin (Bauman Moscow State Technical University, Russia);*
- 16:40 Radar-target Identification Using Exponential Single-pulse Synthesis  
*Juan D. Morales León (Telefónica España, Spain); David Blanco (Universidad de Granada, Spain); Diego P. Ruiz Padillo (University of Granada, Spain); María C. Carrión (Universidad de Granada, Spain);*
- 17:00 Signal Processing and Time Delay Resolution of Noise Radar System Based on Retrodirective Antennas  
*Valery Victorovich Chapursky (Bauman Moscow State Technical University, Russia); Vladimir Alekseevich Cherepenin (Institute of Radio Engineering and Electronics, Russian Academy of Sciences, Russia); Valery Ivanovich Kalinin (Institute of Radio Engineering and Electronics, Russian Academy of Sciences, Russia);*
- 17:20 Fractal Properties, Structural Entropy and Color of Printed Circuits Boards Processed by Laser Treatment  
*B. Varga (Temic Telefunken Microelectronic Hungary Kft., Hungary); Szilvia Nagy (Széchenyi István University, Hungary); Imre Mojzes (Budapest University of Technology and Economics, Hungary);*
- 17:40 Weak Signals Detection, Recovery Algorithms and Real Time Processing  
*Liping Chen (Institute of Electronics, Chinese Academy of Sciences, China); Xiaojuan Zhang (Institute of Electronics, Chinese Academy of Sciences, China);*
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- Session 3AP**  
**Poster Session 1**
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- Wednesday AM-PM, August 19, 2009**  
**9:00 AM - 4:00 PM**  
**Room I**
- 
- 1 Effective Constitutive Model of Grain-oriented Fe-Si Laminations Core under Orthogonal Magnetization  
*Zhengrong Jiang (North China University of Technology, China); Zhengxi Li (North China University of Technology, China); Dehui Sun (North China University of Technology, China);*
- 2 Prototype Design, Hardware and Construction of Compact and Tuneable X-band Pre-bunched Free Electron Maser  
*Fareq Malek (University Malaysia Perlis (UniMAP), Malaysia); James Lucas (The University of Liverpool, UK); Yi Huang (The University of Liverpool, UK); R. Badlishah Ahmad (University Malaysia Perlis (UniMAP), Malaysia); Badr Muhammad Abdullah (King Fahd University of Petroleum and Minerals (KFUPM), Kingdom of Saudi Arabia); Azlan Awang (TELECOM Bretagne, France);*
- 3 A Novel Electro-magnetic Transient Analysis Method Based on Orthogonal Projection Approach  
*Hengxu Ha (Shandong University of Technology, China); Yuzhen Tan (Shandong University of Technology, China); Bo Chen (Shaanxi Electric Power Company, China); Z. Q. Bo (AREVA T&D UK Limited, UK);*
- 4 Analytical Expressions of the Magnetic Field Created by Tile Permanent Magnets of Various Magnetization Directions  
*Romain Ravaud (Universite du Maine, France); G. Lemarquand (Universite du Maine, France);*
- 5 Calculation of DC Grounding Electrodes with Open-boundary Domain by the FEM with Hemispherical Kelvin Transformation  
*Fang Zhang (Tsinghua University, China); Jian-sheng Yuan (Tsinghua University, China); Zong Wei (North China Electric Power University, China);*

- 6 A New Electromagnetic Parameter Model of Giant Magnetostriction Material  
*Liyi Li (Harbin Institute of Technology, China); Baiping Yan (Harbin Institute of Technology, China); Chengming Zhang (Harbin Institute of Technology, China);*
- 7 Clausius-Mossotti Relations for Monolayer with Spatial Dispersion  
*Alexey A. Tishchenko (State University, Russia); M. I. Ryazanov (State University, Russia); M. N. Strikhanov (State University, Russia);*
- 8 Local Field Effects for Dielectric Function of Semi-infinite Dielectric Covered with a Monolayer of Other Particles  
*M. I. Ryazanov (State University, Russia); Alexey A. Tishchenko (State University, Russia); M. N. Strikhanov (State University, Russia);*
- 9 The Equivalence between Time Reversed Means and Employment of Left Hand Materials to Overcome the Diffraction Limit  
*Juan Manuel Velázquez Arcos (Universidad Autónoma Metropolitana, México); J. Granados-Samaniego (Universidad Autónoma Metropolitana, México); José Luis Fernández-Chapou (Universidad Autónoma Metropolitana, México); A. L. Rodríguez-Soria (Universidad Autónoma Metropolitana, México);*
- 10 Hertz Tensor, Current Potentials and Their Norm Transformations  
*José Luis Fernández-Chapou (Universidad Autónoma Metropolitana, México); J. Granados-Samaniego (Universidad Autónoma Metropolitana, México); C. A. Vargas (Universidad Autónoma Metropolitana, México); Juan Manuel Velázquez Arcos (Universidad Autónoma Metropolitana, México);*
- 11 Far-field Spectral Characteristics of a Broad Band Light Source for One Side Movable Single Slit  
*Pin Han (National Chung Hsing University, Taiwan);*
- 12 Electrostatics of a New Type of Pyroelectric Accelerator — The Pyroelectric Channel Accelerator  
*V. Sandomirsky (Bar-Ilan University, Israel); A. V. Butenko (Bar-Ilan University, Israel); Y. Schlesinger (Bar-Ilan University, Israel); R. Levin (The College of Judea and Samaria, Israel);*
- 13 Near Field Coupling with Small RFID Objects  
*Arnaud Vena (Affiliated Computer Services Solutions France SAS, France); Pascal Roux (Affiliated Computer Services Solutions France SAS, France);*
- 14 Chirality of the Electromagnetic Field and Its Spectroscopic Significance  
*Yiqiao Tang (Harvard University, USA); Adam E. Cohen (Harvard University, USA);*
- 15 Mutual Inductance Calculation between Circular Coils with Lateral and Angular Misalignment  
*Slobodan I. Babic (École Polytechnique de Montréal, Canada); Cevdet Akyel (École Polytechnique de Montréal, Canada); Mohamed-Mehdi Mahmoudi (École Polytechnique de Montréal, Canada);*
- 16 Optimization Research on Electric Field of 500 kV Standard Capacitor  
*Shizuo Li (Guangxi University, China); Shiyu Kang (Guangxi Vocational & Technical Institute of Industry, China);*
- 17 On Analog Approach for Current Lissajous Undulator  
*S. Miclos (National Institute of R&D for Optoelectronics INOE-2000, Romania); D. Savastru (National Institute of R&D for Optoelectronics INOE-2000, Romania); V. I. R. Niculescu (National Institute of R&D for Lasers, Plasma and Radiation Physics — INF-PLR, Romania);*
- 18 Analysis for Squarely V-shaped Groove Guide  
*Yinqin Cheng (Northwest University for Nationalities, China); Guojian Li (Northwest University for Nationalities, China); Shuwen Wang (Northwest University for Nationalities, China); Bin-Zhao Cao (Lanzhou University, China); Fu Yong Xu (Lanzhou University, China);*
- 19 Study on Trapezoidal Groove Guide with Arbitrary Inclination Angle  
*Yinqin Cheng (Northwest University for Nationalities, China); Guojian Li (Northwest University for Nationalities, China); Shuwen Wang (Northwest University for Nationalities, China); Bin-Zhao Cao (Lanzhou University, China); Fu Yong Xu (Lanzhou University, China);*
- 20 An Efficient Algorithm for Combining Linear Lumped Networks with the FDTD Method  
*Hsin-Hsiang Su (National Sun Yat-Sen University, Taiwan); Chih-Wen Kuo (National Sun Yat-sen University, Taiwan); Toshihide Kitazawa (Ritsumeikan University, Japan);*
- 21 Distribution of Magnetic Field in the Working Space of the Superconductor HGMS  
*Antoni Ciesla (University of Science and Technology, Poland);*
- 22 Dispersion Characteristics of Dielectric Loaded V Ridge-Trough Waveguide  
*Guojian Li (Northwest University for Nationalities, China); Shuwen Wang (Northwest University for Nationalities, China); Yinqin Cheng (Northwest University for Nationalities, China); Fu Yong Xu (Lanzhou University, China);*



- 23 Analysis of the Pulse-Modulated Microwave Propagation into 3D Anisotropic Heart Model by SIE Method  
*Liudmila Nickelson (Semiconductor Physics Institute, Lithuania); Steponas Asmontas (Semiconductor Physics Institute, Lithuania); Romanas Martavicius (Gediminas Technical University, Lithuania); Vadim Engelson (Linkoping University, Sweden);*
- 24 Analysis of Slow and Fast Modes of Lossy Ceramic SiC Waveguides  
*Liudmila Nickelson (Semiconductor Physics Institute, Lithuania); Steponas Asmontas (Semiconductor Physics Institute, Lithuania); Tatjana Gric (Semiconductor Physics Institute, Lithuania); Romanas Martavicius (Gediminas Technical University, Lithuania);*
- 25 Mathematical Model of an Infinite Periodic Open Ended Slot Lines Array Antenna  
*Andrey A. Prilutskiy (Scientific Research Institute of Long Distance Radio Communication, Russia);*
- 26 Mathematical Model of an Infinite Periodic Open Ended Waveguide Array Antenna with Multilayered Dielectric Filling in a Cross Section  
*Andrey A. Prilutskiy (Scientific Research Institute of Long Distance Radio Communication, Russia);*
- 27 On the Preconditioning of the Algebraic Linear Systems Arising from the Discretization of the EFIE  
*Giovanni Angiulli (University Mediterranea, Italy); P. Quattrone (University Mediterranea, Italy); Salvatore Tringali (University Mediterranea, Italy);*
- 28 The Effective 3D Modeling of Electromagnetic Waves' Evolution in Photonic Crystals and Metamaterials  
*Andrey V. Zakirov (Moscow Institute of Physics and Technology, Russia); V. D. Levchenko (Keldysh Institute of Applied Mathematics, Russia);*
- 29 Transient Response Analysis of Conducting Bodies by Combination of MoM/AWE and Vector Fitting Techniques  
*Dariusz Wojcik (Silesian University of Technology, Poland); Maciej Surma (Silesian University of Technology, Poland);*
- 30 The Numerical Solution of the Three-dimensional Helmholtz Equation with Sommerfeld Boundary Conditions  
*Geza Hegedus (Pannon University, Hungary);*
- 31 Analysis of Complex Radiating Structures by Hybrid FDTD/MoM-PO Method  
*A. Noga (Silesian University of Technology, Poland); T. Topa (Silesian University of Technology, Poland); Dariusz Wojcik (Silesian University of Technology, Poland);*
- 32 On the Relationship between Nonuniqueness of Electromagnetic Scattering Integral Equations and Krylov Subspace Methods  
*Giovanni Angiulli (University Mediterranea, Italy); P. Quattrone (University Mediterranea, Italy); Salvatore Tringali (University Mediterranea, Italy);*
- 33 Finite-difference Time-domain Simulation with Higher-order Difference Scheme  
*Yih-Peng Chiou (National Taiwan University, Taiwan); C.-H. Du (National Taiwan University, Taiwan);*
- 34 Field Dependence of Complex Permittivity of LDPE Filled with PZT  
*Serguei Nikolaevich Tkachenko (Tomsk Polytechnic University, Russia); O. S. Gefle (Tomsk Polytechnic University, Russia); S. M. Lebedev (Tomsk Polytechnic University, Russia);*
- 35 Polymeric Blends and Compositions with High Permittivity  
*Serguei Nikolaevich Tkachenko (Tomsk Polytechnic University, Russia); O. S. Gefle (Tomsk Polytechnic University, Russia); S. M. Lebedev (Tomsk Polytechnic University, Russia);*
- 36 Magnetic Field Created by Thin Wall Solenoids and Axially Magnetized Cylindrical Permanent Magnets  
*G. Lemarquand (Universite du Maine, France); V. Lemarquand (Universite du Maine, France); S. Babic (École Polytechnique de Montréal, Canada); C. Akyel (École Polytechnique de Montréal, Canada);*
- 37 Method for Calculating Interference Protection Ratio of ATSC System from Mobile WiMAX System  
*Sung Woong Choi (Electronics and Telecommunications Research Institute (ETRI), Korea); Wang Rok Oh (Chungnam National University, Korea); Heon Jin Hong (Electronics and Telecommunications Research Institute (ETRI), Korea);*
- 38 Electric Field Calculation of High Voltage Transmission Line  
*Yong Lu (Guangxi Electric Power Institute of Vocational Training, China);*
- 39 Investigation of Dispersion Characteristics of the Open Complicated Shape Rod with a Channel Inside  
*Liudmila Nickelson (Semiconductor Physics Institute, Lithuania); Dmitriy Zylkov (Semiconductor Physics Institute, Lithuania); Steponas Asmontas (Semiconductor Physics Institute, Lithuania); Romanas Martavicius (Gediminas Technical University, Lithuania);*

- 40 Coupling onto the Two-wire Transmission Line Enclosed in Cavities with Apertures  
*Ying Li (National University of Defence Technology, China); Guyan Ni (National University of Defence Technology, China); Jianshu Luo (National University of Defence Technology, China); Ji-Yuan Shi (National University of Defence Technology, China); Xufeng Zhang (National University of Defence Technology, China);*
- 41 Surface Mounting Packaging of SAW Low-loss High Stop-band Rejection Filter  
*Peng Fu (Nanjing Research Institute of Electronic Technology, China); Xiaoqin Hao (Nanjing Research Institute of Electronic Technology, China);*
- 42 An LTCC Dual-band Filter Based on Two Different Mechanisms  
*Guo-Shu Huang (National Taiwan University, Taiwan, R.O.C.); Chun Hsiung Chen (National Taiwan University, Taiwan, R.O.C.);*
- 43 Design of the 2.4 GHz Band-pass Filter for Flexible Appliance  
*Jin-Sup Kim (Korea Electronics Technology Institute, R. O. Korea); Kyu-Bok Lee (Korea Electronics Technology Institute, R. O. Korea);*
- 44 Design of a Compact Narrow Band Pass Filter Using the Rectangular CSRRs  
*Dong-Muk Choi (Kyungpook National University, Korea); Dang-Oh Kim (Kyungpook National University, Korea); Che-Young Kim (Kyungpook National University, South Korea);*
- 45 Quad Flat Non-lead Package Characterization and Circuit Modeling  
*Michael Sigalov (Ben-Gurion University of the Negev, Israel); Dror Regev (Ellipse-RFIC Array Devices, Israel); Evgeny Kabatsky (Sami Shamoon College of Engineering, Israel); Reuven Shavit (Ben-Gurion University of the Negev, Israel);*
- 46 A V-band Amplifier with Negative Resistance Using 0.13- $\mu\text{m}$  CMOS Process  
*Jeng-Han Tsai (Yuan Ze University, Taiwan, R.O.C.); Fang-Yao Kuo (Yuan Ze University, Taiwan, R.O.C.); Fu-Hung Cheng (National Taiwan University, Taiwan);*
- 47 A New Bandstop Cascaded Defected Microstrip Structure (CDMS) Filter with 10 GHz Symmetrical Bandwidth  
*Morteza Kazerooni (Iran University of Science and Technology (IUST), Iran); Ahmad Cheldavi (Iran University of Science and Technology, Iran); Mahmoud Kamarei (University of Tehran, Iran);*
- 48 A Planar Yagi-Uda Antenna with High Input Resistance for Continuous-wave Terahertz Photomixer  
*Kyunggho Han (Ajou University, Korea); Troung Khang Nguyen (Ajou University, Korea); Haewook Han (POSTECH, Korea); Ikmo Park (Ajou University, Korea);*
- 49 A Fast Approximate Method for Analyzing the Spurious Emissions from a Mitered Microstrip Bend Circuit  
*Han-Chang Hsieh (Graduate Institute of Communication Engineering, National Taiwan University, Taiwan); Jay-San Chen (Metrology and Inspection (BSMI) under the Ministry of Economic Affairs, Taiwan); Chi-Hsueh Wang (Graduate Institute of Communication Engineering, National Taiwan University, Taiwan); Cheng-Nan Chiu (Da-Yeh University, Taiwan); Ming-Shing Lin (National Yunlin University of Science and Technology, Taiwan); Chun Hsiung Chen (National Taiwan University, Taiwan);*
- 50 A BOR-FEM/Mode Expansion Analysis Based on the Helmholtz Weak Form  
*Hongchao Wu (Nanjing Research Institute of Electronics Technology, China);*
- 51 Radiated Emissions from Microstrip Ultra-Wideband Bandpass Filters  
*Chung-Hwa Wu (National Taiwan University, Taiwan); Han-Chang Hsieh (National Taiwan University, Taiwan); Chun Hsiung Chen (National Taiwan University, Taiwan);*
- 52 Design and Simulation of a Wideband Dualpolarized Conical Doubleridged Horn Antenna  
*Maryam Moshiri (Shiraz University, Iran); Habibollah Abiri (Shiraz University, Iran); Ali A. Dastranj (Shiraz University, Iran);*
- 53 Beam Steering Capability Based on Microstrip CRLH Transmission Line  
*Mostafa Barati (K. N. Toosi University of Technology (KNTU), Iran); Manouchehr Kaamyab (K. N. Toosi University of Technology (KNTU), Iran); Ali Azimi Fashi (K. N. Toosi University of Technology (KNTU), Iran);*
- 54 A Novel Dual-frequency Planar Inverted-F Antenna  
*Jian-Wu Zhang (Hangzhou Dianzi University, China); Yi Liu (Hangzhou Dianzi University, China);*
- 55 Influence of the Human Head in the Radiation of a Mobile Antenna  
*Pedro Renato Tavares Pinho (Instituto Superior de Engenharia de Lisboa (ISEL), Portugal); João Carlos Ferreira De Almeida Casaleiro (Instituto Superior de Engenharia de Lisboa (ISEL), Portugal);*

- 56 A Novel Small Resonant Antenna Using the Meta-materials Array  
*Ali Azimi Fashi (K. N. Toosi University of Technology (KNTU), Iran); Manoochehr Kamyab Hessari (K. N. Toosi University of Technology (KNTU), Iran); Mostafa Barati (K. N. Toosi University of Technology (KNTU), Iran);*
- 57 Radar Cross Section Measurements and Simulations of a Model Airplane in the X-band  
*Inácio M. Martin (Instituto Tecnológico de Aeronáutica, Brazil); Mauro Angelo Alves (Instituto Tecnológico de Aeronáutica, Brazil); G. G. Peixoto (Instituto Tecnológico de Aeronáutica, Brazil); Mirabel C. Rezende (Instituto de Aeronáutica e Espaço, Brazil);*
- 58 A Medium Open Range Radar Cross Section Facility in Brazil  
*G. G. Peixoto (Instituto Tecnológico de Aeronáutica, Brazil); Mauro Angelo Alves (Instituto Tecnológico de Aeronáutica, Brazil); Inácio M. Martin (Instituto Tecnológico de Aeronáutica, Brazil); Mirabel C. Rezende (Instituto de Aeronáutica e Espaço, Brazil);*
- 59 Suppression of Antenna's Radiation Sidelobes Using Particle Swarm Optimisation  
*Nik Noordini Nik Abd Malik (Universiti Teknologi Malaysia, Malaysia); Mazlina Esa (Universiti Teknologi Malaysia, Malaysia); Sharifah Kamilah Syed Yusof (Universiti Teknologi Malaysia, Malaysia); Jayaseelan Marimuthu (Universiti Teknologi Malaysia, Malaysia);*
- 60 A New and Innovative Conformal Dipole Configuration Very Close to a Ground Plane  
*Bin Zhou (Communication University of China, China); James Breakall (Communication University of China, China); Kyle Labowski (Communication University of China, China); Guizhen Lu (Communication University of China, China);*
- 61 Small Size and Multiband Monopole F-shaped Antenna Configuration for Wireless Communications Applications  
*Fawwaz Jinan Jibrael (University of Technology, Iraq); Majd F. Yuhanna (University of Technology, Iraq);*
- 62 Design and Manufacturing the Balance Amplifier Using the Lange Coupler in X-Band  
*Mohammad Nikfal Azar (K. N. Toosi University of Technology, Iran); Manoochehr Kamyab (K. N. Toosi University of Technology, Iran); Mehrdad Djauid (K. N. Toosi University of Technology, Iran);*
- 63 Electrostatic Single-probe Manipulation of a Conductive/Dielectric Micro-particle  
*Shigeki Saito (Tokyo Institute of Technology, Japan);*
- 64 A New Microwave Bandstop Filter Using Defected Microstrip Structure (DMS)  
*Morteza Kazerooni (Iran University of Science and Technology (IUST), Iran); Navid Pourramzan Gandji (Iran University of Science and Technology, Iran); Ahmad Cheldavi (Iran University of Science and Technology, Iran); Mahmoud Kamarei (University of Tehran, Iran);*
- 65 Retrodirective Array Composed of Two-port Dual Polarized Elements  
*The-Nan Chang (Tatung University, Taiwan); Jui-Shuan Wu (Tatung University, Taiwan);*
- 66 Comparing Effects of Electromagnetic Fields (60 Hz) on Seed Germination and Seedling Development in Monocotyledons and Dicotyledons  
*Azita Shabrangi (Tehran Tarbiat Moallem University, Iran); Ahmad Majd (Islamic Azad University, Iran);*
- 67 Effect of AC and DC Magnetic Fields on Seed Germination and Early Vegetative Growth in *Brassica Napus L*  
*Ahmad Majd (Islamic Azad University, Tehran North Branch, Iran); Azita Shabrangi (Tehran Tarbiat Moallem University, Iran);*
- 68 Radio Studies of Ionospheric Sporadic E (1950–1960)  
*Ernest Ketcham Smith (University of Colorado, USA);*
- 69 Analysis of Beam Efficiency in Multiple Beam Reflector Antennas  
*José Alberto Bava (Universidad Nacional de La Plata, Argentina); Alberto Maltz (Universidad Nacional de La Plata, Argentina); Mario Garavaglia (Centro de Investigaciones Ópticas (CIOp), Argentina);*
- 70 Separating Dielectric and Conductor Loss for Rough Striplines in Printed Circuit Boards  
*Marina Y. Koledintseva (Missouri University of Science and Technology, USA); Amendra Koul (Missouri University of Science and Technology, USA); Praveen K. R. Anmula (Missouri University of Science and Technology, USA); James L. Drewniak (Missouri University of Science and Technology, USA); Scott Hinaga (Cisco Systems Inc., USA); Eric Montgomery (Simclar Interconnect Technologies, USA); Konstantin N. Rozanov (Institute for Theoretical and Applied Electromagnetics, Russian Academy of Sciences, Russia);*

- 71 Research on THz Frequency Selective Surface  
*Xiao-Qiu Li (Nanjing Research Institute of Electronics Technology, China); Jin-Song Gao (Changchun Institute of Optics, Fine Mechanics and Physics, Chinese Academy of Sciences, China);*
- 72 Mesh Termination Condition Based on Two-component Version of Discretized Boundary Equation for Two-dimensional Scattering Problems  
*Kan Wang (Nanjing Research Institute of Electronics Technology, China);*
- 73 Optimization Technique on Filling Impedance Matrix in Moment Method  
*Guodong Han (Nanjing Research Institute of Electronics Technology, China); Yuhu Pan (Nanjing Research Institute of Electronic Technology, China); Changqing Gu (NUAA, China);*
- 74 Use of TDR to Determine the Dielectric Constant of Vermiculite  
*Glauco Fontgalland (Universidade Federal de Campina Grande — UFCG, Brazil); Silvio Ernesto Barbin (Escola Politecnica da Universidade de São Paulo — EPUSP, Brazil); Iyson Ferreira Dos Anjos (Universidade Federal de Campina Grande — UFCG, Brazil);*
- 75 A Non-redundant Star Shaped Reconfigurable Patch Antenna  
*Joseph Costantine (University of New Mexico, USA); Christos G. Christodoulou (University of New Mexico, USA); Silvio Ernesto Barbin (University of São Paulo, Brazil);*
- 09:00 Diagnostics of Mediums and Line Objects, Probing with Ultra-wideband Short-pulse Signals  
*A. Yu. Grinev (Moscow Aviation Institute (State Technical University), Russia); A. V. Andriyanov ("Tensor" Co. Ltd., Russia); D. V. Bagno (Moscow Aviation Institute (State Technical University), Russia); V. S. Temchenko (Moscow Aviation Institute (State Technical University), Russia); E. V. Ilyin (Moscow Aviation Institute (State Technical University), Russia); D. V. Nikishov (Moscow Aviation Institute (State Technical University), Russia);*
- 09:20 Multi-frequency Full-polarized Subsurface Holographic Radar with Quadrature Receiver  
*A. V. Zhuravlev (Bauman Moscow State Technical University, Russia); Sergey I. Ivashov (Bauman Moscow State Technical University, Russia); Vladimir V. Razevig (Bauman Moscow State Technical University, Russia); I. A. Vasiliev (Bauman Moscow State Technical University, Russia);*
- 09:40 Testing of the Theoretical Model for a Wideband Pulse Propagation in the Oil-Gas Collector Media  
*V. L. Mironov (Kirensky Institute of Physics, Siberian Branch, Russian Academy of Sciences, Russia); Konstantin Victorovich Muzalevskiy (Kirensky Institute of Physics, Siberian Branch, Russian Academy of Sciences, Russian Federation);*
- 10:00 A Single Display for RASCAN 5-frequency 2-polarisation Holographic Radar Scans  
*Colin G. Windsor (United Kingdom Atomic Energy Authority (UKAEA), UK); A. Bulletti (Università di Firenze, Italy); Lorenzo Capineri (Università di Firenze, Italy); Pierluigi Falorni (Università di Firenze, Italy); S. Valenini (Università di Firenze, Italy); G. Borgioli (Università di Firenze, Italy); Masaharu Inagaki (Walnut Ltd., Japan); Timothy D. Bechtel (Enviroscan, Inc., USA); E. Bechtel (Enviroscan, Inc., USA); A. V. Zhuravlev (Bauman Moscow State Technical University, Russia); Sergey I. Ivashov (Bauman Moscow State Technical University, Russia);*

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### Session 3A1

#### New Applications of Ground Penetrating Radar for Non-destructive Testing 1

Wednesday AM, August 19, 2009

#### Room A

Organized by Lorenzo Capineri, Colin G. Windsor

Chaired by Lorenzo Capineri, Colin G. Windsor

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- 08:40 Three-dimensional Views of Buried Objects from Holographic Radar Imaging  
*Masaharu Inagaki (Walnut Ltd., Japan); Colin G. Windsor (United Kingdom Atomic Energy Authority (UKAEA), UK); Timothy D. Bechtel (Enviroscan, Inc., USA); E. Bechtel (Enviroscan, Inc., USA); Sergey I. Ivashov (Bauman Moscow State Technical University, Russia); A. V. Zhuravlev (Bauman Moscow State Technical University, Russia);*
- 10:20 **Coffee Break**
- 10:40 TDR Calibration for Soil Moisture Measurements Using a Spectroscopic Dielectric Model  
*V. L. Mironov (Kirensky Institute of Physics, Siberian Branch, Russian Academy of Sciences, Russia); L. G. Kosolapova (Kirensky Institute of Physics, Siberian Branch, Russian Academy of Sciences, Russia); Konstantin Victorovich Muzalevskiy (Kirensky Institute of Physics, Siberian Branch, Russian Academy of Sciences, Russian Federation);*

- 11:00 Comparison of UWB Impulse, FMCW, and Noise Radar for Through-wall Bioradiolocation with Finite Difference Time Domain Simulations  
*Lanbo Liu (University of Connecticut, USA); Sergey I. Ivashov (Bauman Moscow State Technical University, Russia); Timothy Bechtel D. (University of Pennsylvania, USA); Lorenzo Capineri (Università di Firenze, Italy);*

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**Session 3A2**

**Light Scattering and Radiative Transfer:  
Theories and Applications 1**

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**Wednesday AM, August 19, 2009**

**Room B**

Organized by Ping Yang, Michael I. Mishchenko

Chaired by Ping Yang, Mikhail Ovchinnikov

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- 08:40 Dissecting the Transition Zone between Cloud and Clear Sky Using Shortwave Spectrometers  
*Warren Wiscombe (NASA Goddard Space Flight Center, USA); Alexander Marshak (NASA Goddard Space Flight Center, USA); Christine Chiu (NASA Goddard Space Flight Center, USA);*
- 09:00 FDTD Algorithm for Arbitrary EM Beam's Interaction with Arbitrary Dielectric Surface  
*Wenbo Sun (Science Systems and Applications, Inc., USA); Gordon Videen (Army Research Laboratory, USA);*
- 09:20 Optical Properties of Non-spherical Dust Aerosols from Mie Theory for Radiative Flux Calculations  
*Qiang Fu (University of Washington, USA);*
- 09:40 Single Particle Scattering Calculations with a Discontinuous Galerkin Method  
*R. Lee Panetta (Texas A&M University, USA); Guanglin Tang (Texas A&M University, USA); Ping Yang (Texas A&M University, USA);*
- 10:00 Light Scattering by Preferentially Oriented Ice Crystals  
*Anatoli G. Borovoi (Institute of Atmospheric Optics, Russian Academy of Sciences, Russia); N. Kustova (Institute of Atmospheric Optics, Russian Academy of Sciences, Russia);*
- 10:20 **Coffee Break**
- 10:40 Optical Characterization of Surfaces Based on the Study of the Linear Polarization Degree  
*Pablo Albella (Universidad de Cantabria, Spain); José María Saiz (Universidad de Cantabria, Spain); Francisco González (Universidad de Cantabria, Spain); Fernando Moreno (Universidad de Cantabria, Spain);*
- 11:00 T-matrix Light Scattering Calculation for Extreme Particle Shapes  
*Jens Hellmers (University of Bremen, Germany); Thomas Wriedt (Institute of Materials Science, Germany);*
- 11:20 General Derivation of the Total Electromagnetic Cross Sections for an Arbitrary Particle  
*Matthew J. Berg (United States Army Research Laboratory, USA); Amit Chakrabarti (Kansas State University, USA); Christopher M. Sorensen (Kansas State University, USA);*
- 11:40 Light Fields in a Horizontally Inhomogeneous Cloud-aerosol Layer  
*Leonid P. Bass (Keldysh Institute of Applied Mathematics, Russian Academy of Science, Russia); O. V. Nikolaeva (Keldysh Institute of Applied Mathematics, Russian Academy of Science, Russia); V. S. Kuznetsov (Research Scientific Center "Kurchatov Institute", Russia); A. A. Kokhanovsky (Bremen University, Germany);*

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**Session 3A3**

**Plasmonics, Metamaterials, and  
Magneto-Optics 1**

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**Wednesday AM, August 19, 2009**

**Room C**

Organized by Yakov M. Strelniker, David J. Bergman

Chaired by Yakov M. Strelniker, David J. Bergman

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- 08:40 Transforming Light and Cloaking with Photonic Metamaterials  
*Vladimir M. Shalaev (Purdue University, USA); Alexander V. Kildishev (Purdue University, USA); Vladimir P. Drachev (Purdue University, USA); Uday K. Chettiar (Purdue University, USA); Wen-shan Cai (Purdue University, USA);*
- 09:00 Fabricating Plasmonic Structures via Lithographic and Imprint Techniques  
*Alexandra Boltasseva (Purdue University, USA); Paul West (Purdue University, USA); Rasmus B. Nielsen (Technical University of Denmark, Denmark);*

- 09:20 Employing Epsilon-near-zero Material in Cloaking  
*Alexey P. Vinogradov (Institute for Theoretical and Applied Electromagnetics of the Russian Academy of Sciences, Russia); Alexander V. Dorofeenko (Institute for Theoretical and Applied Electromagnetics of the Russian Academy of Sciences, Russia); E. O. Liznev (Institute for Theoretical and Applied Electromagnetics of the Russian Academy of Sciences, Russia); Hui-Zhe Liu (National University of Singapore, Singapore); Said Zouhdi (University Paris Sud, France);*
- 09:40 Fast Light and Focusing in 2D Photonic Quasicrystals  
*Y. Neve-Oz (The Hebrew University of Jerusalem, Israel); T. Pollok (Zuse Institute, Germany); Sven Burger (Zuse Institute, Germany); Michael Golosovsky (The Hebrew University of Jerusalem, Israel); Dan Davidov (The Hebrew University of Jerusalem, Israel);*
- 10:00 Negative Radiation-pressure Response of a Left-handed Plasmonic Metamaterial  
*Henri J. Lezec (National Institute of Standards and Technology, USA); Kenneth J. Chau (University of British Columbia, Canada);*
- 10:20 **Coffee Break**
- 10:40 Optics of Active Metamaterials  
*Andrey K. Sarychev (Institute of Theoretical and Applied Electrodynamics, Russia);*
- 11:00 The Effect of Metamaterials on Anderson Localization  
*Ara A. Asatryan (University of Technology, Australia); Lindsay C. Botten (University of Technology, Australia); Michael A. Byrne (University of Technology, Australia); Valentin D. Freilikher (Bar-Ilan University, Israel); Sergey A. Gre-deskul (Ben Gurion University of the Negev, Israel); Ilya V. Shadrivov (Australian National University, Australia); Ross C. McPhedran (University of Sydney, Australia); Yuri S. Kivshar (Australian National University, Australia);*
- 11:20 Magnetophotonic Crystals with Various Designs  
*Seung Min Baek (Toyohashi University of Technology, Japan); Taichi Goto (Toyohashi University of Technology, Japan); Alexander V. Baryshev (Toyohashi University of Technology, Japan); Alexander M. Merzlikin (Institute for Theoretical and Applied Electromagnetics, Russia); Kazuo Yayoi (Toyohashi University of Technology, Japan); Mitsuteru Inoue (Toyohashi University of Technology, Japan);*
- 11:40 2D Magnetophotonic Crystals Fabricated Atop Patterned Substrates  
*Seung Min Baek (Toyohashi University of Technology, Japan); Alexander V. Baryshev (Toyohashi University of Technology, Japan); Kazuo Yayoi (Toyohashi University of Technology, Japan); Joo Young Kim (Toyohashi University of Technology, Japan); Hironaga Uchida (Toyohashi University of Technology, Japan); Mitsuteru Inoue (Toyohashi University of Technology, Japan);*
- 12:00 Influence of the Shapes of Holes or Islands on the Surface Plasmon Resonances and on the Light Transmission through a Metallic Film: Theory and Experiment  
*Yakov M. Strelniker (Bar-Ilan University, Israel); David J. Bergman (Tel Aviv University, Israel); Anna O. Voznesenskaya (St. Petersburg State University of Information Technologies, Mechanics and Optics, Russian Federation); David G. Stroud (Ohio State University, USA); Yafit Fleger (Bar-Ilan University, Israel); M. Rosenbluh (Bar-Ilan University, Israel);*
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- Session 3A4**  
**Electromagnetic Field in the Metamaterials and Dispersion Design of Cloaks and Photonic Crystals 2**
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- Wednesday AM, August 19, 2009**  
**Room D**  
Organized by Ganquan Xie, Tzong-Jer Yang, Chien-Jang Wu  
Chaired by Tzong-Jer Yang, Chien-Jang Wu
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- 08:40 Global and Local Field EM Modeling and Novel GL Double Layered Electromagnetic Cloaks  
*Ganquan Xie (GL Geophysical Laboratory, USA); Jianhua Li (GL Geophysical Laboratory, USA); Feng Xie (GL Geophysical Laboratory, USA); Lee Xie (GL Geophysical Laboratory, USA);*
- 09:00 Isotropic Metamaterial Based on Dielectric Cubes  
*Mikhail A. Odit (St. Petersburg Electrotechnical University "LETI", Russia); Irina B. Vendik (St. Petersburg Electrotechnical University "LETI", Russia);*
- 09:20 Electromagnetic Dispersion of Waveguide Based on Periodic Structures  
*Samia Bouali (National Engineering School of Tunis (ENIT), Tunisia); Taoufik Aguil (Ecole Nationale d'ingénieurs de Tunis, Tunisia);*

- 09:40 Cloaking of the Matter Waves under the Global Effect  
*De-Hone Lin (National Sun Yat-sen University, Taiwan); Pi-Gang Luan (National Central University, Taiwan);*
- 10:00 Introduction of a New Class of Materials Called Double Zero Media Having the Real Parts of Epsilon and Mu Equal to Zero  
*Homayoon Oraizi (Iran University of Science and Technology, Iran); Ali Abdolali (Iran University of Science and Technology, Iran); Noushin Vaseghi (K. N. Toosi University of Technology, Iran);*
- 10:20 **Coffee Break**
- 10:40 Ultra Wide Band Radar Absorbing Materials  
*Ali Abdolali (Iran University of Science and Technology, Iran); Homayoon Oraizi (Iran University of Science and Technology, Iran); Ahad Tavakoh (Amirkabir University of Technology, Iran);*
- 11:00 A Theorem for the Reflection and Transmission of Electromagnetic Waves from a Slab Made of Common Materials and Metamaterials  
*Homayoon Oraizi (Iran University of Science and Technology, Iran); Ali Abdolali (Iran University of Science and Technology, Iran);*
- 11:20 About Energy, Linear Momentum and Mass Transfer by Electromagnetic Wave in Negative Refraction Media  
*V. G. Veselago (A. M. Prokhorov Institute of General Physics, Russian Academy of Sciences, Russian Federation);*
- 11:40 High Reflection Coatings with Negative and Positive Refractive Indexes  
*Cumali Sabah (Johann Wolfgang Goethe Universität (Frankfurt University), Germany); S. Uckun (University of Gaziantep, Turkey);*
- 09:00 TM-Electromagnetic Guided Waves in a (Kerr-) Non-linear Three-layer Structure  
*Kadriya A. Yuskaeva (University of Osnabrueck, Germany); Valeriy S. Serov (University of Oulu, Finland); Hans Werner Schürmann (University of Osnabruck, Germany);*
- 09:20 Hierarchical Tensors for Fast Field Evaluation in Micromagnetics  
*Alexander V. Goncharov (The University of Sheffield, UK); G. Hrkac (The University of Sheffield, UK); J. Dean (The University of Sheffield, UK); S. Bance (The University of Sheffield, UK); T. Schrefl (The University of Sheffield, UK);*
- 09:40 Quantum Electro Dynamical Mechanisms of Combined Magnetic Fields Action on Water Solution of Amino Acids  
*Mikhail N. Zhadin (Institute of Cell Biophysics of RAS, Russia);*
- 10:00 A Generalized Signals and Systems Theory Scheme and Its Applications in the Description of Electromagnetic Problems  
*Emilio Gago-Ribas (University of Oviedo, Spain); Abdelaziz Serroukh (University of Oviedo, Spain);*
- 10:20 **Coffee Break**
- 10:40 Method of Analytical Regularization: New Approaches and Perspectives  
*Yury A. Tuchkin (Institute of Radiophysics and Electronics of National Academy of Sciences of Ukraine, Ukraine);*

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**Session 3A6a  
Power Electronics**

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**Wednesday AM, August 19, 2009**

**Room F**

Chaired by Jiri Lettl

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- Session 3A5**
- Novel Mathematical Methods in  
Electromagnetics 2**
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- Wednesday AM, August 19, 2009**
- Room E**
- Organized by Kazuya Kobayashi, Yury V. Shestopalov
- Chaired by Kazuya Kobayashi, Yury V. Shestopalov
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- 08:40 Electromagnetic Forces on Charged Particles  
*Zi-Hua Weng (Xiamen University, China);*

- 08:40 Matrix Converter Output Voltage Control with Overmodulation  
*Jiri Lettl (Czech Technical University in Prague, Czech Republic); Stanislav Fligl (Czech Technical University in Prague, Czech Republic);*
- 09:00 A Passivity-Based Control for Power Electronics Converter in a DFIG Wind Turbine  
*Y. B. Qu (Harbin Institute of Technology, China); H. H. Song (Harbin Institute of Technology, China);*

- 09:20 Computerized Calculation of Leakage Inductance Values of Transformers  
*Reinhard Doebbelin (Otto-von-Guericke University of Magdeburg, Germany); Christian Teichert (Otto-von-Guericke University of Magdeburg, Germany); M. Bennecke (Otto-von-Guericke University of Magdeburg, Germany); Andreas Lindemann (Otto-von-Guericke University of Magdeburg, Germany);*
- 09:40 The Simplifying for PEEC Model of DC Bus Based on Parameter Sensitivity Analysis  
*Fangzheng Li (Tsinghua University, China); Xudong Sun (Tsinghua University, China); Lipei Huang (Tsinghua University, China); Jianguo Jiang (Tsinghua University, China);*

10:20 **Coffee Break**

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**Session 3A6b**  
**RF and Wireless Communication**

**Wednesday AM, August 19, 2009**

**Room F**

Chaired by Heung-Gyoon Ryu

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- 10:40 ICI Suppression Method for the DFT-spread OFDM Communication System with Phase Noise  
*Sang Burm Ryu (Chungbuk National University, Korea); Heung-Gyoon Ryu (Chungbuk National University, Korea);*
- 11:00 Comparison of Wideband Channel Sounding Techniques  
*Xiao Hong Mao (Nanyang Technological University, Singapore); Yee Hui Lee (Nanyang Technological University, Singapore); Boon Chong Ng (Nanyang Technological University, Singapore);*
- 11:20 T-DVB Services Coexistence with IMT-advanced Service  
*Zaid A. Shamsan (Universiti Teknologi Malaysia (UTM), Malaysia); Tharek Abd Rahman (Universiti Teknologi Malaysia, Malaysia);*
- 11:40 Wireless Tiny Mass Sensor System Based on FBAR  
*W. W. Cheng (Zhejiang University, China); Yan Han (Zhejiang University, China); Shu Rong Dong (Zhejiang University, China); X. X. Han (Zhejiang University, China); S. H. Zhao (Zhejiang University, China); H. J. Zhang (Zhejiang University, China);*
- 12:00 Investigation of Low Altitude Air-to-Ground Channel over a Tropical Sea Surface at C Band  
*Yee Hui Lee (Nanyang Technological University, Singapore); Yu Song Meng (Nanyang Technological University, Singapore);*

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**Session 3A7**  
**Antenna Theory and Radiation 1**

**Wednesday AM, August 19, 2009**

**Room G**

Organized by Valery A. Permyakov

Chaired by Valery A. Permyakov

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- 08:40 Realization of Ramp and Stair-step Patterns from the Rectangular Wave-guide Arrays  
*Alapati Sudhakar (RVR & JC College of Engineering, India); Y. V. Narayana (Tirumala Engineering College, India);*
- 09:00 Field Statistics of the Circular Aperture Antenna  
*Yakov S. Shifrin (Kharkov National University of Radio Electronics, Ukraine); Vladimir V. Dolzhikov (Kharkov National University of Radio Electronics, Ukraine);*
- 09:20 Resonant Effect at the Coordination of Spatial Structures of Spiral Aerials and Environments of Distribution of Electromagnetic Waves  
*Victor I. Kuzmin (Moscow State Institute of Radio Engineering, Electronics, and Automation, Russia); V. D. Kazakov (Moscow State Institute of Radio Engineering, Electronics, and Automation, Russia); A. V. Krishtopov (Moscow State Institute of Radio Engineering, Electronics, and Automation, Russia);*
- 09:40 On the Design of CPW-fed Apollonian Gasket Fractal Antenna  
*Anupam Tiwari (Defence Institute of Advanced Technology (DU), India); Raj Kumar (Defence Institute of Advanced Technology (DU), India);*
- 10:00 A Y-Y-shaped Slot Antenna Design for an RFID Tag Designed for Metallic Tag Applications  
*Sung-Lin Chen (National Sun Yat-Sen University, Taiwan); Ken-Huang Lin (National Sun Yat-Sen University, Taiwan);*
- 10:20 **Coffee Break**
- 10:40 On the Problem of Dielectric Coated Thin Wire Antenna  
*Adeniyi Adekola (University of Lagos, Nigeria); A. Ike Mowete (University of Lagos, Nigeria); Ade Ogunsola (University of Lagos, Nigeria);*
- 11:00 Leaky-wave Antenna Based of EBG Structures  
*Sergey E. Bankov (Institute of Radio Engineering and Electronics of Russian Academy of Science, Russia);*



- 11:20 Beam Forming Networks on the Base of Coupled Waveguides for Multi-beam Hybrid Antennas  
*Sergey E. Bankov (Institute of Radio Engineering and Electronics of Russian Academy of Science, Russia); Vadim A. Kaloshin (Institute of Radio Engineering and Electronics of Russian Academy of Science, Russia); Elena V. Frolova (Institute of Radio Engineering and Electronics of Russian Academy of Science, Russia);*
- 11:40 Application of Imbedding Method to the Problem of Nanosecond Impulses Distortion  
*Pavel V. Filonov (Moscow State Technical University of Civil Aviation, Russian Federation); Valery L. Kuznetsov (Moscow State Technical University of Civil Aviation (MSTUCA), Russia);*
- 12:00 Near-field Microwave Detection of a Spherical Object: Theory and Application  
*Mikhail Galin (Institute for Physics of Microstructures, RAS, Russia); A. N. Reznik (Institute for Physics of Microstructures, RAS, Russia);*
- 10:20 **Coffee Break**
- 10:40 Transistor Generator of Microwave Chaotic Oscillations with Single External Reactive Component  
*N. A. Maksimov (Institute of Radio Engineering and Electronics, Russian Academy of Sciences, Russia);*
- 11:00 Forest Fire Localization Using Distributed Algorithms in Wireless Sensor Networks  
*Alireza Khadivi (Ecole Polytechnique Fédérale de Lausanne (EPFL), Switzerland); Leonidas Georgopoulos (Ecole Polytechnique Fédérale de Lausanne (EPFL), Switzerland); Martin Hasler (Ecole Polytechnique Fédérale de Lausanne (EPFL), Switzerland);*
- 11:20 Information Transmission between Neuron-like Elements  
*Alexander S. Dmitriev (Institute of Radio Engineering and Electronics of Russian Academy of Sciences, Russia); Anton Igorevich Ryzhov (Moscow Institute of Physics and Technology, Russia);*
- 11:40 Introduction to Unholonomic Nonlinear Classic Field Theory of Bound Charges  
*Stanislav Alexandrovich Podosenov (Central Aerological Observatory, Russia); Alexander Alexeevich Potapov (Institute of Radio Engineering and Electronics of Russian Academy of Sciences, RAS, Russia); Elena Romanovna Men'kova (FGUP "VNII OFI" All-Russian Research Institute of Optical and Physical Measurements, Russia);*

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**Session 3A8**

**Nonlinear Dynamics in Electromagnetics,  
Electronics and Animate Nature**

**Wednesday AM, August 19, 2009**

**Room H**

Organized by Alexander S. Dmitriev, Martin Hasler

Chaired by Alexander S. Dmitriev, Martin Hasler

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- 08:40 Electric and Magnetic Spinor Particles — The Electromagnetic Source of Gravitation, Theory and Experiments  
*Robert Sizov (Individual Researcher, Russia);*
- 09:00 Generation of the Microwave Chaotic Oscillations by CMOS Structure  
*Artem Yu. Nikishov (Moscow Institute of Physics and Technology (State University), Russia);*
- 09:20 Avalanche Dynamics of Single Photon Sensitive Avalanche Photodiode  
*Josef Blazej (Czech Tech. University, Czech); Ivan Prochazka (Czech Tech. University, Czech Republic);*
- 09:40 Forming and Receiving Ultra Low-energy Electromagnetic Signals  
*Alexander S. Dmitriev (Kotel'nikov Institute of Radio Engineering and Electronics of RAS, Russia);*
- 10:00 Chaotic Oscillators  
*N. A. Maksimov (Institute of Radio Engineering and Electronics, Russian Academy of Sciences, Russia);*

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**Session 3A9**

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

**Wednesday AM, August 19, 2009**

**Room I**

Chaired by Jan-Dong Tseng, Ikuo Awai

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- 08:40 Temperature-dependent Microwave Reflection-and-Transmission Narrowband Filter in a Type-II Superconducting Bilayer in the Mixed State  
*Chien-Jang Wu (National Taiwan Normal University, Taiwan);*
- 09:00 High Frequency Bridge Type Capacitance Tester Design  
*Jan-Dong Tseng (National Chin Yi University of Technology, Taiwan, R.O.C.); Tatsuya Kashiwa (Kitami Institute of Technology, Japan); Kohzoh Ohshima (Asahikawa National College of Technology, Japan); Pei-Chi Wang (National Chin Yi University of Technology, Taiwan);*

- 09:20 Miniature Broadband Phase Shifter Based on 3 dB Directional Coupler  
*Evgenia Yu. Zameshaeva (Saint-Petersburg Electrotechnical University, Russia); P. A. Turalchuk (Saint-Petersburg Electrotechnical University, Russia); D. V. Kholodnyak (Saint-Petersburg Electrotechnical University, Russia);*
- 09:40 A Coupled-Mode Theory of Band-Pass Filters Composed of an Arbitrary Number of Resonators  
*Toyokatsu Miyashita (Ryukoku University, Japan);*
- 10:00 A Novel Compact Thru-silicon-via On-chip Passive MMW Bandpass Filter for 77GHz Applications  
*Wayne Woods (IBM Microelectronics, USA); Guoan Wang (IBM Microelectronics, USA); Jian-sheng Xu (IBM Microelectronics, USA); Hanyi Ding (IBM Microelectronics, USA); Shu Rong Dong (Zhejiang University, China); Weiwei Cheng (Zhejiang University, China); Amit Bavisi (Freescale Semiconductor, USA);*
- 10:20 **Coffee Break**
- 10:40 Bandstop Filter Using Slow-wave CPW Resonator with Defected Ground Structure  
*Adnan Görür (Nigde University, Turkey); Ceyhan Karpuz (Pamukkale University, Turkey); Özlem Akgün (Aksaray University, Turkey);*
- 11:00 Artificial Dielectric Resonator with Anisotropy  
*Ikuo Awai (Ryukoku University, Japan); Nobuyuki Hitoi (Ryukoku University, Japan); Toshio Ishizaki (Panasonic Corporation, Japan);*
- 11:20 An Analytical Method for Optimization of RF MEMS Wafer Level Packaging with CPW Detuning Consideration  
*Zheng Wang (Tsinghua University, China); Zewen Liu (Tsinghua University, China);*
- 11:40 Compact UWB L and C-shaped Resonator of PCML Bandpass Filter  
*Jayaseelan Marimuthu (Universiti Teknologi Malaysia, Malaysia); Mazlina Esa (Universiti Teknologi Malaysia, Malaysia);*
- 12:00 Compact Dual Broadband Ladder PCML Filter with Rectangular Resonators  
*Jayaseelan Marimuthu (Universiti Teknologi Malaysia, Malaysia); Mazlina Esa (Universiti Teknologi Malaysia, Malaysia);*

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**Session 3A10****Advanced Photonics-based Devices for Telecom Systems**

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**Wednesday AM, August 19, 2009****Room J**

Organized by Elena Mishina, Mikhail E. Belkin

Chaired by Elena Mishina, Mikhail E. Belkin

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- 08:40 TCAD and ECAD Modeling of Microwave and Millimeter Wave Photonic Devices  
*Mikhail E. Belkin (Moscow State Technical University of Radio-Engineering, Electronics and Automation, Russian Federation);*
- 09:00 Smooth Functional for Optimization of Peak to Average Ratio  
*David A. Shapiro (Russian Academy of Sciences, Russia); A. I. Latkin (Novosibirsk State University, Russia);*
- 09:20 Femtosecond Laser Pulses Propagation in Silicon-based Planar Waveguide Structures  
*Artem V. Chetvertukhin (Lomonosov Moscow State University, Russia); A. A. Grunin (M.V. Lomonosov Moscow State University, Russia); E. V. Drynkina (Lomonosov Moscow State University, Russia); Minghui Hong (National University of Singapore, Singapore); A. A. Fedyanin (M. V. Lomonosov Moscow State University, Russia);*
- 09:40 Linear Dichroism and Birefringence in Anisotropic Plasmonic Metamaterials  
*Maxim R. Shcherbakov (Lomonosov Moscow State University, Russia); P. P. Vabishchevich (Lomonosov Moscow State University, Russia); M. I. Dobynde (Lomonosov Moscow State University, Russia); A. S. Sigov (Moscow Institute for Radioengineering, Electronics and Automation, Russia); A. A. Zaitsev (Moscow Institute for Radioengineering, Electronics and Automation, Russia); A. A. Fedyanin (M. V. Lomonosov Moscow State University, Russia);*
- 10:00 Advanced Applications of Fiber Bragg Gratings for Telecom Systems  
*Rogério Nunes Nogueira (Campus de Santiago, Portugal); M. V. Drummond (Campus de Santiago, Portugal); C. Marques (Campus de Santiago, Portugal); R. Monteiro (Campus de Santiago, Portugal); A. Albuquerque (Campus de Santiago, Portugal); A. Teixeira (Campus de Santiago, Portugal); P. S. Andre (Campus de Santiago, Portugal); J. F. Rocha (Campus de Santiago, Portugal);*

- 10:20 **Coffee Break**
- 10:40 Microwave vs Optical Injection-locked Devices Comparison  
*Mikhail E. Belkin (Moscow State Technical University of Radio-Engineering, Electronics and Automation, Russian Federation); Alexey Loparev (Moscow State Technical University of Radio-Engineering, Electronics and Automation, Russian Federation);*
- 11:00 Switchable Nonlinear Metalloferroelectric Photonic Crystals  
*N. Ilyin (Moscow State Institute of Radioengineering, Electronics and Automation (Technical University), Russia); N. Sherstyuk (Moscow State Institute of Radioengineering, Electronics and Automation (Technical University), Russia); Elena Mishina (Moscow State Institute of Radioengineering, Electronics and Automation (Technical University), Russia); V. Muhortov (South Center of Russian Academy of Science, Russia);*
- 11:20 Two-photon Autocorrelation in a MQW GaAs Laser at 1.55  $\mu\text{m}$   
*David Duchesne (INRS-EMT, Université du Québec, Canada); Luca Razzari (Université du Québec, Institut National de la Recherche Scientifique, Canada); L. Halloran (INRS-EMT, Université du Québec, Canada); M. Giguère (INRS-EMT, Université du Québec, Canada); F. Légaré (INRS-EMT, Université du Québec, Canada); Roberto Morandotti (Institut National de la Recherche Scientifique Énergie, Matériaux et Télécommunications (INRS-EMT), Canada); A. J. SpringThorpe (Canadian Photonics Fabrication Centre (CPFC), Canada); D. N. Christodoulides (University of Central Florida, USA); David J. Moss (University of Sydney, Australia);*
- 14:00 Achievements and Perspectives of the COSMO-SkyMed Mission  
*Giovanni Valentini (ASI — Italiana Space Agency, Italy); Fabrizio Battazza (ASI — Italian Space Agency, Italy); Alessandro Coletta (ASI — Italian Space Agency, Italy); Fabio Covello (ASI — Italian Space Agency, Italy); Gemma Manoni (ASI — Italian Space Agency, Italy);*
- 14:20 The Overview of the L-band SAR Onboard ALOS-2  
*Yukihiko Kankaku (JAXA, Japan); Yuji Osawa (JAXA, Japan); Shinichi Suzuki (JAXA, Japan); Tomohiro Watanabe (JAXA, Japan);*
- 14:40 The RADARSAT Constellation Concept  
*Guy Séguin (Space Technologies/Spacecraft Payloads, Canada); Jérôme Colinas (Canadian Space Agency, Canada);*
- 15:00 RADARSAT Constellation Antenna Design and Performance  
*Jerome Colinas (Canadian Space Agency, Canada); P. Plourde (Canadian Space Agency, Canada); M. Lapointe (Canadian Space Agency, Canada);*
- 15:20 **Coffee Break**
- 15:40 A Novel Approach for Ship Detection by High Resolution Synthetic Aperture Radars  
*Seong In Hwang (National Defense Academy, Japan); Kazuo Ouchi (National Defense Academy, Japan);*
- 16:00 Study of Ocean Wave Propagation Direction and Effects of Bottom Topography under Inclement Weather Condition by Multi-look Processed SAR Images Using Weighed Cross-correlation Function  
*Shunsuke Taniguchi (National Defense Academy, Japan); Kazuo Ouchi (National Defense Academy, Japan);*
- 16:20 Application of PSInSAR for Monitoring Urban Subsidence in Beijing  
*Hong-Li Zhao (China University of Geosciences (Beijing), China); Jian-Ping Chen (China University of Geosciences (Beijing), China); Xiao-Fang Guo (China Aero Geophysical Survey & Remote Sensing Centre for Land & Resources, China); Jing-Hui Fan (China Aero Geophysical Survey & Remote Sensing Centre for Land & Resources, China);*

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**Session 3P1**

**Synthetic Aperture Radar (SAR) Satellite Status and Evolution**

Wednesday PM, August 19, 2009

**Room A**

Organized by Jérôme Colinas

Chaired by Jérôme Colinas

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- 13:40 CONAE's SAR Missions Overview  
*L. A. Frulla (CONAE, Argentina); G. Rodríguez Ortega (CONAE, Argentina); J. A. Milovich (CONAE, Argentina);*

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**Session 3P2**
**Light Scattering and Radiative Transfer:  
Theories and Applications 2**


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**Wednesday PM, August 19, 2009**
**Room B**

Organized by Ping Yang, Michael I. Mishchenko

 Chaired by Warren Wiscombe, Qiang Fu
 

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- 13:20 Equations for Electromagnetic Radiation Transfer in Dielectric Random Media with Effects of Near Fields and Opposite Wave Streams' Interference  
*Yuru Nicolaevich Barabanenkov (Institute of Radio Engineering and Electronics, Russian Academy of Sciences, Russia); M. Yu. Barabanenkov (Institute of Microelectronics Technology and High Purity Materials, Russian Academy of Sciences, Russia);*
- 13:40 Recent Progress in Simulating the Optical Properties of Nonspherical Ice Crystals and Dust Aerosols: Theories and Applications  
*Ping Yang (Texas A&M University, USA); K. N. Liou (University of California, USA);*
- 14:00 Real and Apparent Changes in Aerosol Optical Properties near Cumulus Clouds: A Modeling Case Study and Implications for Passive and Active Remote Sensing  
*Mikhail Ovchinnikov (Pacific Northwest National Laboratory (PNNL), USA); Evgueni I. Kassianov (Pacific Northwest National Laboratory, USA); Jennifer M. Comstock (Pacific Northwest National Laboratory, USA);*
- 14:20 BDRF Models for Soil and Vegetation Terrestrial Surfaces from Multiple-viewing Angle Photopolarimetric Measurements  
*Pavel Litvinov (SRON Netherlands Institute for Space Research, The Netherlands); Otto Hasekamp (SRON Netherlands Institute for Space Research, The Netherlands); Brian Cairns (NASA Goddard Institute for Space Studies, USA); Michael I. Mishchenko (Goddard Institute for Space Studies, USA);*
- 14:40 Discrete Ordinate Method to Modelling of Radiation Transfer in Atmosphere under Tabular Presentation of Phase Functions  
*Leonid P. Bass (Keldysh Institute of Applied Mathematics, Russian Academy of Science, Russia); O. V. Nikolaeva (Keldysh Institute of Applied Mathematics, Russian Academy of Science, Russia); V. S. Kuznetsov (Research Scientific Center "Kurchatov Institute", Russia);*
- 15:00 Matrix Form of VRTE Solution for Vertically Stratified Slab  
*A. I. Brill (National Institute for Environmental Studies, Japan); Vladimir P. Budak (Moscow Power Engineering Institute (TU), Russia); Yaroslav A. Ilyushin (Moscow State University, Russia); S. V. Korokin (Moscow Power Engineering Institute (TU), Russia); S. L. Oshchepkov (National Institute for Environmental Studies, Japan);*
- 15:20 **Coffee Break**
- 15:40 Matrix Green's Functions Method in Statistical Optics  
*Vladimir P. Budak (Moscow Power Engineering Institute (TU), Russia); B. A. Veklenko (Russian Academy of Science, Russia);*
- 16:00 Refractive Index of Dielectric with Metal Nanoparticles  
*S. Bendoricic (Jean Monnet University, France); R. Saoudi (Jean Monnet University, France); Alexandre V. Tishchenko (University Jean Monnet, France); F. Hobar (Constantine University, Algérie);*
- 16:20 Optical Characterization of the Static and Dynamic Properties of Media Containing Nanoscale Non Uniformities  
*Anatol Brodsky (University of Washington, USA); L. Burgess (University of Washington, USA);*
- 16:40 Extension of Null-field Method for Anisotropic Crystals  
*Vladimir A. Schmidt (Universität Bremen, Germany); Thomas Wriedt (Institut für Werkstofftechnik, Germany);*
- 17:00 A Fast Method for Atmospheric Multiple-scattering Based on DISORT  
*Xiuhong Chen (Chinese Academy of Sciences, China); Heli Wei (Chinese Academy of Sciences, China); Ping Yang (Texas A&M University, USA);*
- 17:20 Polymer Films with Small Nematic Liquid Crystal Droplets for Polarization of Visible and Infrared Radiation: Theoretical Study  
*Valery A. Loiko (B. I. Stepanov Institute of Physics of the National Academy of Sciences of Belarus, Belarus); Alexander V. Konkolovich (B. I. Stepanov Institute of Physics of the National Academy of Sciences of Belarus, Belarus); Polina G. Maksimenko (B. I. Stepanov Institute of Physics of the National Academy of Sciences of Belarus, Belarus);*
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- 17:40 Characterization of Lymphocytes Using the Scanning Flow Cytometry  
*Maxim A. Yurkin (Institute of Chemical Kinetics and Combustion, Russia); D. I. Strokov (Institute of Chemical Kinetics and Combustion, Russia); Konstantin V. Gilev (Institute of Chemical Kinetics and Combustion, Russia); D. R. Van Bockstaele (LabCorp, Belgium); A. G. Hoekstra (University of Amsterdam, The Netherlands); N. B. Rubtsov (Institute of Cytology and Genetics, Russia); Valeri P. Maltsev (Novosibirsk State University, Russia);*

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**Session 3P3**

**Plasmonics, Metamaterials, and Magneto-Optics 2**

**Wednesday PM, August 19, 2009**

**Room C**

Organized by Yakov M. Strelniker, David J. Bergman

Chaired by Yakov M. Strelniker, David J. Bergman

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- 13:40 Active Control of Photonic Properties of Plasmonic Crystals: Electric and Magnetic Field Effects  
*Gregory A. Wurtz (University of North Florida, USA); Wayne Dickson (The Queen's University of Belfast, UK); Anatoly V. Zayats (Queen's University of Belfast, UK);*
- 14:00 Nanofocusing of Light Using Plasmonic Lenses Illuminated by Radially Polarized Light  
*Avner Yanai (Hebrew University of Jerusalem, Israel); Gilad Lerman (Hebrew University of Jerusalem, Israel); Uriel Levy (Hebrew University of Jerusalem, Israel);*
- 14:20 Nanoimprinting and Contact Printing Lithography for Fabricating Micro/Nano-structures and Sub-wavelength Devices  
*Yung-Chun Lee (National Cheng Kung University, Taiwan);*
- 14:40 Surface Plasmons in Metallic Films with Non-drude Dispersion  
*Alexander G. Schuchinsky (The Queens University of Belfast, UK);*
- 15:00 Experimental and Theoretical Study of Plasmonic Gratings with Subwavelength Grooves  
*Vladimir I. Belotelov (A. M. Prokhorov General Physics Institute RAS, Russia); A. N. Kalish (A. M. Prokhorov General Physics Institute, Russia); A. K. Zvezdin (A. M. Prokhorov General Physics Institute, Russia); A. S. Vengurlekar (Tata Institute of Fundamental Research, India);*
- 15:20 **Coffee Break**
- 15:40 Surface Plasmon Polariton Analogues of Volume Electromagnetic Wave Effects  
*Alexei A. Maradudin (University of California, USA); Tamara A. Leskova (University of California, USA);*
- 16:00 Light Scattering from 3-D Random Layers with Rough Boundaries  
*Gerard Berginc (Thales Optronique, France); Claude Bourrely (Centre de Physique Theorique, France);*
- 16:20 Mid-infrared Surface-plasmon-resonance Technique and Its Biological Applications  
*Michael Golosovsky (The Hebrew University of Jerusalem, Israel); V. Yashunsky (The Hebrew University of Jerusalem, Israel); V. Lirtsman (The Hebrew University of Jerusalem, Israel); Dan Davidov (The Hebrew University of Jerusalem, Israel); B. Aroeti (The Hebrew University of Jerusalem, Israel);*
- 16:40 Fractal Plasmonic Metamaterials for Subwavelength Imaging  
*Xueqin Huang (Fudan University, China); Dexin Ye (Zhejiang University, China); Shiyi Xiao (Fudan University, China); Jiangtao Huangfu (Zhejiang University, China); Zhiyu Wang (Zhejiang University, China); Lixin Ran (Zhejiang University, China); Lei Zhou (Fudan University, China);*
- 17:00 Broadband Terahertz Metamaterial for Negative Refraction  
*Cumali Sabah (Johann Wolfgang Goethe Universität (Frankfurt University), Germany); H. G. Roskos (Johann Wolfgang Goethe-University, Germany);*
- 17:20 The Radiators Based on Metamaterials Waveguides  
*Nikolay Pavlovich Balabukha (Institute of Theoretical and Applied Electrodynamics, Russian Academy of Sciences, Russia); Alexey Andreevich Basharin (Institute for Theoretical and Applied Electromagnetics, Russian Academy of Sciences, Russia); Vladimir N. Semenenko (Institute for Theoretical and Applied Electromagnetics, Russian Academy of Sciences, Russia);*

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**Session 3P4**
**Biomedical Electromagnetism Instruments,  
Electromagnetism Condensed Materials and  
Imaging 1**


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**Wednesday PM, August 19, 2009**
**Room D**

 Organized by Ganquan Xie, Jianhua Li, Jauyn Grace  
Lin

 Chaired by Jianhua Li
 

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- 13:20 Electromagnetic Fields of Medical Devices as Risk Factor for Medical Personnel  
*Nina B. Rubtsova (RAMS Institute of Occupational Health, Russia Federation); D. V. Markov (RAMS Institute of Occupational Health, Russian Federation); Sergey Yu. Perov (RAMS Institute of Occupational Health, Russian Federation);*
- 13:40 Temperature Reconstruction in Depth of Biological Object by Acoustical Radiometer  
*Yuru Nicolaevich Barabanenkov (Institute of Radio Engineering and Electronics, Russian Academy of Sciences, Russia); A. A. Anosov (Institute of Radio Engineering and Electronics, Russian Academy of Sciences, Russia); A. S. Kazanskij (Institute of Radio Engineering and Electronics, Russian Academy of Sciences, Russia); A. D. Mansfel'd (Institute of Applied Physics of RAS, Russia); A. S. Sharakhane (Institute of Biochemical Physics of RAS, Russia);*
- 14:00 Inversion Algorithm for Microwave Breast Cancer Detection Using Level Sets  
*Natalia Irishina (Universidad Carlos III de Madrid, Spain); Diego Alvarez (Universidad Carlos III de Madrid, Spain); Oliver Dorn (Universidad Carlos III de Madrid, Spain); P. Medina (University Carlos III de Madrid, Spain); Miguel Moscoso (Universidad Carlos III de Madrid, Spain);*
- 14:20 SQUIDS for Magnetic Resonance Imaging at Ultra-low Magnetic Field  
*Andrei N. Matlashov (Los Alamos National Lab (LANL), USA); Vadim S. Zotev (Los Alamos National Lab (LANL), USA); Robert H. Kraus, Jr. (Los Alamos National Lab (LANL), USA); Henrik Sandin (Los Alamos National Lab (LANL), USA); Al V. Urbaitis (Los Alamos National Lab (LANL), USA); Petr L. Volegov (Los Alamos National Lab (LANL), USA); Michelle A. Espy (Los Alamos National Lab (LANL), USA);*
- 14:40 Utilizing the Superconducting Bilayer As a Spintronic Sensor  
*J. G. Lin (National Taiwan University, Taiwan); Daniel Hsu (National Taiwan University, Taiwan); Awadhesh Mani (Materials Science Division, Indira Gandhi Centre for Atomic Research, India); T. Geetha Kumary (Materials Science Division, Indira Gandhi Centre for Atomic Research, India);*
- 15:00 Applications of Ultra-low Field Magnetic Resonance: From Brains to Bombs  
*Michelle Espy (Los Alamos National Lab (LANL), USA); Andrei Matlashov (Los Alamos National Lab (LANL), USA); Yonathan Araya (Los Alamos National Lab (LANL), USA); Mark Flynn (Los Alamos National Lab (LANL), USA); John Gomez (Los Alamos National Lab (LANL), USA); Cristina Hanson (Los Alamos National Lab (LANL), USA); Robert Kraus (Los Alamos National Lab (LANL), USA); Per Magnelind (Los Alamos National Lab (LANL), USA); Karlene Maskaly (Los Alamos National Lab (LANL), USA); Pulak Nath (Los Alamos National Lab (LANL), USA); Shaun Newman (Los Alamos National Lab (LANL), USA); Tuba Owens (Los Alamos National Lab (LANL), USA); Mark Peters (Los Alamos National Lab (LANL), USA); Henrik Sandin (Los Alamos National Lab (LANL), USA); Igor M. Savukov (Los Alamos National Laboratory, USA); Larry Schultz (Los Alamos National Lab (LANL), USA); Al Urbaitis (Los Alamos National Lab (LANL), USA); Petr Volegov (Los Alamos National Lab (LANL), USA); Vadim Zotev (Los Alamos National Lab (LANL), USA);*
- 15:20 **Coffee Break**
- 15:40 X-rays Source Using Thermal Excitation of Pyroelectric Crystal for Medical Application  
*Shinji Fukao (Doshisha University, Japan); Yoshikazu Nakanishi (Doshisha University, Japan); Yang Guan (Doshisha University, Japan); Yuuki Sato (Doshisha University, Japan); Yoshiaki Ito (Kyoto University, Japan); Shinzo Yoshikado (Doshisha University, Japan);*

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**Session 3P5**
**Novel Mathematical Methods in  
Electromagnetics 3**


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**Wednesday PM, August 19, 2009**
**Room E**

 Organized by Kazuya Kobayashi, Yury V.  
Shestopalov

 Chaired by Kazuya Kobayashi, Yury V. Shestopalov
 

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- 13:20 The Time-domain Waveguide Modes Unlike to the Classical Time-harmonic Waves  
*Oleg A. Tretyakov (Gebze Institute of Technology, Turkey); Özlem Akgün (Aksaray University, Turkey);*
- 13:40 Reflection and Scattering of Electromagnetic Waves in Spatial Grids Consisting of Multiple Lossy Waveguides  
*Yasumitsu Miyazaki (Aichi University of Technology, Japan);*
- 14:00 Electromagnetic Analysis of Propagation and Scattering Fields in Dielectric Elliptic Cylinder on Planar Ground  
*Yasumitsu Miyazaki (Aichi University of Technology, Japan); Tadahiro Hashimoto (Synclayer, Inc., Japan); Koichi Takahashi (Aichi University of Technology, Japan);*
- 14:20 Eigenvalue Analysis of Waveguides and Planar Transmission Lines Loaded with Full Tensor Anisotropic Materials  
*Christos S. Lavranos (Democritus University of Thrace, Greece); Dimitrios G. Drogoudis (Democritus University of Thrace, Greece); George A. Kyriacou (Democritus University of Thrace, Greece);*
- 14:40 Numerical Investigation of Sensitivity Matrix in Three-dimensional Microwave Tomography  
*Dimitrios G. Drogoudis (Democritus University of Thrace, Greece); George A. Kyriacou (Democritus University of Thrace, Greece); J. N. Sahalos (Aristotle University of Thessaloniki, Greece);*
- 15:00 Exact Explicit Solution for Electromagnetic Step Signals Propagating along Waveguides  
*O. A. Tretyakov (Gebze Institute of Technology, Turkey); S. Aksoy (Gebze Institute of Technology, Turkey); E. Eroğlu (Gebze Institute of Technology, Turkey);*
- 15:20 **Coffee Break**

- 15:40 Revised Optical Properties of Turbid Media on a Base of General Improved Two-flux Kubelka-Munk Approach  
*Dmitrii A. Rogatkin (Moscow Regional Research and Clinical Institute "MONIKI", Russia); Vladimir V. Tchernyi (Cherny) (SAIBR, Russia);*
- 16:00 Modeling of Infinite Periodic Arrays with Dielectric Volumes and Quasi-3D Oriented Conductors  
*Vladimir Volski (Katholieke Universiteit Leuven, Belgium); Guy A. E. Vandenbosch (Katholieke Universiteit Leuven, Belgium);*
- 16:20 Over Set Grid Generation Method for the Analysis of Electromagnetic Field While Considering the Lorentz Transformation  
*Hiroshi Iwamatsu (Tokyo University of Technology, Japan); Michiko Kuroda (Tokyo University of Technology, Japan);*
- 16:40 Novel Analytical Method for Diffraction Grating Calculation  
*A. A. Shcherbakov (Moscow Institute of Physics and Technology, Russia); Alexandre V. Tishchenko (University Jean Monnet, France);*
- 17:00 Mathematical Modeling of a Diffraction Problem of a Plane Wave on Nonlinear Dielectric Layered Structure  
*Vasyl V. Yatsyk (Usikov Institute of Radiophysics and Electronics of the National Academy of Sciences of Ukraine (IRE NASU), Ukraine);*

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**Session 3P6**
**Microwave Treatment of Materials**


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**Wednesday PM, August 19, 2009**
**Room F**

 Organized by Dmitri V. Louzguine-Luzgin, Vadim V.  
Yakovlev

 Chaired by Dmitri V. Louzguine-Luzgin, Vadim V.  
Yakovlev
 

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- 13:40 Microwave Penetrating and Heating of Metallic Powders  
*Anton P. Anzulevich (Chelyabinsk State University, Russia); V. D. Buchelnikov (Chelyabinsk State University, Russia); I. V. Bychkov (Chelyabinsk State University, Russia); Dmitri V. Louzguine-Luzgin (Tohoku University, Japan);*

- 14:00 Effective Medium Approximation for Composite from Three-layered Spherical Particles  
*D. M. Dolgushin (Chelyabinsk State University, Russia); Anton P. Anzulevich (Chelyabinsk State University, Russia); V. D. Buchelnikov (Chelyabinsk State University, Russia); I. V. Bychkov (Chelyabinsk State University, Russia); Dmitri V. Louzguine-Luzgin (Tohoku University, Japan);*
- 14:20 Metallic Glassy and Composite Samples Produced by Using Microwave Radiation  
*Dmitri V. Louzguine-Luzgin (Tohoku University, Japan); V. D. Buchelnikov (Tohoku University, Japan); G. Xie (Tohoku University, Japan); S. Li (Tohoku University, Japan); A. Inoue (Tohoku University, Japan); N. Yoshikawa (Tohoku University, Japan); M. Sato (National Institute for Fusion Science, Japan);*
- 14:40 Full Wave Analysis of Cylindrical Microwave Reactor  
*Pierre Pribetich (University de Bourgogne, France); Christophe Lohr (NAXAGORAS Technology, France); Didier Albert Camill Stuerger (Universite de Bourgogne, France);*
- 15:00 Thermal Tuning and Loop Modes within Cylindrical Applicator  
*Didier Albert Camill Stuerger (Universite de Bourgogne, France); Christophe Lohr (NAXAGORAS Technology, France); Pierre Pribetich (University de Bourgogne, France);*
- 15:20 **Coffee Break**
- 15:40 Effects of Geometrical Parameters within Microwave Applicator Design  
*Didier Albert Camill Stuerger (Universite de Bourgogne, France); Christophe Lohr (NAXAGORAS Technology, France); Pierre Pribetich (University de Bourgogne, France);*
- 16:00 Measurement of Dielectric Properties and Finite Element Simulation of Microwave Pretreatment for Convective Drying of Grapes  
*S. R. S. Dev (McGill University, Canada); Y. Gariépy (McGill University, Canada); G. S. Vijaya Raghavan (McGill University, Canada);*
- 16:20 Multiphysics Simulations of Microwave Heating Phenomena in Domestic Ovens  
*Michal Soltysiak (Warsaw University of Technology, Poland); Malgorzata Celuch (Warsaw University of Technology, Poland); Ulrich Erle (Nestlé Product Technology Centre, Lebensmittelforschung GmbH Singen, Germany);*
- 16:40 Efficiency Optimization for Microwave Thermal Processing of Materials with Temperature-Dependent Media Parameters  
*Ethan K. Murphy (Worcester Polytechnic Institute, USA); Vadim V. Yakovlev (Worcester Polytechnic Institute, USA);*
- 17:00 Coupled Electromagnetic-thermal 1-D Model of Combined Microwave-convective Heating with Pulsing Microwave Energy  
*Erin M. Kiley (University of New Hampshire, USA); Suzanne L. Weekes (Worcester Polytechnic Institute, USA); Vadim V. Yakovlev (Worcester Polytechnic Institute, USA);*
- 17:20 Regularities of Semiconductor Powders Dynamics in Chladni Effect  
*Victor I. Kuzmin (Moscow State Institute of Radio Engineering, Electronics, and Automation, Russia); D. L. Tytik (Frumkin Institute of Physical Chemistry and Electrochemistry, Russia);*

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**Session 3P7**
**Antenna Theory and Radiation 2**


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**Wednesday PM, August 19, 2009**
**Room G**

Organized by Valery A. Permyakov

Chaired by Valery A. Permyakov

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- 13:20 Double-folded Monopole Antenna with Coaxial Cable  
*Takehiko Tsukiji (Fukuoka University, Japan); Masaaki Yamasaki (Fukuoka University, Japan); Yasunori Kumon (Fukuoka University, Japan);*
- 13:40 All-planar Penta-band Strip-loaded Slit Antenna for Laptop Applications  
*Ching-Wei Ling (National Chiao Tung University, Taiwan, R.O.C.); Sy-Been Wang (National Chiao Tung University, Taiwan, R.O.C.); Shyh-Jong Chung (National Chiao Tung University, Taiwan, R.O.C.);*
- 14:00 Investigation of Radiation Efficiency and Bandwidth of Electrically Small MNG ZOR Metamaterial Antenna  
*Seung-Wook Lee (Hongik University, Korea); Jae-Hyun Park (Hongik University, Korea); Jeong-Hae Lee (Hongik University, South Korea);*



- 14:20 Circularly Polarized Slotted Conductor-backed Coplanar Waveguide (CBCPW) Antenna Array with Sequentially Rotated Feeding Structure  
*Yow-Shyan Lin (National Chiao Tung University, Taiwan); Lieh-Chuan Lin (National Chiao Tung University, Taiwan); Toshihide Kitazawa (Ritsumeikan University, Japan); Yu-De Lin (National Chiao Tung University, Taiwan);*
- 14:40 Microstrip Patch Antenna Designs with Reduced Surface Wave Excitation  
*Samir F. Mahmoud (Kuwait University, Kuwait); Ayed R. Al-Ajmi (The Public Authority for Applied Education and Training, Kuwait);*
- 15:00 Circular Polarized Patch Antenna with a Small Ferrite Disk  
*Michael Sigalov (Sami Shamoan College of Engineering, Israel); Rewen Shavit (Ben-Gurion University of the Negev, Israel); Eugene O. Kamenetskii (Ben Gurion University of the Negev, Israel); Roman Joffe (Sami Shamoan College of Engineering, Israel); David Rahmilov (Sami Shamoan College of Engineering, Israel); Saad Tapuchi (Sami Shamoan College of Engineering, Israel);*
- 15:20 **Coffee Break**
- 15:40 Anomalous High Propagation Velocity of Bound Electromagnetic Fields in Near Zone of Radiating Sources: Experimental Observation  
*Alexander L. Kholmetskii (Belarus State University, Belarus); O. V. Missevitch (Institute of Nuclear Problems, Belarus); R. Smirnov-Rueda (Complutense University, Spain);*
- 16:00 Classification of Fractal Antenna Radiation Patterns by the Spectrum Enhancement Algorithm  
*Giovanni Franco Crosta (University of Milan-Bicocca, Italy);*
- 16:20 A New Eigenvalue Based Radiation Efficiency Analysis for Multiple Antenna Systems  
*Jui-Ting Chuang (National Chiao Tung University, Taiwan); Fu-Chiarng Chen (National Chiao Tung University, Taiwan);*
- 16:40 Fractal Electrodynamics: Analysis and Synthesis of Fractal Antenna Radiation Pattern  
*Aleksandr Nikolaevich Bogolyubov (Lomonosov Moscow State University, Russia); Artem Aleksandrovich Koblikov (Lomonosov Moscow State University, Russia); Natalia Evgenievna Shapkina (Lomonosov Moscow State University, Russia);*
- 17:00 A 30 GHz Bow-tie Slot Antenna Fed by a Microstrip to CPW Transition  
*Angel Colin (Instituto de Física de Cantabria (CSIC-UC), Spain);*
- 17:20 Design of Gathered Elements for Reconfigurable-beam Reflectarrays Based on Patches Aperture-coupled to Delay Lines  
*Eduardo Carrasco (Universidad Politécnica de Madrid, Spain); Mariano Barba (Universidad Politécnica de Madrid, Spain); José A. Encinar (Universidad Politécnica de Madrid, Spain);*
- 17:40 A Novel Design of Ultrawide-band Antenna  
*Dhaou Bouchouicha (Université de Tours /STMicroelectronics, France); Mohamed Latrach (Ecole Supérieure d'Electronique de l'Ouest, France); François Dupont (STMicroelectronics, France); André Bremond (STMicroelectronics, France); Laurent Ventura (Laboratoire de Microélectronique de Puissance, France);*
- 18:00 Generation of Sector Beams from Helical Antennas  
*Y. V. Narayana (Tirumala Engineering College, India); Alapati Sudhakar (RVR & JC College of Engineering, India); J. Ravindranadh (RVR & JC College of Engineering, India);*
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- Session 3P8**  
**Electromagnetic Theory and Applications**
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- Wednesday PM, August 19, 2009**  
**Room H**  
Chaired by Mikhail N. Zhadin
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- 13:40 Quantum ElectroDynamical Mechanisms of Resonant Effects Development inside Coherence Domains at Combined Magnetic Fields Action  
*Mikhail N. Zhadin (Institute of Cell Biophysics of RAS, Russia);*
- 14:00 Spectral Characterization of 2D Complex Beams and Its Relation to Gaussian Beams  
*Raul Mahillo-Isla (Universidad de Valladolid, Spain); Maria-Jesus Gonzalez-Morales (University of Valladolid, Spain); Carlos Dehesa-Martinez (Universidad de Valladolid, Spain);*
- 14:20 Mechanism of Dissipation Loss in Artificial Dielectrics  
*Ikuo Awai (Ryukoku University, Japan); Makoto Furuta (Ryukoku University, Japan); Toshio Ishizaki (Panasonic Corporation, Japan);*
- 14:40 Influence of Field Potential on the Speed of Light  
*Zi-Hua Weng (Xiamen University, China);*
- 15:00 Mass Continuity Equation in the Electromagnetic Field  
*Ying Weng (Xiamen University, China); Zi-Hua Weng (Xiamen University, China);*

- 15:20 **Coffee Break**
- 15:40 Adjoint Charge in Electromagnetic Field  
*Zi-Hua Weng (Xiamen University, China);*
- 16:00 Dispersion Equations for Multilayer Planar Dielectric Waveguides  
*Mikhail Dmitrievich Kovalev (BMSTU, Russia);*
- 16:20 The Number of Energy Levels of a Quantum Particle in a Piecewise Constant Potential Field  
*Mikhail Dmitrievich Kovalev (BMSTU, Russia);*
- 16:40 Effect of Exciter Shape on Magnetic Field and Its Impedance in the Vicinity of a Multilayer Slab Conductor  
*Mohammad Fatehi Marji (Yazd University, Iran); Hossein Fatehi Marj (Shahrbabak Islamic Azad University, Iran);*
- 17:00 Effect of Variation of Slab Conductor Electromagnetic Parameters on the Electromagnetic Field Distribution  
*Hossein Fatehi Marj (Shahrbabak Islamic Azad University, Iran); Mohammad Fatehi Marji (Yazd University, Iran);*
- 17:20 Topological Properties of a Chain of Vortices  
*Karen Volke-Sepulveda (Universidad Nacional Autonoma de Mexico, Mexico);*
- 17:40 Splitting of One and Conjunction of Two Coherent Beams of the Electromagnetic Radiation in Condition of the Broken Full Internal Reflection (BFIR)  
*Yuri A. Zyuryukin (Saratov State Technical University, Russia); Dmitriy R. Drevko (Saratov State Technical University, Russia);*

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**Session 3P9a**

**Electromagnetic Noise Exploitation: from Stochastic Resonance to Energy Harvesting**

**Wednesday PM, August 19, 2009**

**Room I**

Organized by Luca Gammaitoni

Chaired by Luca Gammaitoni

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- 13:40 Stochastic Bifurcations and CR-like Effect in Bistable Self-sustained Noisy Oscillators  
*Anna S. Zakharova (University of Potsdam, Germany); T. E. Vadivasova (Saratov State University, Russia); V. S. Anishchenko (Saratov State University, Russia); J. Kurths (University of Potsdam, Germany);*

- 14:00 Nonlinear Energy Harvesting  
*Helios Vocca (INFN, Italy);*
- 14:20 Noise Tolerant Reconfigurable Logic Gates with Resonant Tunneling Diodes  
*L. Worschech (Universität Würzburg, Germany); F. Hartmann (Universität Würzburg, Germany); A. Forchel (Universität Würzburg, Germany); J. Ahopelto (VTT Micro and Nanoelectronics, Finland); I. Neri (Università di Perugia, Italy); Luca Gammaitoni (Università di Perugia, Italy);*
- 14:40 Developments in Noise Temperature of Cryogenically Cooled InP HEMT Amplifiers Versus Physical Temperature  
*Richard J. Davis (University of Manchester, UK); A. Wilkinson (University of Manchester, UK);*
- 15:20 **Coffee Break**

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**Session 3P9b**

**Microwave Devices Using Composite Materials**

**Wednesday PM, August 19, 2009**

**Room I**

Organized by Abdullah Eroglu

Chaired by Abdullah Eroglu, Antonio L. Topa

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- 15:40 Microwave Dispersion of Ferroelectric Capacitor Dielectric Properties at the Frequencies of Acoustic Resonances  
*Anatoly Konstantinovich Mikhailov (Saint-Petersburg State Electrotechnical University (LETI), Russia); Aleksandr Mikhaylovich Prudan (Saint-Petersburg State Electrotechnical University (LETI), Russia); Sergei Ptashnik (Saint-Petersburg State Electrotechnical University (LETI), Russia); Andrei Borisovich Kozyrev (Saint-Petersburg State Electrotechnical University (LETI), Russia);*
- 16:00 New NRD-waveguide Devices Using Metamaterials  
*Antonio L. Topa (Technical University of Lisbon, Portugal); Carlos R. Paiva (Instituto Superior Técnico, Portugal); Afonso M. Barbosa (Instituto Superior Técnico, Portugal);*
- 16:20 Design and Development of Low Cost and Light Weight Cavity and Microstrip Band Pass Filters for Communication Systems  
*Jagdish Shivhare (Institute of Technology and Management, India); S. B. Jain (Indira Gandhi Institute of Technology, Indraprasth University Campus, India);*

- 16:40 Propagation Characteristics of Gyrotropic Medium  
*Abdullah Eroglu (Indiana University-Purdue University, USA);*
- 17:00 CMA Diagram in the Design of Nonreciprocal Devices  
*Abdullah Eroglu (Indiana University-Purdue University, USA); Jay Kyoong Lee (Syracuse University, USA);*
- 17:20 Unusual Relationship between Permittivity and Tunability of Doped Ferroelectric BSTO Ceramics for Microwave Application  
*E. Nenashva (Giricond Research Institute, Russia); A. Kanareikin (OHIO, USA); Andrei Borisovich Kozyrev (Saint-Petersburg State Electrotechnical University (LETI), Russia); D. Kosmin (Saint-Petersburg State Electrotechnical University (LETI), Russia); Vitaly Osadchy (Saint-Petersburg Electrotechnical University (LETI), Russia);*
- 14:20 The Method of Fundamental Solutions for Exterior Problems  
*Tzon-Tzer Lu (National Sun Yat-sen University, Taiwan); Zi-Cai Li (National Sun Yat-sen University, Taiwan);*
- 14:40 Effective Condition Number and Applications to Numerical Solutions of Motz's Problem  
*Zi-Cai Li (National Sun Yat-sen University, Taiwan); Yimin Wei (Fudan University, China);*
- 15:00 Fields and Waves: Acoustics, Electrodynamics, Elastodynamics  
*Karl Joerg Langenberg (University of Kassel, Germany);*
- 15:20 **Coffee Break**
- 15:40 Analysis of the Dielectric Loss as Applied to Uniform Transmission Line Load Response  
*Jianshu Luo (National University of Defence Technology, China); Min Zhou (National University of Defence Technology, China); Wanjin Wang (National University of Defence Technology, China); Ying Li (National University of Defence Technology, China);*

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**Session 3P10**

**Electromagnetic Field Modeling, Inversion and Applications 1**

**Wednesday PM, August 19, 2009**

**Room J**

Organized by Ganquan Xie, Michael Oristaglio,  
Jianhua Li

Chaired by Ganquan Xie, Tzon-Tzer Lu

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- 13:20 Electromagnetic Phenomena in Resistance Spot Welding and Its Effects on Weld Nugget Formation  
*Yong Bing Li (Shanghai Jiao Tong University, China); Zhong Qin Lin (Shanghai Jiao Tong University, China); Xin Min Lai (Shanghai Jiao Tong University, China); Guan Long Chen (Shanghai Jiao Tong University, China);*
- 13:40 Magnetic Field Solutions: A Sumudu Transform Treatment of Maxwell's Equations  
*Fethi Bin Belgacern (Arab Open University, Kuwait);*
- 14:00 The GL EAI EM Modeling for Electromagnetic Propagation in the Earth-Air-Ionosphere  
*Ganquan Xie (National Sun Yat-sen University, Taiwan); Jianhua Li (Da Yeh University, Taiwan); Lee Xie (GL Geophysical Laboratory, USA); Xianwei Zhou (University of Science and Technology, China); Chow-Son Chen (National Central University, Taiwan); Clement Kostov (Schlumberger Moscow Research Center, USA);*
- 16:00 New Solutions of Nonlinear Force-free Magnetic Field  
*Xufeng Zhang (National University of Defence Technology, China); Jianshu Luo (National University of Defence Technology, China); Ying Li (National University of Defence Technology, China);*
- 16:20 Frequency Dependence of Permittivity of Free and Bound Water in Soils for Different Textures  
*P. P. Bobrov (Omsk State Pedagogical University, Russia); V. L. Mironov (Kirensky Institute of Physics, Siberian Branch, Russian Academy of Sciences, Russia); O. V. Kondratieva (Omsk State Pedagogical University, Russia); Andrey V. Repin (Omsk State Pedagogical University, Russia);*
- 16:40 Electromagnetic Scattering from an Infinite Dielectric Cone  
*Taha Mosayebi-Dorcheh (The University of Sistan and Baluchestan, Iran); Laleh Seyyed Kalantary (University of Sistan and Baluchestan, Iran); Shahram Mohanna (University of Sistan and Baluchestan, Iran); Saeed Tavakoli (The University of Sistan and Baluchestan, Iran);*
- 17:00 An Iterative Method for Inverse Medium Scattering for the Full Maxwell Equations  
*Aref Lakhal (University of Saarland, Germany);*

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**Session 3P11**
**New Applications of Ground Penetrating Radar for Non-destructive Testing 2**


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**Wednesday PM, August 19, 2009**
**Room K**

Organized by Lorenzo Capineri, Colin G. Windsor

 Chaired by Lorenzo Capineri, Pierluigi Falorni
 

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- 13:40 Depth Information from Holographic Radar Scans  
*Colin G. Windsor (United Kingdom Atomic Energy Authority (UKAEA), UK); A. Bulletti (Università di Firenze, Italy); Lorenzo Capineri (Università di Firenze, Italy); Pierluigi Falorni (Università di Firenze, Italy); S. Valenini (Università di Firenze, Italy); Masaharu Inagaki (Walnut Ltd., Japan); Timothy D. Bechtel (Enviroscan, Inc., USA); E. Bechtel (Enviroscan, Inc., USA); A. V. Zhuravlev (Bauman Moscow State Technical University, Russia); Sergey I. Ivashov (Bauman Moscow State Technical University, Russia);*
- 14:00 Antipersonnel Landmines Detection by Holographic Radar Imaging: An Experimental Study of Soil Effects  
*Timothy D. Bechtel (Enviroscan, Inc., USA); E. Bechtel (Enviroscan, Inc., USA); G. Borgioli (Università di Firenze, Italy); A. Bulletti (Università di Firenze, Italy); Lorenzo Capineri (University of Florence, Italy); Pierluigi Falorni (Università di Firenze, Italy); Masaharu Inagaki (Walnut Ltd., Japan); Sergey I. Ivashov (Bauman Moscow State Technical University, Russia); S. Valentini (Università di Firenze, Italy); Colin G. Windsor (United Kingdom Atomic Energy Authority (UKAEA), UK); A. V. Zhuravlev (Bauman Moscow State Technical University, Russia);*
- 14:20 Noise Performances of Two Recently Reported Electromagnetic Target Classification Techniques in Resonance Region: A Comparative Study for the WD-PCA Based Classifier and the MUSIC Algorithm Based Classifier  
*Emre Ergin (Middle East Technical University, Turkey); Gonul Turhan-Sayan (Middle East Technical University, Turkey);*
- 14:40 Eddy-current NDE Using an AMR Magnetometer  
*Dong Feng He (National Institute for Materials Science, Japan);*
- 15:00 Simulation of a Borehole Radar in Measurement While Drilling (MWD) Environments  
*Jing Li (University of Houston, USA); Richard C. Liu (University of Houston, USA);*

**15:20 Coffee Break**

- 15:40 Hough Transform and GPR Analysis for Applications in Civil Engineering  
*Matteo Cacciola (University Mediterranea of Reggio Calabria, Italy); G. M. Meduri (University Mediterranea of Reggio Calabria, Italy); Vincenzo Barrile (University Mediterranea of Reggio Calabria, Italy); F. C. Morabito (University Mediterranea of Reggio Calabria, Italy);*
- 16:00 The Application of the Hilbert-Huang Transform in Through-wall Life Detection with UWB Impulse Radar  
*Zijian Liu (University of Connecticut, USA); Lanbo Liu (University of Connecticut, USA); Benjamin Barrowes (Cold Regions Research and Engineering Laboratory, USA);*

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**Session 4AP**
**Poster Session 2**


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**Thursday AM–PM, August 20, 2009**
**9:00 AM - 4:00 PM**
**Room K**


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- 1 A Simple Method to Find the Number of Branch Points of Propagation Constants of a Lossless Closed Guide without Constructing the Dispersion Curve  
*Kutlu Karayahsi (Kıraç Namik Kemal Mah, Turkey); Namik Yener (Kocaeli University, Turkey);*
- 2 Peculiarities of Intelligence Optimization of a Microstrip Filter on Folded Dual-mode Resonators  
*Ivan A. Dovbysh (Kirensky Institute of Physics of SB RAS, Russia); Vladimir V. Tyurnev (Kirensky Institute of Physics of SB RAS, Russia);*
- 3 Numerical Investigation of Rectangular Dielectric Resonator Antennas (DRAs) Fed by Dielectric Image Line (DIL)  
*Hamide Dashti (Sistan and Baluchestan University, Iran); Mohammad Hassan Neshati (Ferdowsi University of Mashhad, Iran); F. Mohanna (Sistan and Baluchestan University, Iran);*
- 4 UWB Antenna with Band-stop Filter  
*Seokjin Hong (Hanyang University, Republic of Korea); Dongho Kim (Hanyang University, Republic of Korea); Jae-Hoon Choi (Hanyang University, Republic of Korea);*

- 5 Design of an Orthomode Transducer for Use in Multi-band Antenna Feeds  
*Soon-Mi Hwang (Korea Electronics Technology Institute (KETI), Korea); Sung-Soon Choi (Korea Electronics Technology Institute (KETI), Korea); Jeon-Min Kim (Korea Electronics Technology Institute (KETI), Korea); Bierng-Seok Song (Korea Electronics Technology Institute (KETI), Korea);*
- 6 Wideband Microstrip Array Antenna Using Aperture Coupled Elements  
*Nasser Ghassemi (University of Sistan and Baluchestan, Iran); Shahram Mohanna (University of Sistan and Baluchestan, Iran);*
- 7 Design of a Miniaturized Broadband Tag Antenna for UHF RFID System  
*Xingyu Zhang (Nokia (China) Investment Co., Ltd, China); Anping Zhao (Nokia Research Center, China);*
- 8 Design and Demonstration of 1-bit and 2-bit Transmit-arrays at X-band Frequencies  
*Hamza Kaouach (CEA, LETI, MINATEC, France); L. Dussopt (CEA, LETI, MINATEC, France); Ronan Sauleau (University of Rennes 1, France); Thierry Koleck (CNES, France);*
- 9 Amplification of Space Charge Waves of Millimeter Wave Range in Transversely Nonuniform  $n$ -GaN Films  
*Volodymyr V. Grimalsky (Autonomous University of Morelos (UAEM), Mexico); Svetlana V. Koshevaya (Autonomous University of Morelos (UAEM), Mexico); Margarita Tecpoyotl-Torres (Autonomous University of Morelos (UAEM), Mexico); Jesus Escobedo-Alatorre (Autonomous University of Morelos (UAEM), Mexico);*
- 10 The Treatment of Resonance Chart with Direct Non-resonance Power Leakage  
*Victor N. Egorov (Eastern-Siberian Branch of FSUE "VNIIFTRI", Russia);*
- 11 Characterization of Ferroelectrics for Microwave Applications  
*A. Altyinnikov (St. Petersburg Electrotechnical University (LETI), Russia); A. Gagarin (St. Petersburg Electrotechnical University (LETI), Russia); I. Kotel'nikov (St. Petersburg Electrotechnical University (LETI), Russia); Andrei Borisovich Kozyrev (Saint Petersburg Electrotechnical University (LETI), Russia); A. Mikhailov (St. Petersburg Electrotechnical University (LETI), Russia);*
- 12 Design of Dual-band Implantable Microstrip Antenna  
*Ho-Jun Lee (Korea Electronics Technology Institute, Korea); Jin-Sup Kim (Korea Electronics Technology Institute, R. O. Korea); Se-Hwan Choi (Korea Electronics Technology Institute, R. O. Korea);*
- 13 Simple Structure Circularly Polarized Microstrip Antenna  
*Ho-Jun Lee (Korea Electronics Technology Institute, Korea); Jae-Young Lee (Korea Electronics Technology Institute, R. O. Korea); Kyu-Ho Park (Korea Electronics Technology Institute, R. O. Korea); Kyu-Bok Lee (Korea Electronics Technology Institute, R. O. Korea);*
- 14 A Novel Microwave Absorbing Structure Using FSS Metamaterial  
*Haiyan Chen (University of Electronic Science and Technology of China, China); X. Y. Hou (University of Electronic Science and Technology of China, China); Longjiang Deng (University of Electronic Science and Technology of China, China);*
- 15 24-GHz Front-end Monolithic Microwave Integrated Circuits Using 0.5- $\mu\text{m}$  GaAs Enhancement/Depletion-mode (E/D-mode) PHEMT Technology for Automotive Radar Applications  
*Hong-Yeh Chang (National Central University, Taiwan); Yi-Shuo Wu (National Central University, Taiwan, R.O.C.); Shou-Hsien Weng (National Central University, Taiwan, R.O.C.); Yan-Liang Yeh (National Central University, Taiwan); Chi-Hsein Lin (National Central University, Taiwan); Sheng-Ming Luo (National Central University, Taiwan, R.O.C.); Yu-Chi Wang (WIN Semiconductors Corp., Taiwan, R.O.C.);*
- 16 Design of an Antenna System for UWB-MIMO Communications  
*Ali Imran Najam (Grenoble Institute of Technology (Grenoble-INP), France); Yvan Duroc (Grenoble Institute of Technology (Grenoble-INP), France); Smail Tedjini (Grenoble Institute of Technology (Grenoble-INP), France);*
- 17 Measurement of Dielectric Anisotropy of Microwave Substrates by Two-resonator Method with Different Pairs of Resonators  
*Plamen I. Dankov (University of Sofia, Bulgaria); Boyan N. Hadjistamov (University of Sofia, Bulgaria); Iliyana P. Arestova (University of Sofia, Bulgaria); Valda P. Levcheva (University of Sofia, Bulgaria);*

- 18 A Study on the Coupled Image Guide Structures  
*Iliyana Ilieva Arestova (University of Sofia “St. Kliment Ohridski”, Bulgaria); Plamen I. Dankov (University of Sofia “St. Kliment Ohridski”, Bulgaria); Valda P. Levcheva (University of Sofia “St. Kliment Ohridski”, Bulgaria);*
- 19 Efficient Sidelobe Reduction Technique for Linear Antenna Arrays Using Step-function Feeding Systems  
*Fikret Tokan (Yildiz Technical University, Turkey); Filiz Günes (Yildiz Technical University, Turkey);*
- 20 Design of Stacked Power Amplifiers Using GaAs Monolithic Microwave Integrated Circuit (MMIC) Technology  
*Chih-Chun Shen (National Central University, Taiwan, R.O.C.); George D. Vendelin (National Central University, Taiwan, R.O.C.); Hong-Yeh Chang (National Central University, Taiwan); Yu-Chi Wang (WIN Semiconductors Corp., Taiwan, R.O.C.);*
- 21 A Support Vector Regression Machine Model for a Coax-fed Circular Microstrip Antenna  
*Giovanni Angiulli (University Mediterranea, Italy); D. De Carlo (University Mediterranea, Italy); P. Quattrone (University Mediterranea, Italy); Salvatore Tringali (University Mediterranea, Italy);*
- 22 Performance Investigation of Microstrip Exponential Tapered Line Impedance Transformer Using MathCAD  
*Mazlina Esa (Universiti Teknologi Malaysia, Malaysia); Nik Noordini Nik Abd Malik (Universiti Teknologi Malaysia, Malaysia); Nadiyahatulakmar Abdul Latif (Universiti Teknologi Malaysia, Malaysia); Jayaseelan Marimuthu (Universiti Teknologi Malaysia, Malaysia);*
- 23 A Novel Bandpass Defected Microstrip Structure (DMS) Filter for Planar Circuits  
*Morteza Kazerooni (Iran University of Science and Technology (IUST), Iran); Ahmad Cheldavi (Iran University of Science and Technology, Iran); Mahmoud Kamarei (University of Tehran, Iran);*
- 24 U-shaped RFID Tag Antenna for Isotropic Radiation Pattern  
*Sangwoon Lee (Ajou University, Korea); Hak-Joo Jung (Ajou University, Korea); Hosung Choo (Hongik University, Korea); Keekeun Lee (Ajou University, Korea); Ikmo Park (Ajou University, Korea);*
- 25 Cavity Backed Slot Antenna of Rectangular Waveguide  
*Ho-Jun Lee (Korea Electronics Technology Institute, Korea); Jae-Young Lee (Korea Electronics Technology Institute, Korea); Kyu-Bok Lee (Korea Electronics Technology Institute, R. O. Korea); Kyu-Ho Park (Korea Electronics Technology Institute, R. O. Korea);*
- 26 Investigation of Static Phasing Distribution Characteristics of Passive Reflectarray Antenna Elements  
*Muhammad Yusof Bin Ismail (University of Tun Hussein Onn Malaysia, Malaysia); Muhammad Firdaus Bin Mud Shukri (University of Tun Hussein Onn Malaysia, Malaysia); Z. Zakaria (University of Tun Hussein Onn Malaysia, Malaysia); A. F. M. Zain (University of Tun Hussein Onn Malaysia, Malaysia); M. F. L. Abdullah (University of Tun Hussein Onn Malaysia, Malaysia); M. A. Ubin (University of Tun Hussein Onn Malaysia, Malaysia);*
- 27 Investigation of Broadbanding Techniques on a Novel Folded Meander Line Antenna (FMLA)  
*Abdul Aziz Muhammad Ezanuddin (University Malaysia Perlis (UniMAP), Malaysia); Ping Jack Soh (University Malaysia Perlis (UniMAP), Malaysia); M. Fareq Malek (University Malaysia Perlis (UniMAP), Malaysia); M. Z. A. Abdul Aziz (University Malaysia Perlis (UniMAP), Malaysia);*
- 28 Microwave Corona Breakdown in rf Devices  
*Joel Rasch (Chalmers University of Technology, Sweden); D. Anderson (Chalmers University of Technology, Sweden); M. Lisak (Chalmers University of Technology, Sweden); V. E. Semenov (Institute of Applied Physics, Russia); Jerome Puech (Centre National d’Etudes Spatiales, France);*
- 29 Measurement of Differential Radar Cross Section of UHF RFID Tags  
*Audrey Pouzin (Grenoble INP, France); Tan-Phu Vuong (IMEP-LAHC, Grenoble INP, France); Smail Tedjini (Institut National Polytechnique de Grenoble (Grenoble INP), France); M. Pouyet (Laboratoire National de Métrologie et d’Essais (LNE), France); J. Perdereau (Laboratoire National de Métrologie et d’Essais (LNE), France);*
- 30 Shunt-series Shunt-shunt Dual-feedback CMOS Wideband Amplifier  
*Jin-Siang Syu (National Chiao Tung University, Taiwan, R.O.C.); Tzung-Han Wu (National Chiao Tung University, Taiwan, R.O.C.); Chinchun Meng (National Chiao Tung University, Taiwan, R.O.C.);*

- 31 Optimising of Node Coordination in Wireless Sensor Network  
*Nik Noordini Nik Abd Malik (Universiti Teknologi Malaysia, Malaysia); Mazlina Esa (Universiti Teknologi Malaysia, Malaysia); Sharifah Kamilah Syed Yusof (Universiti Teknologi Malaysia, Malaysia); Jayaseelan Marimuthu (Universiti Teknologi Malaysia, Malaysia);*
- 32 The Influence of Fog on the Propagation of the Electromagnetic Waves under Lithuanian Climate Conditions  
*Stasys Tamosiunas (Vilnius University, Lithuania); Milda Tamosiunaite (Vilnius University, Lithuania); Mindaugas Zilinskas (Communications Regulatory Authority of the Republic of Lithuania, Lithuania); Milda Tamosiuniene (Semiconductor Physics Institute, Lithuania);*
- 33 Bandwidth Efficient Inter-carrier Interference Cancellation Technique for OFDM Digital Communication Systems  
*Akhil Kamboj (Jaypee Institute of Information Technology University, India); Abhinav Keshari (Jaypee Institute of Information Technology University, India); Vivek K. Dwivedi (Jaypee Institute of Information Technology University, India); Ghanshyam Singh (Jaypee University of Information Technology, India);*
- 34 Performance Analysis of Coded OFDM System Using Various Coding Schemes  
*Vivek K. Dwivedi (Jaypee Institute of Information Technology University, India); Abhinav Gupta (Jaypee Institute of Information Technology University, India); Richansh Kumar (Jaypee Institute of Information Technology University, India); Ghanshyam Singh (Jaypee University of Information Technology, India);*
- 35 Electromagnetic Field Analysis of Axial Flux High Temperature Superconducting Synchronous Motor  
*Liyi Li (Harbin Institute of Technology, China); Baoquan Kou (Harbin Institute of Technology, China); Jiwei Cao (Harbin Institute of Technology, China);*
- 36 Novel Compact Three-layer Wideband Phase Shifter in SIW Technology  
*Ahmed Ali (Centre National de la Recherche Scientifique (CNRS), France); Hervé Aubert (Centre National de la Recherche Scientifique (CNRS), France); Nelson Fonseca (CNES, France); Fabio Coccetti (Centre National de la Recherche Scientifique (CNRS), France);*
- 37 A New Perspective and Applications of Amorphous Microwires on Electromagnetic Shielding  
*Octavian Baltag (Gr. T. Popa University of Medicine and Pharmacy, Romania);*
- 38 Novel Principle of Transformer Protection Based on Variable Window Parameter Estimation  
*Hengxu Ha (Shandong University of Technology, China); Zhi Qiang Zhang (Shandong University of Technology, China); Yuzhen Tan (Shandong University of Technology, China); Bo Chen (Shaanxi Electric Power Company, China); Z. Q. Bo (AREVA T&D UK Limited, UK);*
- 39 The Susceptibility of Microcontroller Device with Coupling Caused by UWB-HPPEM  
*Sun-Mook Hwang (INHA University, Korea); Joo-Il Hong (INHA University, Korea); Seung-Moon Han (INHA University, Korea); Chang-Su Huh (INHA University, Korea); Uk-Youl Huh (INHA University, Korea); Jin-Soo Choi (Agency for Defense Development, Korea);*
- 40 Characterisation and Testing Shielding Fabrics  
*Zoltán Szabó (Brno University of Technology, Czech Republic); Pavel Fiala (Brno University of Technology, Czech Republic);*
- 41 Susceptibility of TTL Logic Devices to Narrow-band High Power Electromagnetic Threats  
*Joo-Il Hong (INHA University, Korea); Sun-Mook Hwang (INHA University, Korea); Kwang-Yong Kim (INHA University, Korea); Chang-Su Huh (INHA University, Korea); Uk-Youl Huh (INHA University, Korea); Jin-Soo Choi (Agency for Defense Development, Korea);*
- 42 Research on the Interference Effect of Wireless LAN by Analogdigital Interference Signal Using GTEM Cell  
*Sangbong Jeon (Korea Radio Promotion Association, Korea); Suk-Tai Kwun (Korea Radio Promotion Association, Korea); Youngho Kim (Electronics and Telecommunications Research Institute, Korea); Yeon-Choon Chung (Seokyeong University, Korea); Sangho Choi (Korea Radio Promotion Association, Korea);*
- 43 Evaluation of Interference between Microwave Oven Noise and IEEE802.11b Using a GTEM Cell  
*Sangbong Jeon (Korea Radio Promotion Association, Korea); Yeon-Choon Chung (Seokyeong University, Korea); Chang-Han Jun (Korea Radio Promotion Association, Korea); Suk-Tai Kwun (Korea Radio Promotion Association, Korea); Jae Hoon Yun (Electronics and Telecommunications Research Institute, Korea); Sangho Choi (Korea Radio Promotion Association, Korea);*

- 44 Investigation of an Agricultural Waste as an Alternative Material for Microwave Absorbers  
*H. Nornikman (Universiti Malaysia Perlis, Malaysia); Ping Jack Soh (University Malaysia Perlis (UniMAP), Malaysia); A. A. H. Azremi (University Malaysia Perlis (UniMAP), Malaysia); F. H. Wee (University Malaysia Perlis (UniMAP), Malaysia); Fareq Malek (University Malaysia Perlis (UniMAP), Malaysia);*
- 45 Thermal Stability of the Microwave Permeability of Nanocrystallized Glass Coated Microwires up to 350°C  
*Anne-Lise Adenot-Engelvin (CEA Le Ripault, France); Jean-Hugues Le Gallou (CEA Le Ripault, France); Olivier Acher (CEA Le Ripault, France);*
- 46 Magneto-optical Kerr Effect in Ferromagnetic Nanostructured Media  
*Vladimir I. Belotelov (A. M. Prokhorov General Physics Institute RAS, Russia); A. N. Kalish (A. M. Prokhorov General Physics Institute, Russia); A. G. Zhdanov (M.V. Lomonosov Moscow State University, Russia); A. A. Grunin (M.V. Lomonosov Moscow State University, Russia); E. A. Ganshina (M.V. Lomonosov Moscow State University, Russia); A. A. Fedyanin (M. V. Lomonosov Moscow State University, Russia); A. K. Zvezdin (A. M. Prokhorov General Physics Institute, Russia);*
- 47 Gradient Magnetostriction and Field Induced Deformation of a Magnetostrictive Cantilever  
*B. Narsu (Inner Mongolia Normal University, China); Guo Hong Yun (Inner Mongolia Normal University, China);*
- 48 Analysis and Improvement for Thrust Fluctuation of Flat Type Voice Coil Motor  
*Liyi Li (Harbin Institute of Technology, China); Dong-Hua Pan (Harbin Institute of Technology, China); Baoquan Kou (Harbin Institute of Technology, China);*
- 49 Angular Dependence of the Exchange Bias with the Uniaxial Anisotropy Perpendicular to the Unidirectional Anisotropy  
*Yuhao Bai (Inner Mongolia University, China); Guo Hong Yun (Inner Mongolia Normal University, China); Bai Narsu (Inner Mongolia Normal University, China);*
- 50 Module of the Ionospheric Support  
*V. M. Smirnov (Kotel'nikov Institute of Radio Engineering and Electronics of RAS, Russia); E. V. Smirnova (Kotel'nikov Institute of Radio Engineering and Electronics of RAS, Russia);*
- 51 The Diagnostics of Ionosphere and Earth Ground Surface by Backscatter Sounding Data  
*S. N. Ponomarchuk (Institute of Solar-Terrestrial Physics SB RAS, Russia); Vladimir I. Kurkin (Institute of Solar-Terrestrial Physics SB RAS, Russia); Alexey V. Oinats (Institute of Solar-Terrestrial Physics SB RAS, Russia);*
- 52 Experimental Studies of the Ionosphere During Stratospheric Warming Events  
*Vladimir I. Kurkin (Institute of Solar-Terrestrial Physics SB RAS, Russia); A. V. Podlesny (Institute of Solar-Terrestrial Physics, Siberian Branch of Russian Academy of Sciences, Russia); Y. S. Mikhailov (Institute of Solar-Terrestrial Physics, Siberian Branch of Russian Academy of Sciences, Russia);*
- 53 The SAR Ocean Image Correlation Model and Its Validation by MultiBand SAR Ocean Images  
*Xiao-Qing Wang (Institute of Electronics, Chinese Academy of Sciences, China); Yongqiang Chen (Institute of Electronics, Chinese Academy of Sciences, China); Min-Hui Zhu (Institute of Electronics, Chinese Academy of Sciences, China); Yunxiang You (Shanghai Jiaotong University, China); Tianqun Hu (Shanghai Jiaotong University, China);*
- 54 Experimental Researches of Dielectric Properties of Ore Minerals in the Frequencies Range 10–150 GHz  
*O. N. Polyakova (Moscow State Pedagogical University, Russia); Vasiliy V. Tikhonov (Russian Academy of Sciences, Russia); D. A. Boyarskii (Russian Academy of Sciences, Russia); G. N. Gol'tsman (Moscow State Pedagogical University, Russia);*
- 55 Ground Penetrating Radar Exploration for Ground Water and Contamination  
*Ziaqiang Zhu (Central South University, China); Xi-anqi He (Central South University, China); Guang-Yin Lu (Central South University, China); Qun-Yi Liu (Central South University, China); Jianhui Li (Central South University, China);*



- 56 Spatial Polarization Signal Processing in Circular Polarization Antenna  
*Dmitry Davidovich Gabriel'yan (Rostov Academy of Service of South Russian State University of Economy and Service, Russia); Marina Yur'yevna Zvezdina (Rostov Academy of Service of South Russian State University of Economy and Service, Russia); Evgeny Dmitrievich Bezuglov (Rostov Academy of Service of South Russian State University of Economy and Service, Russia); Yulia Alexandrovna Zvezdina (Rostov Academy of Service of South Russian State University of Economy and Service, Russia); Sergey Anatol'evich Sil'nitsky (Rostov Academy of Service of South Russian State University of Economy and Service, Russia);*
- 57 Fractal Analysis of Chaff and Sea Mixed Clutter on Ka Band  
*Guangfu Tang (National University of Defense Technology, China); Jianxiong Zhou (National University of Defense Technology, China); Hongzhong Zhao (National University of Defense Technology, China); Qiang Fu (National University of Defense Technology, China);*
- 58 A Rigorous Analysis of VHF-UHF Bistatic Scattering Mechanisms in Forested Areas  
*S. Bellez (Université Pierre et Marie Curie-Paris 6, France); C. Dahon (Université Pierre et Marie Curie-Paris 6, France); H. Roussel (Université Pierre et Marie Curie-Paris 6, France);*
- 59 Reflectivity of Monolayer of Nanoparticles  
*Alexey A. Tishchenko (Moscow Engineering Physics Institute (State University), Russia); A. N. Kalenyuk (Moscow Engineering Physics Institute (State University), Russia); M. N. Strikhanov (Moscow Engineering Physics Institute (State University), Russia);*
- 60 Electromagnetic Orbital Angular Momentum in Remote Sensing  
*Yue-Song Jiang (Beijing University of Aeronautics and Astronautics, China); Yun-Tao He (Beijing University of Aeronautics and Astronautics, China); Fang Li (Beijing University of Aeronautics and Astronautics, China);*
- 61 Accuracy Evaluation of the Huygens Subgridding Method  
*Gabriele Gradoni (Universita Politecnica delle Marche, Italy); Valter Mariani Primiani (Universita Politecnica delle Marche, Italy); Franco Moglie (Universita Politecnica delle Marche, Italy);*
- 62 Electromagnetic Exploration Based on System Identification for Seafloor Hydrocarbon Reservoir and Gas Hydrate  
*Weibin Luo (Chang'an University, China); Qingchun Li (Chang'an University, China);*
- 63 Canopy Spectral Invariants for Remote Sensing of Vegetation Structure  
*Yuri Knyazikhin (Boston University, USA);*
- 64 High-frequency Magneto-impedance in Ultra-thin Magnetically Soft Glass-coated Amorphous Microwires  
*Mihail Ipatov (Universidad del Pais Vasco, Spain); Arcady P. Zhukov (Universidad del Pais Vasco, Spain); J. Gonzalez (Universidad del Pais Vasco, Spain); V. Zhukova (Universidad del Pais Vasco, Spain);*
- 65 Method of Definition of Parameters Layered Ground on Measurements of Radiowave Reflection Coefficient  
*N. A. Armand (Kotel'nikov Institute of Radio Engineering and Electronics of RAS, Russia); O. V. Yushkova (Kotel'nikov Institute of Radio Engineering and Electronics of RAS, Russia); V. M. Smirnov (Kotel'nikov Institute of Radio Engineering and Electronics of RAS, Russia);*
- 66 Subsurface Sounding Phobos Ground in "Fobos-Grunt" Project  
*N. A. Armand (Kotel'nikov Institute of Radio Engineering and Electronics of RAS, Russia); V. N. Marchuk (Kotel'nikov Institute of Radio Engineering and Electronics of RAS, Russia); V. M. Smirnov (Kotel'nikov Institute of Radio Engineering and Electronics of RAS, Russia); O. V. Yushkova (Kotel'nikov Institute of Radio Engineering and Electronics of RAS, Russia); V. V. Abramov (Special Design Bureau of Kotel'nikov IRE RAS, Russia); A. S. Bajanov (Special Design Bureau of Kotel'nikov IRE RAS, Russia); B. S. Lifanzev (Special Design Bureau of Kotel'nikov IRE RAS, Russia);*
- 67 Remote Crust's Sub Cells Satellite Analysis Central Asia, Caspian Basin and Med  
*Karl Federico Kaspareck (Entec, CTE, Italy);*
- 68 A Way of Modeling Radiation-Matter Interaction  
*Sara Liyuba Vesely (I.T.B., C.N.R., Italy); Alessandro Alberto Vesely (Via L. Anelli 13, Milano 20122, Italy);*

- 69 Scattering Characteristics and Star-shaped Cylinder Parameters Correlation  
*Dmitry Davidovich Gabriel'yan (Rostov Academy of Service of South Russian State University of Economy and Service, Russia); Marina Yur'yevna Zvezdina (Rostov Academy of Service of South Russian State University of Economy and Service, Russia); Evgeny Dmitrievich Bezuglov (Rostov Academy of Service of South Russian State University of Economy and Service, Russia); Sergey Nikolayevich Zabelkin (Rostov Academy of Service of South Russian State University of Economy and Service, Russia); Maria Mihailovna Mednaya (Rostov Academy of Service of South Russian State University of Economy and Service, Russia);*
- 70 Analytic Conversions in Diffraction Problems on Metal Cylinders with Multilayer Magnetodielectric Coating  
*Dmitry Davidovich Gabriel'yan (Rostov Academy of Service of South Russian State University of Economy and Service, Russia); Marina Yur'yevna Zvezdina (Rostov Academy of Service of South Russian State University of Economy and Service, Russia); Evgeny Dmitrievich Bezuglov (Rostov Academy of Service of South Russian State University of Economy and Service, Russia); Sergey Nikolayevich Zabelkin (Rostov Academy of Service of South Russian State University of Economy and Service, Russia); Maria Mihailovna Mednaya (Rostov Academy of Service of South Russian State University of Economy and Service, Russia);*
- 71 Study of Relationship between Multiple Scatter and Backscatter Enhancement from Rough Surfaces  
*Chin-Yuan Hsieh (Kao Yuan University, Taiwan); Ling-Hsuan Hsieh (University of Waterloo, Canada);*
- 72 The Application of the Modified Method of Discrete Sources to Solving the Problem of Wave Diffraction on the 3D Plane Grating  
*Sergey A. Manenkov (Moscow Technical University of Communication and Informatics, Russia);*
- 73 The Study on RCS of 2-dimensional Dielectric Wedge Loaded with Conduct Grid  
*Xiaolei Feng (Nanjing Research Institute of Electronics Technology, China); Qiang Zhang (China National Key Laboratory of Antenna and Microwave Technology, China);*

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**Session 4A1a**
**Satellite Thermal Monitoring of the Ocean Surface and the Earth Surface**


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**Thursday AM, August 20, 2009**
**Room A**

Organized by Shigehisa Nakamura

 Chaired by Valery L. Mironov, Shigehisa Nakamura
 

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- 08:40 Error and Domain of Applicability Studies for the Schmutge's Dielectric Model of Moist Soils  
*V. L. Mironov (Kirensky Institute of Physics, Siberian Branch, Russian Academy of Sciences, Russia); Jean-Pierre Wigneron (EPHYSE INRA Centre Bordeaux Aquitaine, France); F. Demontoux (EPHYSE INRA Centre Bordeaux Aquitaine, France); Sergey V. Fomin (Kirensky Institute of Physics, Siberian Branch, Russian Academy of Sciences, Russia); L. G. Kosolapova (Kirensky Institute of Physics, Siberian Branch, Russian Academy of Sciences, Russia);*
- 09:00 Effect of Antireflective Surface at the Radiobrightness Observations for the Topsoil Covered with Coniferous Litter  
*V. L. Mironov (Kirensky Institute of Physics, Siberian Branch, Russian Academy of Sciences, Russia); P. P. Bobrov (Omsk State Pedagogical University, Russia); Alexandr Sergeevich Yashchenko (Kirensky Institute of Physics, Siberian Branch, Russian Academy of Sciences, Russia); I. V. Savin (Kirensky Institute of Physics, Siberian Branch, Russian Academy of Sciences, Russia); Andrey V. Repin (Omsk State Pedagogical University, Russia);*
- 09:20 Monitoring of Satellite Thermal Pattern of an Ocean Front as a Hydrodynamic Convergence  
*Shigehisa Nakamura (Kyoto University, Japan);*
- 09:40 Monitoring of Satellite Thermal Pattern of Ocean Front in Relation to a Double Diffusion Process  
*Shigehisa Nakamura (Kyoto University, Japan);*
- 10:00 Monitoring of Satellite Thermal Pattern of a Drifting Ocean Front  
*Shigehisa Nakamura (Kyoto University, Japan);*
- 10:20 **Coffee Break**

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**Session 4A1b**  
**Scattering, Emission and Remote Sensing of**  
**the Atmosphere**

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**Thursday AM, August 20, 2009**

**Room A**

Chaired by Shigehisa Nakamura

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- 10:40 Characteristics of Spread-F in the Storm Time in the Ionosphere  
*Jiankui Shi (Chinese Academy of Sciences, China); Zhixian Luo (PLA Univ. of Sci. & Tech., China); Taichang Gao (PLA Univ. of Sci. & Tech., China); Guojun Wang (Chinese Academy of Sciences, China);*
- 11:00 Application of Microwave Radiometry for Urban Heat Island Study  
*Evgeny N. Kadygrov (Central Aerological Observatory, Russia); E. A. Vorobeva (Central Aerological Observatory, Russia); I. N. Kuznetsova (Hydrometeorological Centre of Russia, Russian Federation); V. V. Folomeev (Central Aerological Observatory, Russia); Evgeny A. Miller (Central Aerological Observatory, Russia);*
- 11:20 Missile Radar Cross Section Calculation and Its Use in 3-D Anti-missile Defense System  
*Laleh Seyyed Kalantary (The University of Sistan and Baluchestan, Iran); Taha Mosayebi-Dorcheh (The University of Sistan and Baluchestan, Iran); Shahram Mohanna (The University of Sistan and Baluchestan, Iran); Saeed Tavakoli (The University of Sistan and Baluchestan, Iran);*

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**Session 4A2a**

**Light Scattering and Radiative Transfer:**  
**Theories and Applications 3**

**Thursday AM, August 20, 2009**

**Room B**

Organized by Ping Yang, Michael I. Mishchenko  
Chaired by R. Lee Panetta, Gorden Videen

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- 08:40 Training and Validation of a Wide-angle Optical Scattering (TAOS) Pattern Classifier  
*Giovanni Franco Crosta (University of Milan-Bicocca, Italy); Yong-Le Pan (Yale University, USA); Gustavo Eddino Fernandes (Yale University, USA);*
- 09:00 Radiative Transfer and the Eigenfunction Approach in Different Geometries  
*Juris Freimanis (Ventpils International Radio Astronomy Center, Latvia);*

- 09:20 Discrete Sources Method: Light Scattering by Real Erythrocyte Shapes and Results Validation  
*Elena Eremina (University of Bremen, Germany); Konstantin Gilev (Institute of Chemical Kinetics and Combustion, Russia);*
- 09:40 Modelling of Ultrashort Laser Pulse Propagation in Biotissue in Application to Problems of Non-invasive Biomedical Diagnostics  
*Leonid P. Bass (Keldysh Institute of Applied Mathematics, Russian Academy of Science, Russia); O. V. Nikolaeva (Keldysh Institute of Applied Mathematics, Russian Academy of Science, Russia); V. S. Kuznetsov (Research Scientific Center "Kurchatov Institute", Russia); A. V. Bykov (Lomonosov Moscow State University, Russia); A. V. Priezhev (Lomonosov Moscow State University, Russia);*
- 10:00 The 3D Radiative Effects of Clouds in Aerosol Retrieval: Can We Remove Them?  
*Evgeni I. Kassianov (Pacific Northwest National Laboratory, USA); Mikhail Ovchinnikov (Pacific Northwest National Laboratory (PNNL), USA); Larry K. Berg (Pacific Northwest National Laboratory, USA); Sally A. McFarlane (Pacific Northwest National Laboratory, USA); Connor Flynn (Pacific Northwest National Laboratory, USA);*

10:20 **Coffee Break**

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**Session 4A2b**  
**Optical Solitons 1**

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**Thursday AM, August 20, 2009**

**Room B**

Organized by Stefan Wabnitz

Chaired by Stefan Wabnitz, Nikolay N. Rosanov

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- 10:40 All-optical Soliton-based Processing of Noisy Signals  
*Sergei K. Turitsyn (Aston University, UK);*
- 11:00 Widely Wavelength-tunable Soliton Generation and Few-cycle Pulse Compression with the Use of Dispersion-decreasing Fiber  
*Alexey V. Andrianov (Russian Academy of Sciences, Russia); Sergey V. Muraviev (Russian Academy of Sciences, Russia); Arkady V. Kim (Russian Academy of Sciences, Russia); Alexej A. Sysoliatin (Russian Academy of Sciences, Russia);*

- 11:20 Gap Soliton Propagation in Extended Oppositely-directed Coupler  
*A. I. Maimistov (Moscow State Engineering Physics Institute, Russia); S. S. Ozhenko (Moscow State Engineering Physics Institute, Russia); E. V. Kazantseva (Laboratoire de Mathématiques, France);*
- 11:40 Relativistic Phenomena in Interaction of Optical Pulses and Solitons with Radiation in Nonlinear Media  
*Nikolay N. Rosanov (Vavilov State Optical Institute, Russia);*
- 12:00 Soliton Resonances in Dispersion Oscillating Optical Fibers  
*Andrey I. Konyukhov (Saratov State University, Russia); Leonid A. Melnikov (Saratov State University, Russia); Vladimir F. Khopin (Institute of high Purity Substances, Russia); Vladimir A. Stasyuk (Pritel, Inc., USA); Alexej A. Sysoliatin (Russian Academy of Sciences, Russia);*
- 10:00 Metal Nanoantennas and Dielectric Microresonators for Solid-state Quantum Optics  
*Rudolf Bratschitsch (University of Konstanz, Germany);*
- 10:20 **Coffee Break**
- 10:40 Enhanced Raman Light Scattering by a Dipole Placed between Two Metallic Nanoparticles  
*Pavel I. Geshev (Institute of Thermophysics, Russia);*
- 11:00 Enhancement of Magneto-optical Effects of Au Particles and Bi: YIG Composite Films  
*Hironaga Uchida (Toyohashi University of Technology, Japan); Y. Mizutani (Toyohashi University of Technology, Japan); Y. Masuda (Toyohashi University of Technology, Japan); Alexander V. Baryshev (Toyohashi University of Technology, Japan); Mitsuteru Inoue (Toyohashi University of Technology, Japan);*
- 11:20 Enhanced Surface Plasmon Effects Excitation from Several Pair Arrays of Nanoshell Structures  
*Yuan-Fong Chau (Chin Yuan University, Taiwan, R.O.C.); Din Ping Tsai (National Taiwan University, Taiwan, R.O.C.); Tzong-Jer Yang (Chung-Hua University, Taiwan, R.O.C.);*
- 11:40 Electrodynamics of Plasma Oscillations in Nanotransistor Arrays  
*V. V. Popov (Kotelnikov Institute of Radio Engineering and Electronics, Russia);*
- 12:00 Toward a New NanoLIFT Transfer Process  
*L. Hallo (Centre Lasers Intenses et Applications, France); C. Mezel (Centre Lasers Intenses et Applications, France); Antoine Bourgeade (CEA - CESTA, France); J. Breil (Centre Lasers Intenses et Applications, France);*

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**Session 4A3**
**Nanophotonics: Materials and Device Applications 1**


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**Thursday AM, August 20, 2009**
**Room C**

Organized by Liang Tang

 Chaired by Yu-Hsuan Kuo, Liang Tang
 

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- 08:40 Engineering Photons in Nanostructures: Energy Conversion and Nonlinear Dynamics  
*Chee Wei Wong (Columbia University, USA);*
- 09:00 Light Localization and Light-matter Interaction in Photonic Crystal Microcavity  
*Tomoyuki Yoshie (Duke University, USA); Lingling Tang (Duke University, USA);*
- 09:20 Germanium Photonic Devices on Silicon for Optical Modulators  
*Yu-Hsuan Kuo (National Taiwan University, Taiwan); Yin-Shun Li (National Taiwan University, Taiwan); Tsang-Long Chen (National Taiwan University, Taiwan);*
- 09:40 Nanoscale Plasmonic Probes for Advanced Microscopy  
*George Zorinians (University of Exeter, UK); W. L. Barnes (University of Exeter, UK); C. W. See (University of Nottingham, UK); C. Chin-Jung (University of Nottingham, UK); S. Liu (University of Nottingham, UK); Mike Somekh (University of Nottingham, UK);*

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**Session 4A4**
**Biomedical Electromagnetism Instruments, Electromagnetism Condensed Materials and Imaging 2**


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**Thursday AM, August 20, 2009**
**Room D**

Organized by Ganquan Xie, Jianhua Li, Jauyn Grace Lin

 Chaired by Jianhua Li
 

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- 08:40 Waveguide System for Whole-body Exposure of Unrestrained Small Animals  
*Lukáš Víšek (Czech Technical University, Czech Republic); Jan Vrba (Czech Technical University, Czech Republic);*

- 09:00 Application of Bioradiolocation for Estimation of the Laboratory Animals' Movement Activity  
*Lesya N. Anishchenko (Bauman Moscow State Technical University, Russia); A. S. Bugaev (Moscow Institute of Physics and Technology, Russia); Sergey I. Ivashov (Bauman Moscow State Technical University, Russia); Igor A. Vasilyev (Bauman Moscow State Technical University, Russia);*
- 09:20 Extension of Whole-Heart Model by Coupling with Human Ventricular Cell Model  
*E. Ryzhii (University of Aizu, Japan); Maxim Ryzhii (The University of Aizu, Japan); D. Wei (University of Aizu, Japan);*
- 09:40 Changes in Morphology and Function of Intact and Damaged Articular Cartilage: Evaluation Using Polarization Sensitive Optical Coherence Tomography  
*Wen-Chuan Kuo (National Taiwan Normal University, Taiwan); Che-Hung Chan (National Taiwan Normal University, Taiwan); Jeou-Jong Shyu (National Taiwan University, Taiwan); Huei-Wen Chen (National Taiwan Normal University, Taiwan);*
- 10:00 Numerical Simulation of Specific Absorption Rate and Induced Currents in a Rat's Pixel Brain due to Radiofrequency Fields  
*R. Rojas (Universidad Autonoma Metropolitana, México); S. E. Solis (Universidad Autonoma Metropolitana, Mexico); Alfredo O. Rodriguez (Universidad Autonoma Metropolitana, México);*
- 10:20 **Coffee Break**
- 10:40 Computation of SNR and SAR Based on Simple Electromagnetic Simulations  
*R. Rojas (Universidad Autonoma Metropolitana, México); Alfredo O. Rodriguez (Universidad Autonoma Metropolitana, México);*
- 11:00 Methodology for Local and Average SAR Evaluation at Millimeter Waves  
*Maxim Zhadobov (University of Rennes 1, France); Ronan Sauleau (University of Rennes 1, France); Daniel Thouroude (University of Rennes 1, France); Christophe Nicolas Nicolaz (University of Rennes 1, France); Catherine Le Qument (University of Rennes 1, France); Yves Le Dréan (University of Rennes 1, France);*
- 11:20 Near-field Microwave Temperature Tomography with Scanning Diffraction Grating  
*Yuru Nicolaevich Barabanenkov (Institute of Radio Engineering and Electronics, Russian Academy of Sciences, Russia); M. Yu. Barabanenkov (Institute of Microelectronics Technology and High Purity Materials, Russian Academy of Sciences, Russia);*
- 11:40 Biological Measurement in Healthcare Refrigerator  
*Bo-Rim Ryu (Seoul Women's University, Korea); Heung-Gyoon Ryu (Chungbuk National University, Korea);*
- 12:00 AGILD EM and ME Coupled Modeling to Simulate Piezoelectric Materials  
*Jianhua Li (GL Geophysical Laboratory, USA); Chien-Chuang Lin (Da Yeh University, Taiwan); Ganquan Xie (GL Geophysical Laboratory, USA);*
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- Session 4A5**  
**Computational Techniques**
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- Thursday AM, August 20, 2009**  
**Room E**  
Organized by Tsuneki Yamasaki, Yoichi Okuno  
Chaired by Tsuneki Yamasaki
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- 08:40 Scale-changing Technique for the Numerical Modeling of Large Finite Non-uniform Array Structures  
*Aamir Rashid (LAAS, France); Hervé Aubert (Centre National de la Recherche Scientifique (CNRS), France); Hervé Legay (Thales Alenia Space, France);*
- 09:00 Light Propagation in a Disordered Waveguide System: Average Amplitude  
*Akira Komiyama (Osaka Electro-Communication University, Japan);*
- 09:20 Scattering of Electromagnetic Waves by Dielectric Gratings with Dielectric Rectangular Cylinders Sandwiched between Two Multilayers  
*Ryosuke Ozaki (Nihon University, Japan); Tsuneki Yamasaki (Nihon University, Japan); Takashi Hinata (Nihon University, Japan);*
- 09:40 Diffraction by an Impedance Strip: A New Presentation Based on Physical Optics Approach  
*Maxim V. Ivakhnychenko (IRE NAS of Ukraine, Ukraine); Eldar I. Veliev (IRE NAS of Ukraine, Ukraine); Turab M. Ahmedov (Institute of Mathematics NAS of Azerbaijan, Azerbaijan);*
- 10:00 Total-field/Scattered-field Boundary for Multi-dimensional CIP Method  
*Yoshiaki Ando (The University of Electro-Communications, Japan); Sato Murakoshi (The University of Electro-Communications, Japan); Masashi Hayakawa (The University of Electro-Communications, Japan);*
- 10:20 **Coffee Break**

- 10:40 Computerized Calculation of Complex Object RCS Using Physical Theory of Diffraction  
*Andrey M. Lebedev (Institute for Theoretical Applied Electromagnetics, Russian Academy of Sciences, Russia); Anatoli I. Fedorenko (Institute for Theoretical Applied Electromagnetics, Russian Academy of Sciences, Russia); Vladimir N. Kisel (Institute for Theoretical and Applied Electromagnetics, Russian Academy of Sciences, Russia);*
- 11:00 Trend Analysis of Insertion Loss Data Associated on a Naval Vessel with Large, Significantly Loaded Compartments  
*Cynthia Ropiak (SAQ Consulting, Ltd., USA); Matthew McQuage (Dahlgren Division, USA); Wilfredo Padilla-Vargas (Dahlgren Division, USA);*
- 11:20 Variational Effective Index Method for 3D Vectorial Scattering Problems in Photonics: TE Polarization  
*O. V. (Alyona) Ivanova (University of Twente, The Netherlands); Remco Stoffer (PhoeniX Software, The Netherlands); Lasse Kauppinen (University of Twente, The Netherlands); Manfred Hammer (University of Twente, The Netherlands);*
- 11:40 Scattering of Electromagnetic Waves by Inhomogeneous Dielectric Gratings with Perfectly Conducting Strips  
*Tsuneki Yamasaki (Nihon University, Japan); Ryosuke Ozaki (Nihon University, Japan); Takashi Hinata (Nihon University, Japan);*
- 09:20 Millimeter Wavelength Limiters Analysis Using RFS-3 Radio Frequency Simulator  
*Andrey D. Grigoryev (Saint-Petersburg State Electrotechnical University "LETI", Russia);*
- 09:40 Electromagnetic Simulations of Periodic Structures with FDTD Tools  
*Bartlomiej Salski (Institute of Radioelectronics, Poland); Malgorzata Celuch (Warsaw University of Technology, Poland); Wojciech K. Gwarek (Warsaw University of Technology, Poland);*
- 10:00 Ultra-wideband Co-planar Boat Microstrip Patch Antenna with Modified Ground Plane by Using Electromagnetic Band Gap Structure (EBG) for Wireless Communication  
*Dalia Nashaat (Hawaii Center for Advanced Communication, USA); Hala A. Elsadek (Electronics Research Institute, Egypt); Esamt Abdallah (Electronics Research Institute, Egypt); Hadia Elhenawy (Ain Shams University, Egypt); Magdy F. Iskander (Hawaii Center for Advanced Communication, USA);*
- 10:20 **Coffee Break**
- 10:40 Optimization of Complex Microwave Systems with CORS RBF Network Backed by FDTD Analysis Data  
*Ethan K. Murphy (Worcester Polytechnic Institute, USA); Vadim V. Yakovlev (Worcester Polytechnic Institute, USA);*
- 11:00 Microwave Imaging in Closed Cavities — Locating Spatial Inhomogeneities of Dielectric Objects  
*Alexander V. Brouko (Saratov State University, Russia); Ethan K. Murphy (Worcester Polytechnic Institute, USA); Matthias Rother (University of Karlsruhe (TH), Germany); Heike P. Schuchmann (University of Karlsruhe (TH), Germany); Vadim V. Yakovlev (Worcester Polytechnic Institute, USA);*
- 11:20 Cell Bathing Medium as a Target for Non-thermal Effect of MMW on Heart Muscle Contractility  
*G. S. Ayrapetyan (UNESCO Chair-Life Sciences International Postgraduate Educational Center, Armenia); E. H. Dadasyan (UNESCO Chair-Life Sciences International Postgraduate Educational Center, Armenia); E. R. Mikayelyan (UNESCO Chair-Life Sciences International Postgraduate Educational Center, Armenia); S. V. Barseghyan (UNESCO Chair-Life Sciences International Postgraduate Educational Center, Armenia); Sinerik Ayrapetyan (UNESCO Chair-Life Sciences International Postgraduate Educational Center, Armenia);*
- 11:40 Computer Simulation of  $p-i-n$  Diodes for Integrated Millimeter Wavelength Limiters  
*Vladimir V. Popov ("Svetlana" JSC, Russia);*

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**Session 4A6**

**Advanced High Frequency Electromagnetic Simulation Tools 1**

**Thursday AM, August 20, 2009**

**Room F**

Organized by Andrey D. Grigoryev

Chaired by Andrey D. Grigoryev

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- 08:40 The **A**, **B**, **C** Numbers and Their Application in the Theory of Waveguides  
*Mariana Nikolova Georgieva-Grosse (Meterstrasse 4, Germany); Georgi Nikolov Georgiev (University of Veliko Tırnovo "St. St. Cyril and Methodius", Bulgaria);*
- 09:00 Ray Tracing Scattering Simulations for Cavities Filled with Dielectric Material  
*Frank Weinmann (Research Institute for High Frequency Physics and Radar Techniques, Germany);*

- 12:00 Calculation of Optimal Volume Ratio at Parallel Using of Ray and FDTD Method  
*Robert Dady (Budapest University of Technology and Economics (BME), Hungary); Andrea Farkasvolgyi (Budapest University of Technology and Economics (BME), Hungary); Lajos Nagy (Budapest University of Technology and Economics (BME), Hungary);*

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**Session 4A7**

**Antenna Theory and Radiation 3**

**Thursday AM, August 20, 2009**

**Room G**

Organized by Valery A. Permyakov

Chaired by Valery A. Permyakov

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- 08:40 Reducing Measurement Uncertainty of Radiated Emission in Fully Anechoic Chamber  
*András Fehér (Széchenyi István University, Hungary);*
- 09:00 Effect of Antenna Space on MIMO Channel Capacity in Practicable Antenna Structures  
*Andrea Farkasvolgyi (Budapest University of Technology and Economics, Hungary); Robert Dady (Budapest University of Technology and Economics, Hungary); Lajos Nagy (Budapest University of Technology and Economics, Hungary);*
- 09:20 Investigation for Maximal MIMO Channel Capacity by Genetic Algorithm  
*Andrea Farkasvolgyi (Budapest University of Technology and Economics, Hungary); Robert Dady (Budapest University of Technology and Economics, Hungary); Lajos Nagy (Budapest University of Technology and Economics, Hungary);*
- 09:40 Low Profile Circular Yagi-Uda Array and Planar Collinear Monopole Antenna Comparison  
*Lajos Nagy (Budapest University of Technology and Economics, Hungary); Andrea Farkasvolgyi (Budapest University of Technology and Economics, Hungary); Robert Dady (Budapest University of Technology and Economics, Hungary);*
- 10:00 A Method for Formation of Both Deep and Wide Nulls in the Radiation Pattern of a Phased Array Antenna That Is Resistant to the Presence of Random Distortions of the Amplitude-phase Distribution  
*A. O. Manichev (ALTAIR Naval Radio Electronics Scientific Research Institute, Russia); V. A. Balagurovskii (ALTAIR Naval Radio Electronics Scientific Research Institute, Russia); A. S. Kondratiev (ALTAIR Naval Radio Electronics Scientific Research Institute, Russia);*

10:20 **Coffee Break**

- 10:40 Testing and Optimizing of 16-element Antenna Array  
*A. Jeziorski (Military University of Technology, Poland); W. Kolosowski (Military University of Technology, Poland); Piotr Gajewski (Military University of Technology, Poland); Edward Sedek (Telecommunications Research Institute, Poland); Zbigniew Bielecki (Military University of Technology, Poland);*
- 11:00 Miniaturized and Multiband Operations of Inset Feed Microstrip Patch Antenna by Using Novel Shape of Defect Ground Structure (DGS) in Wireless Applications  
*Dalia Nashaat (Hawaii Center for Advanced Communication, USA); Hala A. Elsadek (Electronics Research Institute, Egypt); Esamt Abdallah (Electronics Research Institute, Egypt); Hadia Elhenawy (Ain Shams University, Egypt); Magdy F. Iskander (Hawaii Center for Advanced Communication, USA);*
- 11:20 Qualitative Analysis of Dipole Antennas Impulse Radiation  
*Valery A. Permyakov (Moscow Power Engineering Institute (Technical University), Russia); D. V. Sorokovik (Moscow Power Engineering Institute (Technical University), Russia); A. N. Korykin (Moscow Power Engineering Institute (Technical University), Russia);*
- 11:40 Annular Ring Microstrip Patch Antenna on a Double Dielectric Anisotropic Substrate  
*C. F. L. Vasconcelos (Universidade Federal do Rio Grande Norte, Brazil); Sandro Goncalves da Silva (Federal University of Rio Grande do Norte, Brazil); M. R. M. L. Albuquerque (Universidade Federal do Rio Grande do Norte, Brazil); Jose de Ribamar Silva Oliveira (Centro Federal de Educacao Tecnologica do Rio Grande do Norte, Brazil); Adaildo Gomes d'Assunção (Federal University of Rio Grande do Norte, Brazil);*
- 12:00 Benefits of Material Loading of Electrically Small Resonant Antennas  
*Antti O. Karilainen (TKK Helsinki University of Technology, Finland); P. M. T. Ikonen (Nokia Research Center, Finland); Constantin R. Simovski (TKK Helsinki University of Technology, Finland); Sergei A. Tretyakov (TKK Helsinki University of Technology, Finland);*

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**Session 4A8**
**Extended/Unconventional Electromagnetic Theory, EHD/EMHD, and Electro-biology**


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**Thursday AM, August 20, 2009**
**Room H**

Organized by Eva Gescheidtová

 Chaired by Eva Gescheidtová

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- 08:40 Effect of Exposure to Static, High Voltage Electric Field Generated Nearby HVDC Transmission Lines on Antioxidant Activity of Hepatocytes in Rats  
*Grzegorz Cieslar (Silesian Medical University, Poland); Jolanta Fiolka (Silesian Medical University, Poland); Janina Mrowiec (Silesian Medical University, Poland); Pawel Sowa (Silesian University of Technology, Poland); Slawomir Kasperczyk (Silesian Medical University, Poland); Ewa Birkner (Silesian Medical University, Poland); Aleksander Sieron (Silesian Medical University, Poland);*
- 09:00 Effect of Exposure to Static, High Voltage Electric Field Generated Nearby HVDC Transmission Lines on Behavior of Rats  
*Grzegorz Cieslar (Silesian Medical University, Poland); Janina Mrowiec (Silesian Medical University, Poland); Pawel Sowa (Silesian University of Technology, Poland); Slawomir Kasperczyk (Silesian Medical University, Poland); Aleksander Sieron (Silesian Medical University, Poland);*
- 09:20 Gradient Decay Measurement in NMR Tomography  
*Radek Kubásek (Brno University of Technology, Czech Republic); Eva Gescheidtová (Brno University of Technology, Czech Republic); Karel Bartušek (Institute of Scientific Instruments, Academy of Sciences of Czech Republic, Czech Republic);*
- 09:40 On Compatibility of Classical Electromagnetism with Elements of Non-locality  
*Alexander L. Kholmetskii (Belarus State University, Belarus); O. V. Missevitch (Institute of Nuclear Problems, Belarus); R. Smirnov-Rueda (Complutense University, Spain);*
- 10:00 Fiber Optic Current Sensing in Pulsed Power Application  
*Radek Kubásek (Brno University of Technology, Czech Republic); Pavel Fiala (Brno University of Technology, Czech Republic); Petr Drexler (Brno University of Technology, Czech Republic);*
- 10:20 **Coffee Break**

- 10:40 Air Ions Concentration Influence on Bacterial Colony Count in the Dwelling Spaces  
*Zoltán Szabó (University of Technology Brno, Czech Republic); Karel Bartušek (Institute of Scientific Instruments, Academy of Sciences of Czech Republic, Czech Republic);*
- 11:00 A Simple Economical Building FDNR Blocks with Modern Operational Amplifiers  
*Jiří Sedláček (Brno University of Technology, Czech Republic); Zoltán Szabó (Brno University of Technology, Czech Republic);*
- 11:20 Noise Spectroscopy in Micro-wave Material Structure Examination  
*Radek Kubásek (Brno University of Technology, Czech Republic); Petr Drexler (Brno University of Technology, Czech Republic); Pavel Fiala (Brno University of Technology, Czech Republic); Karel Bartušek (Institute of Scientific Instruments, Academy of Sciences of Czech Republic, Czech Republic);*

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**Session 4A9**
**Theory and Modeling of Multimode Transmission Lines: Waveguides, Microstrip Lines, Dielectric Waveguides 1**


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**Thursday AM, August 20, 2009**
**Room I**

Organized by Anatoly S. Ilinskiy

 Chaired by Anatoly S. Ilinskiy

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- 08:40 Integral Equation Method in the Theory of Dielectric Waveguides  
*Evgeny M. Karchevskiy (Kazan State University, Russia);*
- 09:00 Exact Nonlocal Boundary Conditions in the Theory of Dielectric Waveguides  
*Rafail Z. Dautov (Kazan State University, Russia); Evgeny M. Karchevskiy (Kazan State University, Russia);*
- 09:20 The Over-determined Boundary Value Problem Method in the Electromagnetic Waves Propagation and Diffraction Theory  
*Nikolai B. Pleshchinskii (Kazan State University, Russia); I. E. Pleshchinskaya (Kazan State Technological University, Russia); Evgeny M. Karchevskiy (Kazan State University, Russia);*
- 09:40 Eigenmodes of a Screened Slot Line  
*Anatoly S. Ilinskiy (Moscow State University, Russia); Eugen V. Chernokozhin (Moscow State University, Russia);*



- 10:00 The Radiotransparent Windows Formed of Waveguides with Complex Cross Sections  
*Anatoly S. Ilinskiy (Moscow State University, Russia); Yury Ya. Kharlanov (16th Central Research Test Institute, Russia);*
- 10:20 **Coffee Break**
- 10:40 The Investigation of Properties of Periodic System of X-ray Waveguides  
*A. M. Lerer (Southern Federal University, Russia); M. I. Mazuritsky (Southern Federal University, Russia); P. V. Makhno (Southern Federal University, Russia); V. V. Makhno (Southern Federal University, Russia); G. P. Synavsky (Southern Federal University, Russia);*
- 11:00 Mathematical Modeling of Waveguiding Systems Based on Photonic Crystals  
*A. N. Bogolyubov (M. V. Lomonosov Moscow State University, Russia); Ivan A. Butkarev (M. V. Lomonosov Moscow State University, Russia); Yu. S. Dementieva (M. V. Lomonosov Moscow State University, Russia);*
- 11:20 Improvement on the Stop-band Characteristics of the LPF Using Coupled Lines and a Chip Capacitor  
*Takenori Yasuzumi (Aoyama Gakuin University, Japan); Osamu Hashimoto (Aoyama Gakuin University, Japan); T. Uwano (Office-Uwano, Jpan);*
- 11:40 A Study on the Center Frequency Tunable BPF Using Resonators Loaded by Varactor Diodes  
*Takenori Yasuzumi (Aoyama Gakuin University, Japan); Ryohei Monzen (Office-Uwano, Japan); T. Uwano (Office-Uwano, Jpan); Osamu Hashimoto (Aoyama Gakuin University, Japan);*
- 12:00 Electrodynamics Analysis and Synthesis of Selective Devices on Transverse Irregularities in Ridged Waveguides  
*G. F. Zargano (Southern Federal University, Russia); V. V. Zemlyakov (Southern Federal University, Russia); G. P. Siniavskiy (Southern Federal University, Russia);*

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**Session 4A10**  
**Electromagnetic Field Modeling, Inversion**  
**and Applications 2**

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**Thursday AM, August 20, 2009**

**Room J**

Organized by Ganquan Xie, Michael Oristaglio,  
Jianhua Li

Chaired by Jianhua Li, Clement Kostov

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- 08:40 Fast Evaluation Techniques to Demonstrate Compliance in the Near Field of Active and Passive Transmitters  
*Niels Kuster (Foundation for Research on Information Technologies in Society, Switzerland); Sven Kuhn (Foundation for Research on Information Technologies in Society, Switzerland); Sergey Yu. Perov (RAMS Institute of Occupational Health, Russia); Quirino Balzano (Foundation for Research on Information Technologies in Society, Switzerland);*
- 09:00 Temperature Dependable Microwave Dielectric Model for Frozen Soils  
*V. L. Mironov (Kirensky Institute of Physics, Siberian Branch, Russian Academy of Sciences, Russia); Yu. I. Lukin (Kirensky Institute of Physics, Siberian Branch, Russian Academy of Sciences, Russia);*
- 09:20 Mobile Location Method of Radio Wave Emission Sources  
*Piotr Gajewski (Military University of Technology, Poland); Cezary Ziolkowski (Military University of Technology, Poland); Jan M. Kelner (Military University of Technology, Poland);*
- 09:40 Temperature and Mineralogy Dependable Model for Microwave Dielectric Spectra of Moist Soils  
*V. L. Mironov (Kirensky Institute of Physics, Siberian Branch, Russian Academy of Sciences, Russia); Sergey V. Fomin (Kirensky Institute of Physics, Siberian Branch, Russian Academy of Sciences, Russia);*
- 10:00 Cable Transmission Lines Magnetic Field Compensation  
*M. Sh. Misrikhanov (JSC Federal Network Company Branch "Main Power Networks of the Center", Russia Federation); Nina B. Rubtsova (RAMS Institute of Occupational Health, Russia Federation); A. Yu. Tokarskij (JSC Federal Network Company Branch "Main Power Networks of the Center", Russia Federation);*

10:20 **Coffee Break**

- 10:40 Cavity Imaging System Dependence on Sampling Rate  
*Juan Blas (University of Valladolid, Spain); Ruben Mateo Lorenzo (University of Valladolid, Spain); Alfonso Bahillo (Centre for the Development of Telecommunications of Castilla y Leon, Spain); Santiago Mazuelas (Centre for the Development of Telecommunications of Castilla y Leon, Spain); Patricia Fernandez (University of Valladolid, Spain); D. Bullido (Centre for the Development of Telecommunications of Castilla y Leon, Spain); Evaristo Jose Abril (University of Valladolid, Spain);*
- 11:00 The Calibration Technique for Moist Soils Complex Permittivity Measurements in the Microwave Band  
*V. L. Mironov (Kirensky Institute of Physics, Siberian Branch, Russian Academy of Sciences, Russia); Yu. I. Lukin (Kirensky Institute of Physics, Siberian Branch, Russian Academy of Sciences, Russia);*
- 11:20 Estimating the Ore Volume in AC Smelting Furnaces Using Finite-Element Analysis of Surface Current Density  
*Aleksandar Jeremic (McMaster University, Canada); Ashraf Atalla (McMaster University, Canada);*
- 11:40 3D AGILD Mechanical Modeling for Simulations of New Materials  
*Jianhua Li (Da Yeh University, Taiwan); Feng Xie (GL Geophysical Laboratory, USA); Ganquan Xie (GL Geophysical Laboratory, USA); Chien-Chang Lin (Da Yeh University, Taiwan); Michael Oristaglio (Schlumberger Doll Research, USA);*
- 12:00 Exterior Electromagnetic Field Boundary Scattering  
*Ganquan Xie (National Sun Yat-sen University, Taiwan); Tzon-Tzer Lu (National Sun Yat-sen University, Taiwan); Xianwei Zhou (University of Science and Technology, China); V. G. Veselago (A. M. Prokhorov General Physics Institute, Russian Academy of Sciences, Russian); Clement Kostov (Schlumberger Moscow Research Center, USA);*
- 13:20 Nonstandard Refraction of Light from 1-D Quasi-periodic Surfaces  
*Zu-Han Gu (Surface Optics Corporation, USA); Anting Wang (University of Science & Technology of China, China);*
- 13:40 Multiple Scatter of Vector Electromagnetic Waves from Random Surfaces with Infinite Slopes Using the Kirchhoff Approximation  
*Neil C. Bruce (Universidad Nacional Autónoma de México, Mexico);*
- 14:00 The Scattering of Electromagnetic Waves from Two-dimensional Randomly Rough Surfaces  
*Alexei A. Maradudin (University of California, USA); Tamara A. Leskova (University of California, USA); Inge Simonsen (Norwegian University of Science and Technology, Norway);*
- 14:20 The Scattering of a Surface Plasmon Polariton by a One-dimensional Defect on an Otherwise Planar Surface of a Lossy Metal  
*Alexei A. Maradudin (University of California, USA); Tamara A. Leskova (University of California, USA); Enrique Efren Garca-Guerrero (Universidad Autonoma de Baja California, Mexico); Eugenio Rafael Mendez (Centro de Investigacion Cientifica y de Education Superior de Ensenada (CI-CESE), Mexico);*
- 14:40 Optical Spectrum and Electromagnetic-Field Distribution at Double-Groove Metallic Surface Gratings  
*L. David Wellems (Kirtland Air Force Base, USA); Danhong Huang (Kirtland Air Force Base, USA); Tamara A. Leskova (University of California, USA); Alexei A. Maradudin (University of California, USA);*
- 15:00 Direct Numerical Simulations and Analysis of Wide-band Low-grazing HF Backscatter from Evolving Ocean-like Surfaces  
*Jakov V. Toporkov (Naval Research Laboratory, USA); Mark A. Sletten (Naval Research Laboratory, USA);*

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15:20 **Coffee Break**

- 15:40 Maximums of Backscattering from the Surface Edge above Mirror  
*Andrey M. Lebedev (Institute for Theoretical and Applied Electromagnetics, Russian Academy of Sciences, Russia); Anatoli I. Fedorenko (Institute for Theoretical and Applied Electromagnetics, Russian Academy of Sciences, Russia);*

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**Session 4P1**

**Rough Surface Scattering and Related Phenomena**

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**Thursday PM, August 20, 2009**

**Room A**

Organized by Zu-Han Gu, Danhong Huang

Chaired by Zu-Han Gu, Danhong Huang

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- 16:00 Characterization of Surface Roughness Parameters of Low Reflectance Dielectrics Using Terahertz Fourier Transform Infrared Spectroscopy  
*Arunkumar Jagannathan (University of Massachusetts Lowell, USA); Andrew J. Gatesman (University of Massachusetts Lowell, USA); Robert H. Giles (University of Massachusetts Lowell, USA);*
- 16:20 The Second-order SPM Solution for Scattering from Multi-layer Dielectric Media with Slightly Rough Surface  
*Zhiwei Lin (Institute of Electronics, Chinese Academy of Sciences, China); Xiaojuan Zhang (Institute of Electronics, Chinese Academy of Sciences, China); Guangyou Fang (Institute of Electronics, Chinese Academy of Sciences, China);*
- 16:40 On Frequency and Spatial Correlation of Waves Scattered by Fractal Surface  
*A. V. Laktyunkin (Kotelnikov Institute of Radio Engineering and Electronics of Russian Academy of Sciences, Russia); A. A. Potapov (Kotelnikov Institute of Radio Engineering and Electronics of Russian Academy of Sciences, Russia);*
- 15:00 L-band Tunable High Repetition Rate Synchronized Fiber Laser  
*A. A. Sysoliatin (Fiber Optics Research Center, Russia); M. Y. Salganskii (Fiber Optics Research Center, Russia); Andrey I. Konyukhov (Saratov State University, Russia); Leonid A. Melnikov (Saratov State University, Russia); V. A. Stasyuk (Pritel, Inc., USA);*
- 15:20 **Coffee Break**
- 15:40 Dissipative Solitary Waves in Negative Index Materials with Added Gain  
*Ildar R. Gabitov (University of Arizona, USA); Andrei I. Maimistov (Moscow State Engineering Physics Institute, Russia); Bridget Kennedy (University of Arizona, USA);*
- 16:00 Self-propelled Cavity Solitons in VCSEL with Frequency Selective External Feedback  
*Pavel V. Paulau (NASB, Belarus); Damia Gomila (Campus Universitat Illes Balears, Spain); Pere Colet (Campus Universitat Illes Balears, Spain); Manuel A. Matias (Campus Universitat Illes Balears, Spain); N. A. Loiko (NASB, Belarus); W. J. Firth (University of Strathclyde, UK);*

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**Session 4P2**  
**Optical Solitons 2**

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**Thursday PM, August 20, 2009**

**Room B**

Organized by Stefan Wabnitz

Chaired by Stefan Wabnitz, Nikolay N. Rosanov

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- 13:40 Propagation of Partially Coherent Light in Nonlinear Media  
*Tobias Hansson (Chalmers University of Technology, Sweden); Dan Anderson (Chalmers University of Technology, Sweden); Mietek Lisak (Chalmers University of Technology, Sweden);*
- 14:00 Chirped Self-similar Spatial Solitary Waves  
*K. Senthilnathan (National Institute of Technology, India); Abdosllam M. Abobaker (The Higher Institute of Electronics, Africa); Kaliyaperumal Nakkeeran (University of Aberdeen, UK);*
- 14:20 Polarization Domain Wall Solitons in Elliptically Birefringent Optical Fibers  
*Stefan Wabnitz (University of Brescia, Italy);*
- 14:40 Optical Solitons of the Discrete Reduced Maxwell-Bloch System in a Ring Cavity  
*John M. Arnold (University of Glasgow, UK);*
- 16:20 Cavity Polariton Solitons  
*Falk Lederer (Friedrich Schiller University Jena, Germany); Dmitry V. Skryabin (University of Bath, UK); O. Egorov (Friedrich-Schiller-Universität Jena, Germany); A. V. Yulin (University of Bath, United Kingdom);*
- 16:40 Towards Linear and Nonlinear Integrated MagnetoOptics  
*Roberto Morandotti (Institute National de la Recherche Scientifique Énergie, Matériaux et Télécommunications (INRS-EMT), Canada); Yoav Linzon (Université du Québec, Canada); Marcello Ferrera (Université du Québec, Institute National de la Recherche Scientifique, Canada); C. S. Manda (Université du Québec, Canada); M. Zaezjev (Université du Québec, Canada); Luca Razzari (Université du Québec, Institute National de la Recherche Scientifique, Canada); J.-Y. Hwang (Université du Québec, Canada); K. A. Rutkowska (Université du Québec, Canada); Alain Pigolet (Université du Québec, Institute National de la Recherche Scientifique, Canada); Boris A. Malomed (Tel Aviv University, Israel);*

- 17:00 Moving Solitons in a Cavity Soliton Laser  
*Keivan Mahmoud Aghdami (Payame Noor University, Iran); Franco Prati (Università dell'Insubria, Italy); Giovanna Tissoni (Università dell'Insubria, Italy); Massimo Brambilla (INFN Research Unit of Bari, Italy); Luigi A. Lugiato (Università dell'Insubria, Italy);*
- 17:20 Spatial Solitons in Periodic Semiconductor-dielectric Nano-structures  
*Andrey V. Gorbach (University of Bath, UK); Dmitry V. Skryabin (University of Bath, UK);*
- 15:00 Slow-light Enhanced Nonlinear Optics in Silicon Photonic Crystal Waveguides  
*David J. Moss (University of Sydney, Australia); B. Corcoran (University of Sydney, Australia); C. Monat (University of Sydney, Australia); Christian Grillet (University of Sydney, Australia); T. P. White (University of St Andrews, UK); L. O'Faolain (University of St Andrews, UK); Thomas F. Krauss (University of St. Andrews, UK); Benjamin J. Eggleton (University of Sydney, Australia);*

15:20 **Coffee Break**


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**Session 4P3**  
**Nanophotonics: Materials and Device Applications 2**

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**Thursday PM, August 20, 2009**

**Room C**

Organized by Liang Tang

Chaired by Yu-Hsuan Kuo, Liang Tang

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- 13:40 Novel Silicon Nanophotonic Structures Lab-on-a-chip Sensing  
*Ali Adibi (Georgia Institute of Technology, USA);*
- 14:00 Progress in Metal-insulator-metal Waveguide Lasers at Near-infrared Wavelengths  
*Milan J. H. Marell (COBRA Research Institute, Technische Universiteit Eindhoven, Netherlands); Martin T. Hill (COBRA Research Institute, Technische Universiteit Eindhoven, Netherlands);*
- 14:20 Nano-plasmonic Devices: From Nano-confinement to Stopped Light  
*Pavel Ginzburg (Technion Israel Institute of Technology, Israel); Alex Hayat (Technion Israel Institute of Technology, Israel); Nikolai Berkovitch (Technion Israel Institute of Technology, Israel); Gilad Rosenblatt (Technion Israel Institute of Technology, Israel); Meir Orenstein (Technion Israel Institute of Technology, Israel);*
- 14:40 Charged Type-II Quantum Dots and Quantum Dot Dendrimers  
*Sungjee Kim (Pohang University of Science and Technology, Korea);*
- 15:40 NIR, MWIR and LWIR Quantum Well Infrared Photodetector Design Using Transfer Matrix Method  
*Ricardo Augusto T. Santos (Instituto Tecnológico de Aeronautica, Brazil); Fabio Durante Pereira Alves (Instituto Tecnológico de Aeronautica, Brazil); J. De Amorim (Instituto Tecnológico de Aeronautica, Brazil); C. G. R. Taranti (Instituto Tecnológico de Aeronautica, Brazil); Gamani Karunasiri (Naval Postgraduate School, USA);*
- 16:00 830–940 nm Tunable Quantum Well Infrared Photodetector Using Interband Transitions  
*Fabio Durante Pereira Alves (Instituto Tecnológico de Aeronautica, Brazil); Ricardo Augusto T. Santos (Instituto Tecnológico de Aeronautica, Brazil); Gamani Karunasiri (Naval Postgraduate School, USA);*
- 16:20 Exciton-polariton Coupling and Photoluminescence Enhancement in SiC Nanocrystals  
*Tetyana V. Torchynska (ESFM-National Polytechnic Institute, Mexico);*
- 16:40 An Adaptive Spectroellipsometric Identifier for Ecological Monitoring of the Aquatic Environment  
*Ferdinand A. Mkrtchyan (Institute of Radioengineering and Electronics, Russian Academy of Sciences, Russia); V. F. Krapivin (Institute of Radioengineering and Electronics, Russian Academy of Sciences, Russia); V. I. Kovalev (Institute of Radioengineering and Electronics, Russian Academy of Sciences, Russia); V. V. Klimov (Institute of Radioengineering and Electronics, Russian Academy of Sciences, Russia);*

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**Session 4P4a**
**Superconductive Active and Passive Devices  
and Circuits: Models and Techniques of  
Simulation**


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**Thursday PM, August 20, 2009**
**Room D**

Organized by Pascal Febvre, Michel Piat

 Chaired by Pascal Febvre
 

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- 13:20 Electro-thermal and Optical Modeling of Superconducting Nanowire Single-photon Detectors  
*Alexei D. Semenov (Institute of Planetary Research, Germany);*
- 13:40 Focal Plane Array of Cold-Electron Bolometers  
*Leonid Kuzmin (Chalmers University of Technology, Sweden);*
- 14:00 Low Loss Nb and NbTiN Circuit Design for the THz SIS Mixer  
*Alexandre Karpov (California Institute of Technology, USA); D. Miller (California Institute of Technology, USA); J. A. Stern (Jet Propulsion Laboratory, USA); Bruce Bumble (Jet Propulsion Laboratory, USA); Henry G. LeDuc (Jet Propulsion Laboratory, USA); J. Zmuidzinas (California Institute of Technology, USA);*
- 14:20 Electrodynamics Modeling and Measurement of Non-uniform Arrays of Josephson Junctions  
*Faouzi Boussaha (Observatoire de Paris, France); Lionel Loukitch (INSA de Rouen, France); Morvan Salez (Observatoire de Paris, France); Alexandre Féret (Observatoire de Paris, France); Christine Chaumont (Observatoire de Paris, France); Jean-Guy Caputo (INSA de Rouen, France);*
- 14:40 Design of a Wideband Slot Bow-tie Antenna Excited by a Microstrip to CPW Transition for Applications in the Millimeter Wave Band  
*Angel Colin (Instituto de Física de Cantabria (CSIC-UC), Spain); Pascal Febvre (University of Savoie, France);*
- 15:00 Time-domain Modeling of Superconductors Using a Recursive Convolution Approach  
*Hannes Toepfer (Institut für Mikroelektronik- und Mechatronik-Systeme gGmbH, Germany); Thomas Ortlepp (Ilmenau University of Technology, Germany);*
- 15:20 **Coffee Break**

- 15:40 Modelling and Simulation Techniques to Calculate Passive Component Characteristics in Superconductive Integrated Circuits  
*Coenrad Johann Fourie (Stellenbosch University, South Africa); A. Young (Stellenbosch University, South Africa); David Bruce Davidson (University of Stellenbosch, South Africa);*
- 16:00 Comparison of Typical Superconducting Structures with Analytical and 3D Modelling Methods  
*Pascal Febvre (University of Savoie, France); D. Bouis (University of Savoie, France); Angel Colin (Instituto de Física de Cantabria (CSIC-UC), Spain);*

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**Session 4P4b**
**Inverse and Forward Problems in Radiative  
Transport**


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**Thursday PM, August 20, 2009**
**Room D**

Organized by Vadim A. Markel

 Chaired by Vadim A. Markel
 

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- 16:20 Numerical Reconstruction of the Refractive Index from the Reflection Data  
*O. V. Belai (Institute of Automation and Electrometry, Siberian Branch, Russian Academy of Sciences, Russia); L. L. Frumin (Institute of Automation and Electrometry, Siberian Branch, Russian Academy of Sciences, Russia); E. V. Podivilov (Institute of Automation and Electrometry, Siberian Branch, Russian Academy of Sciences, Russia); David A. Shapiro (Institute of Automation and Electrometry, Siberian Branch, Russian Academy of Sciences, Russia);*
- 16:40 The Exact Solution for Inverse Problem in Transmission Optical Tomography for a Proportional Scattering Medium  
*Sergey A. Tereshchenko (Moscow Institute of Electronic Technology (MIET), Russia);*

- 17:00 Three-dimensional Förster Resonance Energy Transfer Imaging in Turbid Media by Using Time-gated Data Acquisition  
*Vadim Y. Soloviev (University College London, United Kingdom); James McGinty (Imperial College London, UK); Alessandro Sardini (Hammersmith Hospital Campus, UK); Daniel W. Stuckey (Imperial College Faculty of Medicine, Hammersmith Hospital Campus, UK); Khadija B. Tahir (Imperial College Photonics, UK); Romain Laine (Imperial College Photonics, UK); Joseph V. Hajnal (Hammersmith Hospital Campus, UK); Paul M. W. French (Imperial College Photonics, UK); Simon R. Arridge (University College London, UK);*
- 17:20 Inverse Problem for the Radiative Transport Equation with the Method of Rotated Reference Frames  
*Manabu M. Machida (University of Pennsylvania, USA); George Y. Panasyuk (University of Pennsylvania, USA); John C. Schotland (University of Pennsylvania, USA); Vadim A. Markel (University of Pennsylvania, USA);*
- 14:20 Method of Optimum Simple Iteration for the Solution of Large Complex Systems of the Linear Algebraic Equations Arising in Scattering Problems  
*Sergey P. Kulikov (Moscow Technical University of Radio Engineering, Electronics and Automation, Russia);*
- 14:40 Numerical Solution of 2D and 3D Scattering Problems on a Dielectric Body by a Method of Optimum Simple Iteration  
*Sergey P. Kulikov (Moscow Institute of Radio Engineering, Electronics and Automation, Russia);*
- 15:20 **Coffee Break**

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**Session 4P5b**
**Magnetoelectric Composites: Physics and Applications**


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**Thursday PM, August 20, 2009**
**Room E**

Organized by Yury K. Fetisov, Gopalan Srinivasan

 Chaired by Yury K. Fetisov
 

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**Session 4P5a**  
**Computational Electromagnetics 1**


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**Thursday PM, August 20, 2009**
**Room E**

Organized by Alexander B. Samokhin

 Chaired by Alexander B. Samokhin
 

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- 13:20 Classical Theorems of Discrete Electrodynamics on Simplicial Complexes  
*John M. Arnold (University of Glasgow, UK);*
- 13:40 Maintenance of Current Limited Reactor Electromagnetic Compatibility and Safety  
*M. Sh. Misrikhanov (JSC Federal Network Company Branch "Main Power Networks of the Center", Russia Federation); Nina B. Rubtsova (RAMS Institute of Occupational Health, Russia Federation); A. Yu. Tokarskij (JSC Federal Network Company Branch "Main Power Networks of the Center", Russia Federation);*
- 14:00 A Parametric Analysis of Perfect Matched Layer Model of Finite Difference Time Domain Method  
*Jorge Sosa-Pedroza (Instituto Politecnico Nacional, Mexico, D.F.); Manuel Benavides-Cruz (Instituto Politecnico Nacional, Mexico, D.F.); M. Nieto-Rodríguez (Instituto Politecnico Nacional, Mexico, D.F.); M. Galaz-Larios (Instituto Politecnico Nacional, Mexico, D.F.); M. Enciso-Aguilar (Instituto Politecnico Nacional, Mexico, D.F.);*
- 15:40 Design and Optimization of Wideband Multi Section Coupled-line Phase Shifters with Impedance Matching  
*Homayoon Oraizi (Iran University of Science and Technology, Iran); Alireza Shamsafar (Iran University of Science and Technology, Iran);*
- 16:00 Thick Film Lead Zirconate Titanate — Nickel Zinc Ferrite Heterostructures: Fabrication by Screen Printing Technology and Magnetoelectric Properties  
*A. Bush (Moscow Institute of Radio Engineering, Electronics and Automation, Russia); V. Shkuratov (Moscow Institute of Radio Engineering, Electronics and Automation, Russia); Yury K. Fetisov (Moscow State Institute of Radio Engineering, Electronics and Automation, Russia);*
- 16:20 Magnetoelectric Interaction in a Cylindrical Piezoelectric-metal Structure  
*Yury K. Fetisov (Moscow State Institute of Radio Engineering, Electronics and Automation, Russia); D. V. Chashin (Moscow State Institute of Radio Engineering, Electronics and Automation, Russia);*
- 16:40 Magnetoelectric Interaction in Amorphous Magnetic-piezoelectric Structures  
*Leonid Fetisov (Moscow State University, Russia); Nikolai Perov (Moscow State University, Russia); Yury K. Fetisov (Moscow State Institute of Radio Engineering, Electronics and Automation, Russia);*

- 17:00 Hexaferrite-piezoelectric Layered Structures for Sub-terahertz Devices  
*Alexey B. Ustinov (Oakland University, USA); Gopalan Srinivasan (Oakland University, USA);*
- 17:20 Narrow-band Active Ring Filters Based on Ferrite-ferroelectric Layered Structures  
*Alexey B. Ustinov (St. Petersburg Electrotechnical University, Russia); Boris A. Kalinikos (St. Petersburg Electrotechnical University, Russia); Gopalan Srinivasan (Oakland University, USA);*
- 17:40 High-frequency Susceptibility in Giant Magnetostrictive TbCo<sub>2</sub>/FeCo Multilayers under SRT, Induced by an External Magnetic Field  
*Alexey Klimov (LEMAR — IEMN CNRS UMR 8520, France); Nicolas Tiercelin (LEMAR — IEMN CNRS UMR 8520, Cité scientifique, France); Vladimir Preobrazhensky (LEMAR — IEMN CNRS UMR 8520, Cité scientifique, France); Philippe Pernod (LEMAR — IEMN CNRS UMR 8520, Cité scientifique, France); Yuri Ignatov (Institute of Radioengineering and Electronics (IRE RAS), Russia); Sergei Nikitov (Institute of Radioengineering and Electronics (IRE RAS), Russia);*
- 18:00 Automated Positioning System for Measurements of Space-distributed Electromagnetic Fields  
*Andrei V. Dubatov (Moscow Technical University of Radio Engineering, Electronics and Automatics, Russia);*
- 14:00 On the Number of TE and TM-modes in a Multilayer Planar Dielectric Waveguide with the Layers of Two Types  
*Mikhail Dmitrievich Kovalev (BMSTU, Russia);*
- 14:20 3D-EMHD-FDTD Simulation of Plasma Propulsion  
*Domingos Savio das Virgens Alves (Instituto Tecnológico de Aeronautica, Brasil); Alberto Jose de Faro Orlando (Instituto Tecnológico de Aeronautica, Brazil);*
- 14:40 Diffraction of the Electromagnetic Pulses on Apertures in the Screen  
*E. V. Golovacheva (Southern Federal University, Russia); A. M. Lerer (Southern Federal University, Russia); V. A. Lerer (Southern Federal University, Russia); Pavel Viktorovich Makhno (Southern Federal University, Russia); O. S. Labunko (Southern Federal University, Russia);*
- 15:00 Mathematical Model of the Phased Open Ended Waveguides Array Antenna with Multilayered Grids from Cylindrical Conductors before the Aperture  
*Andrey A. Prilutskiy (Scientific Research Institute of Long Distance Radio Communication, Russia);*
- 15:20 **Coffee Break**

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**Session 4P6a**

**Modern Hybrid Methods in the Problems of Computational Electromagnetics**

**Thursday PM, August 20, 2009**

**Room F**

Organized by Victor Filippovich Kravchenko

Chaired by Victor Filippovich Kravchenko

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- 13:20 The Theory of R-functions and Wavelets in the Boundary Value Problems of Electrodynamics  
*V. F. Kravchenko (Kotel'nikov Institute of Radio Engineering and Electronics of RAS, Russia); A. V. Yurin (Bauman Moscow State Technical University, Russia);*
- 13:40 Full Wave Hybrid Technique for CAD of Passive Waveguide Components with Complex Cross Section  
*M. B. Manuilov (Southern Federal University, Russia); K. V. Kobrin (Southern Federal University, Russia); G. P. Sinyavsky (Southern Federal University, Russia); O. S. Labunko (Southern Federal University, Russia);*

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**Session 4P6b**

**Advanced High Frequency Electromagnetic Simulation Tools 2**

**Thursday PM, August 20, 2009**

**Room F**

Organized by Andrey D. Grigoryev

Chaired by Andrey D. Grigoryev

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- 15:40 Phase Behaviour of a Two-Layered Circular Ferrite-Dielectric Waveguide with Azimuthal Magnetization  
*Georgi Nikolov Georgiev (University of Veliko Tirnovo, Bulgaria); Mariana Nikolova Georgieva-Grosse (Meterstrasse 4, Germany);*
- 16:00 Theorem for the  $L(\mathbf{c}, \boldsymbol{\rho}, \mathbf{n})$  Numbers  
*Georgi Nikolov Georgiev (University of Veliko Tirnovo, Bulgaria); Mariana Nikolova Georgieva-Grosse (Meterstrasse 4, Germany);*
- 16:20 Comparative Analysis of Approaches for High Frequency Electromagnetic Simulation  
*D. S. Butyugin (Institute of Computational Mathematics and Mathematical Geophysics, Russia); Valery P. Il'in (Institute of Computational Mathematics and Mathematical Geophysics, Russia); A. V. Petukhov (Institute of Computational Mathematics and Mathematical Geophysics, Russia);*

- 16:40 A Compact Dual-frequency Microstrip Antenna for Wireless Applications  
*Arpita Sen (Birla Institute of Technology (Deemed University), India); Neela Chattoraj (Birla Institute of Technology (Deemed University), India); Jibendu Roy (Birla Institute of Technology (Deemed University), India);*

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**Session 4P7**

**Ultra Wide Band and Chaotic Communications**

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**Thursday PM, August 20, 2009**

**Room G**

Organized by Sergei O. Starkov, A. I. Panas

Chaired by Sergei O. Starkov

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- 13:40 Experimental Characterisation of Radiowave Signal Propagation for Indoor UWB Wireless Communications  
*Tian Hong Loh (National Physical Laboratory, United Kingdom); Luk R. Arnaut (National Physical Laboratory, United Kingdom);*
- 14:00 Performance of Wireless Communication System with Ultrawideband Chaotic Signals in the Multipath Channel  
*Lev V. Kuzmin (Institute of Radio Engineering and Electronics of the RAS, Russia); Sergei O. Starkov (Obninsk State Technical University for Nuclear Power Engineering, Russia); Andrey V. Kletsov (Moscow Institute of Physics and Technology (State University), Russia);*
- 14:20 Multipath Amplification in UWB Chaotic Communications  
*Yuri V. Andreyev (Kotelnikov Institute of Radio Engineering and Electronics of RAS, Russia); Alexander S. Dmitriev (Institute of Radio Engineering and Electronics of Russian Academy of Sciences, Russia); Andrey V. Kletsov (Institute of Radio Engineering and Electronics of Russian Academy of Sciences, Russia);*
- 14:40 Experimental Generation of Chaotic Oscillations in Microwave Band by Phase-locked Loop  
*Alexander S. Dmitriev (Institute of Radio Engineering and Electronics of Russian Academy of Sciences, Russia); Andrey V. Kletsov (Institute of Radio Engineering and Electronics of Russian Academy of Sciences, Russia); Lev V. Kuzmin (Institute of Radio Engineering and Electronics of the RAS, Russia);*

- 15:00 Ultrawideband Direct Chaotic Transceiver for Multimedia Applications  
*Lev Kuzmin (Institute of Radio Engineering and Electronics of the RAS, Russia); Andrey Kletsov (Moscow Institute of Physics and Technology (State University), Russia); Vadim Lazarev (Moscow Institute of Physics and Technology (State University), Russia);*

15:20 **Coffee Break**

- 15:40 Multi-band Chaotic Oscillator with Phase-locked Loop  
*Konstantin G. Mishagin (University of Nizhny Novgorod, Russia); Valery V. Matrosov (University of Nizhny Novgorod, Russia); Lev V. Kuzmin (Institute of Radio Engineering and Electronics of the RAS, Russia); Andrey V. Kletsov (Institute of Radio Engineering and Electronics of Russian Academy of Sciences, Russia);*

- 16:00 UWB Microwave Chaotic SiGe Generator  
*E. V. Efremova (Kotel'nikov Institute of Radio Engineering and Electronics of RAS, Russia);*

- 16:20 An Ultra Wideband Spatio-temporal Channel Sounder Using an OFDM Signal  
*Hiroto Iizuka (Tokyo Denki University, Japan); Masaki Takahashi (Tokyo Denki University, Japan); Naohiko Iwakiri (Tokyo Denki University, Japan); Takehiko Kobayashi (Tokyo Denki University, Japan);*

- 16:40 The Peculiarities of Spatial Combined Effects of UWB Chaotic Signals  
*Lev V. Kuzmin (Institute of Radio Engineering and Electronics of the RAS, Russia); Sergei Starkov (Obninsk State Technical University for Nuclear Power Engineering, Russia);*

- 17:00 3–5 GHz Ultra-wideband Omnidirectional Printed Circuit Antenna  
*Anton V. Uvarov (Moscow Institute of Physics and Technology (State University), Russia); Nikolay P. Chybinskiy (Moscow Institute of Physics and Technology (State University), Russia); Andrey V. Uvarov (Moscow Institute of Physics and Technology (State University), Russia);*

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**Session 4P8**

**Asymptotic High Frequency Methods**

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**Thursday PM, August 20, 2009**

**Room H**

Organized by Frédéric Molinet, Giuliano Manara

Chaired by Frédéric Molinet, Giuliano Manara

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- 13:20 Asymptotic Currents on a Strongly Elongated Body Illuminated by a Plane Wave in the Paraxial Direction  
*Ivan V. Andronov (St. Petersburg State University, Russia); Daniel P. Bouche (CEA/DIF/DPTA, France); Frédéric Molinet (MOTHEM, France); Hervé Stève (Dassault Aviation, France);*
- 13:40 High Frequency Asymptotics of Electromagnetic Field on a Strongly Elongated Spheroid  
*Ivan V. Andronov (St. Petersburg State University, Russia);*
- 14:00 Radiation of a Dipole on a Strongly Elongated Body of Revolution Truncated by a Plane Perpendicular to Its Axis  
*Frédéric Molinet (MOTHEM, France);*
- 14:20 Electromagnetic Creeping Waves and Their Degeneration  
*Ivan V. Andronov (University of St. Petersburg, Russia); Daniel P. Bouche (CEA, France);*
- 14:40 The Interaction of Creeping Waves on a Smooth Anisotropic Impedance Surface  
*D. Yu. Zaika (St. Petersburg University, Russia); M. V. Perel (St. Petersburg University, Russia); Ivan V. Andronov (St. Petersburg University, Russia);*
- 15:00 Gaussian Beams Summation to Simulate High Frequencies RCS  
*Thierry George (Celum, France); Philippe Pouliguen (Centre d'Electronique de l'Armement (CELAR), France);*
- 15:20 **Coffee Break**
- 15:40 "Complex Source": Singularities in Real Space  
*Azat M. Tagirdzhanov (St. Petersburg State University, Russia); A. S. Blagovestchenskii (St. Petersburg State University, Russia); Aleksei Kiselev (Steklov Mathematical Institute, Russia);*
- 16:00 High Frequency Electromagnetic Wave Diffraction by a Curved Wedge Illuminated with a Complex Source Point Beam  
*Prabhakar H. Pathak (Ohio State University, USA); Youngchel Kim (The Ohio State University, USA); Robert J. Burkholder (The Ohio State University, USA);*
- 16:20 Radon Transform Interpretation of Physical Optics Integral for Scalar Waves: The Near-Near Field Case  
*Huseyin Arda Ulku (Gebze Institute of Technology, Turkey); A. Arif Ergin (Gebze Institute of Technology, Turkey);*
- 16:40 Progress on the Hybridization of Simulation Codes Based on Numerical High and Low Frequency Techniques for the Efficient Array Antenna Design in the Presence of Electrically Large Structure  
*Hsi-Tseng Chou (Yuan Zi University, Taiwan, R.O.C.); Fang-Yao Kuo (Yuan Ze University, Taiwan, R.O.C.); Heng-Tung Hsu (Yuan Ze University, Taiwan, R.O.C.);*
- 17:00 A New UTD Based Relation between Modified Pauli-Clemmow and Van Der Waerden Methods for Asymptotic Evaluation of Wedge Diffraction Integrals  
*Giuliano Manara (University of Pisa, Italy); Prabhakar H. Pathak (Ohio State University, USA); Paolo Nepa (University of Pisa, Italy);*
- 17:20 Use of Conformal Mappings Theory for Analytical Solving of Helmholtz's Equation Boundary Value Problem in the Method of Generalized Eikonal  
*Michael V. Vesnik (Institute of Radio Engineering and Electronics of Russian Academy of Sciences, Russia);*

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**Session 4P9a**
**Theory and Modeling of Multimode Transmission Lines: Waveguides, Microstrip Lines, Dielectric Waveguides 2**


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**Thursday PM, August 20, 2009**
**Room I**

Organized by Anatoly S. Ilinskiy

 Chaired by Anatoly S. Ilinskiy
 

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- 13:40 Differintegral Electromagnetic Theory of Waves in the Fractal Structured Medium  
*Volodymyr M. Onufriyenko (Zaporizhzhya National Technical University, Ukraine);*
- 14:00 Developing Sample Holders for Measuring Shielding Effectiveness of Thin Layers on Compound Semiconductor Substrates  
*András Fehér (Széchenyi István University, Hungary); Szilvia Nagy (Széchenyi István University, Hungary); Mojzes Imre (Budapest University of Technology and Economics, Hungary);*
- 14:20 Analysis, Simulation and Equivalent Circuit of Defected Microstrip Structures (DMS) and Their Applications in Microwave Filter Design  
*Zamzam Kordiboroujeni (Iran University of Science and Technology, Iran); Morteza Kazerooni (Iran University of Science and Technology (IUST), Iran); Ahmad Cheldavi (Iran University of Science and Technology, Iran);*

- 14:40 On Explicit Solutions to the Problem of Plane Wave Diffraction by a Kerr-type Nonlinear Dielectric Layer  
*Yury V. Shestopalov (Karlstad University, Sweden);*
- 15:00 Cross-linked Transmission Line Based Planar TLM-net with Effective Dispersion of 4th Order  
*Sergey Aleksandrovich Ivanov (Moscow State University, Russia); Boris Vasilievich Sestroretsky (Lavochkin Association, Russia); Aleksandr Nikolaeovich Bogolyubov (Moscow State University, Russia);*
- 15:20 **Coffee Break**

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**Session 4P9b**

**Microwave and Millimeter-wave Devices and Circuits with CAD 1**

**Thursday PM, August 20, 2009**

**Room I**

Organized by Subal Kar

Chaired by Subal Kar

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- 15:40 Novel Compact Defected Ground Structure Based Bandpass Filters on Coplanar Waveguide  
*Heba Badr El-Din El-Shaarawy (Centre National de la Recherche Scientifique (LAAS-CNRS), France); Fabio Coccetti (Centre National de la Recherche Scientifique (CNRS), France); Robert Plana (CNRS, France); Mostafa El-Said (Cairo University, Egypt); Essam A. Hashish (Cairo University, Egypt);*
- 16:00 Design and Development of Helical Band Pass Filters for Satellite Receivers  
*Jagdish Shivhare (Institute of Technology and Management, India); S. B. Jain (Indira Gandhi Institute of Technology, Indraprastha University Campus, India);*
- 16:20 A Low Phase-noise Low-power PLL in 0.13- $\mu\text{m}$  CMOS for Low Voltage Application  
*Q. Guo (Zhejiang University, China); Hai-Feng Zhou (Zhejiang University, China); W. W. Cheng (Zhejiang University, China); Yan Han (Zhejiang University, China); X. X. Han (Zhejiang University, China); Xiao Liang (Zhejiang University, China);*
- 16:40 A Concurrent Triple-band CMOS LNA Design for 4G Applications  
*Yo Han Jang (Hanyang University, Republic of Korea); Nackgyun Seong (Hanyang University, Korea); Jae-Hoon Choi (Hanyang University, Republic of Korea);*

- 17:00 Particle Swarm Optimization Applied to Determination of the Equivalent Circuit Subject to Noise Parameters of the FETs  
*Ufuk Özkaya (Yıldız Technical University, Turkey); Filiz Günes (Yıldız Technical University, Turkey);*
- 17:20 Design of Metallic Cylindrical Waveguide Bandpass Filters Using Genetic Algorithm Optimization  
*Rawdha Thabet (University of Constantine, Algeria); Mohamed Lahdi Riabi (University of Constantine, Algeria);*
- 17:40 General Design of Compact T-shaped Line Filter with Ultra-wide Stopband  
*Yizhi Zhu (Institute of Electronics, Chinese Academy of Sciences, China); Xiaojuan Zhang (Institute of Electronics, Chinese Academy of Sciences, China); Guangyou Fang (Institute of Electronics, Chinese Academy of Sciences, China);*
- 18:00 Design and Characterization of a 34 GHz IMPATT Oscillator Using Novel Coaxial-waveguide Cavity  
*Subal Kar (University of Calcutta, India);*

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**Session 5AP**

**Poster Session 3**

**Friday AM–PM, August 21, 2009**

**9:00 AM - 4:00 PM**

**Room I**

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- 1 Experimental Study on Super-resolution Techniques for High-speed UWB Radar Imaging of Human Bodies  
*Takuya Sakamoto (Kyoto University, Japan); H. Taki (Kyoto University, Japan); T. Sato (Kyoto University, Japan);*
- 2 Novel Mathematical Model for the Analysis of Flat Substrate Imperfections  
*Alexandr V. Baryshev (Moscow Lomonosov State University, Russia); Yuri A. Eremin (Moscow Lomonosov State University, Russia);*
- 3 Solution of Electromagnetic Wave Scattering Problems from Inhomogeneously Layered Bodies  
*Alexander G. Kyurkchan (Moscow Technical University of Communication and Informatics, Russia); Dmitrii B. Demin (Moscow Technical University of Communication and Informatics, Russia);*
- 4 A Scheme to Analyze Scattering from an Iris on an Infinite Waveguide Structure Using the Conjugate Gradient Method  
*Haifa Belhadj (National Engineering School of Tunis, Tunisia); Taoufik Aguilu (Ecole Nationale d'ingénieurs de Tunis, Tunisia);*

- 5 Interaction of Infrared Electromagnetic Pulses in Resonant Layered Structures with  $n$ -GaAs Semiconductor Film  
*Volodymyr V. Grimalsky (Autonomous University of State Morelos (UAEM), Mexico); Svetlana V. Koshevaya (Autonomous University of State Morelos (UAEM), Mexico); Jesus Escobedo-Alatorre (Autonomous University of State Morelos (UAEM), Mexico); Margarita Tecpoyotl-Torres (Autonomous University of State Morelos (UAEM), Mexico);*
- 6 Photo-induced Modification of Refractive Index in Compounds  $As_xS_{1-x}$   
*Aurelian Popescu (National Institute of R&D for Optoelectronics INOE-2000, Romania); D. Savastru (National Institute of R&D for Optoelectronics INOE-2000, Romania); S. Miclos (National Institute of R&D for Optoelectronics INOE-2000, Romania);*
- 7 Oxidation-reduction Cycle of Water — The Primary Source of Energy for Biophoton Emission  
*Vladimir L. Voeikov (Lomonosov Moscow State University, Russia);*
- 8 Phase Transition Determination Using Continuous and Pulsed Laser  
*F. M. Sánchez-Arévalo (Universidad Nacional Autónoma de México (UNAM), México); C. Aldama-Reyna (Departamento Académico de Física-Universidad Nacional de Trujillo, Perú); T. García-Fernández (Universidad Autónoma de la Ciudad de México (UACM), México); G. A. Lara-Rodríguez (Universidad Nacional Autónoma de México (UNAM), México); Mayo Villagran-Muniz (Universidad Nacional Autónoma de México (UNAM), Mexico);*
- 9 Nonreciprocal Effects in the Magnetoplasmonic Crystals  
*Vladimir I. Belotelov (A. M. Prokhorov General Physics Institute of RAS, Russia); D. A. Bykov (Image Processing Systems Institute RAS, Russia); L. L. Doskolovich (Image Processing Systems Institute RAS, Russia); A. N. Kalish (A. M. Prokhorov General Physics Institute of RAS, Russia); M. Vanwollegheem (Université Paris-Sud, France); A. K. Zvezdin (A. M. Prokhorov General Physics Institute of RAS, Russia);*
- 10 Temperature Dependence of Piezoelectric Potential Phonon Scattering Properties of ZnO Of the Quantum — Quasi Two Dimensional System under Two Directional Circularly Polarized Oscillating Fields  
*Joung-Young Sug (Kyungpook National University, Korea); Su Ho Lee (Kyungpook National University, Korea); Jun-Yong Choi (Kyungpook National University, Korea); Ji Ho Park (Kyungpook National University, Korea); Gi-Dong Oh (Research Institute of Myoung-Bo Electronic Company, South Korea); Geon Sa-Gong (Dong-A University, South Korea);*
- 11 Magnetic Field Dependence of Electron Phonon Scattering Properties of ZnS of the Quantum — Quasi Two Dimensional System  
*Joung-Young Sug (Kyungpook National University, Korea); Su Ho Lee (Kyungpook National University, Korea); Jun-Yong Choi (Kyungpook National University, Korea); Ji Ho Park (Kyungpook National University, Korea); Cheol-Hwan Kim (Ulsan University, South Korea); Geon Sa-Gong (Dong-A University, South Korea);*
- 12 Effect of the Hand-hold Position on the EM Interaction of Clamshell-type Handsets and a Human  
*Salah I. Yahya Al-Mously (Academy of Graduate Studies, Libya); Marai M. Abousetta (Al-Fateh University, Libya);*
- 13 Impact of Human Head with Different Originations on the Anticipated SAR in Tissue  
*Salah I. Yahya Al-Mously (Academy of Graduate Studies, Libya); Marai M. Abousetta (Al-Fateh University, Libya);*
- 14 Application of New Algorithms of Electrical Impedance Tomography in Biomedicine  
*Tomáš Kříž (Brno University of Technology, Czech Republic); Jarmila Dědková (Brno University of Technology, Czech Republic); Eva Gescheidtová (Brno University of Technology, Czech Republic);*
- 15 Using Electromagnetic Microwave Field in Treatment of Lumbar Pain  
*Liliia Rabenok (IMSS, Mexico); Noe Oroza Hernandez (IMSS, Mexico); Jesus Escobedo-Alatorre (Autonomous University of State Morelos (UAEM), Mexico);*
- 16 Real-time Measurement of Air Ion Spectrum Using Gerdien Tube with Segmented Inner Electrode  
*Zdeněk Roubal (University of Technology Brno, Czech Republic); Miloslav Steinbauer (University of Technology Brno, Czech Republic); Zoltán Szabó (University of Technology Brno, Czech Republic); Radek Kubásek (University of Technology Brno, Czech Republic);*

- 17 Interaction between a Triple Band Handset Antenna and Human Head by Applying Various Head Models  
*Danoosh Davoodi (Sadjad Institute of Higher Education, Iran); P. Saghatoleslami (Sadjad Institute of Higher Education, Iran); Mohammad Ali Ebrahimi-Ganjeh (Sadjad Institute of Higher Education, Iran);*
- 18 Use of Magnetic Resonance to Determine Radial Slices of Plants  
*Karel Bartušek (Institute of Scientific Instruments, Academy of Sciences of Czech Republic, Czech Republic); Eva Gescheidtová (Brno University of Technology, Czech Republic); Zdenek Dokoupil (Institute of Scientific Instruments, Academy of Sciences of the Czech Republic, Czech Republic);*
- 19 Distribution and Influence of Magnetic Field Applied in Magnetotherapy. Analysis of Selected Issues  
*Antoni Ciesła (AGH University of Science and Technology, Poland); Wojciech Kraszewski (AGH, University of Science and Technology, Poland); Przemysław Syrek (AGH, University of Science and Technology, Poland);*
- 20 Finite Size Effect on the Resonant Microwave Absorption of  $\text{Er}^{3+}$  Doped Ag Nanoparticles  
*J. M. Vargas (UNICAMP-Instituto de Física Gleb Wataghin, Brazil); W. Iwamoto (UNICAMP-Instituto de Física Gleb Wataghin, Brazil); L. M. Holanda, Jr. (UNICAMP-Instituto de Física Gleb Wataghin, Brazil); P. G. Pagliuso (UNICAMP, Brazil); Carlos Rettori (UNICAMP, Brazil); S. B. Oseroff (San Diego State University, USA);*
- 21 Damaging Effect of Electromagnetic Field on Tumour Cell Membrane by Scanning Electronic Microscopy and Scanning Tunneling Microscopy  
*Run-Guang Sun (Shaanxi Normal University, China); Hao Qi (Shaanxi Normal University, China); Jing Zhang (Shaanxi Normal University, China);*
- 22 Diagnostic Volume Phenomenon in Noninvasive Medical Spectrophotometry and a Simple Theoretical Definition of That  
*Dmitrii A. Rogatkin (Moscow Regional Research and Clinical Institute "MONIKI", Russia); L. G. Lapaeva (Moscow Regional Research and Clinical Institute "MONIKI", Russia); E. N. Petritskaya (Moscow Regional Research and Clinical Institute "MONIKI", Russia);*
- 23 The Use the Strong Magnetic Field to Biostimulation Pre-sowing Seed  
*Antoni Ciesła (AGH University of Science and Technology, Poland); Mikołaj Skowron (AGH University of Science and Technology, Poland);*
- 24 The Effect of Weak Low-frequency Magnetic Field in Combination with Collinear Constant Geomagnetic Field on the Activity of Peroxidase in Water Solutions  
*E. V. Yablokova (Institute of Cell Biophysics, Russian Academy of Sciences, Russia); Gleb V. Novikov (Institute of Cell Biophysics, Russian Academy of Sciences, Russia); V. V. Kwichkin (Institute of Cell Biophysics, Russian Academy of Sciences, Russia); Vadim V. Novikov (Institute of Cell Biophysics, Russian Academy of Sciences, Russia); Eugenii E. Fesenko (Institute of Cell Biophysics, Russian Academy of Sciences, Russia);*
- 25 Look at the Spark Cross Size Development in a Sliding Submicrosecond Discharge from the Theory of Ionization Wave Front Propagation  
*Konstantin K. Trusov (P. N. Lebedev Physical Institute of RAS, Russia);*
- 26 Modeling of Two-component Plasma Dynamics in Near-wall Region of Charged Probe with Coulomb Collisions  
*Irene A. Kudryavtseva (The Moscow Aviation Institute (State Technical University), Russia); Andrey V. Panteleyev (The Moscow Aviation Institute (State Technical University), Russia);*
- 27 Metamaterials with Tunable Negative Refractive Index Fabricated from Amorphous Ferromagnetic Microwires: Magnetostatic Interaction between Microwires  
*A. V. Ivanov (M. V. Lomonosov Moscow State University, Russia); A. N. Shalygin (M. V. Lomonosov Moscow State University, Russia); V. Yu. Galkin (R&P Vichel (High-frequency Systems), Russia); A. V. Vedyayev (M. V. Lomonosov Moscow State University, Russia); Konstantin N. Rozanov (Institute for Theoretical and Applied Electromagnetics RAS, Russia);*
- 28 Optical Response of a Multilayer System with Strongly Anisotropic Thin Films as Nonmagnetic Negative Phase Velocity Materials  
*Xóchitl Inés Saldaña Saldaña (Benemérita Universidad Autónoma de Puebla, México); Gregorio Hernández Cocoltzi (Universidad Autónoma de Puebla, Mexico);*
- 29 Ventilation Efficiency and Carbon Dioxide ( $\text{CO}_2$ ) Concentration  
*Malka N. Halgamuge (The University of Melbourne, Australia); T. K. Chan (The University of Melbourne, Australia); Priyan Mendis (The University of Melbourne, Australia);*

- 30 Consensual Modeling for Synthesis of the Microwave Transmission Lines  
*Nurhan Türker Tokan (Yildiz Technical University, Turkey); Filiz Günes (Yildiz Technical University, Turkey); Fikret Gurgen (Bogazici University, Turkey);*
- 31 A Knowledge-based Support Vector Synthesis of the Transmission Lines for Use in Microwave Integrated Circuits  
*Filiz Günes (Yildiz Technical University, Turkey); Nurhan Türker Tokan (Yildiz Technical University, Turkey); Fikret Gurgen (Bogazici University, Turkey);*
- 32 Design and Produce an  $E$ -plane Filter in Ka-band  
*A. Mirtaheri (K. N. Toosi University, Iran); Zahra Mehdipour (K. N. Toosi University, Iran);*
- 33 Broad Omnidirectional Band of Reflection from Fibonacci One-dimensional Photonic Crystals  
*N. V. Grushina (M. V. Lomonosov Moscow State University, Russia); Pavel Vasiljevich Korolenko (M. V. Lomonosov Moscow State University, Russia); A. Y. Mishin (M. V. Lomonosov Moscow State University, Russia); A. Zotov (M. V. Lomonosov Moscow State University, Russia);*
- 34 Charge Distribution in Lightning Leader Channels  
*Robert L. Gardner (6152 Manchester Park Circle, USA);*
- 35 Application of Graphical Processors in Signal Processing of MTI Systems  
*Mehdi Arezoomand Ershadi (Sharif University of Technology, Iran); Elham Karami Keshmarzi (Sharif University of Technology, Iran);*
- 36 Electromagnetic Interaction with Long Range Electron Transfer: A Key to Nonthermal Biological Effects?  
*Zvi Kirson (Ministry of Health, Israel);*
- 37 Solving Diffraction Problems with Junction Boundary Conditions by Boundary Deformation Method  
*Alexander G. Kyurkchan (Moscow Technical University of Communication and Informatics, Russia); Nadezhda I. Smirnova (Moscow Technical University of Communication and Informatics, Russia);*
- 38 Real Chaos: How to Arrange Plykin and Smale-Williams Attractors in Electronic Devices?  
*Sergey P. Kuznetsov (Institute of Radio-Engineering and Electronics of RAS, Russia);*
- 39 Secure Communication Schemes Based on Synchronization of Robust Chaos  
*A. Yu. Jalnine (Institute of Radio-Engineering and Electronics of RAS, Russia); Sergey P. Kuznetsov (Institute of Radio-Engineering and Electronics of RAS, Russia);*
- 40 Electronic System with Elements of Complex Analytical Dynamics  
*Sergey P. Kuznetsov (Institute of Radio-Engineering and Electronics of RAS, Russia); E. P. Seleznev (Saratov Branch Institute of Radio-Engineering and Electronics of RAS, Russia); T. S. Usakina (Saratov State University, Russia); O. B. Isaeva (Saratov Branch Institute of Radio-Engineering and Electronics of RAS, Russia);*
- 41 Effects of Convolutional Encoder Constraint Lengths on Bluetooth Performance over Different Channels  
*M. A. M. Mohamed El-Bendary (Helwan University, Egypt); A. E. Abu El-Azm (Faculty of Electronic Engineering, Egypt); N.A. El-Fishawy (Faculty of Electronic Engineering, Egypt); M. A. R. El-Tokhy (Helwan University, Egypt); F. E. Abd El-Samie (Faculty of Electronic Engineering, Egypt); F. Shawkil (Faculty of Electronic Engineering, Egypt);*
- 42 Can We Build an Adaptive Fractal Radio System?  
*A. A. Potapov (Institute of Radio Engineering and Electronics of Russian Academy of Sciences, Russia);*
- 43 Can Dynamical and Chemical Characterization of Human Breath Be Electrically Realized through the Same MEMS-based Device?  
*Zhongyu Hou (Shanghai Jiaotong University, China); Bingchu Cai (Shanghai Jiaotong University, China);*
- 44 Eddy Current Modeling in Composite Materials  
*Matteo Cacciola (University Mediterranea of Reggio Calabria, Italy); S. Calcagno (University Mediterranea of Reggio Calabria, Italy); G. Megali (University Mediterranea of Reggio Calabria, Italy); Diego Pellicano (University Mediterranea of Reggio Calabria, Italy); M. Versaci (University Mediterranea of Reggio Calabria, Italy); F. C. Morabito (University Mediterranea of Reggio Calabria, Italy);*
- 45 Effect of Surface Roughness on Determination of Tissue Optical Properties and Light Distribution in Intralipid  
*Chun-Ping Zhang (Nankai University, China); Meixiu Sun (Nankai University, China); Jian-Guo Tian (Nankai University, China); Gui-Ying Chen (South China Sea Institute of Oceanology, Chinese Academy of Sciences, China); Shengwen Qi (Dezhou University, China); Qing Ye (Nankai University, China); Jin Wang (Nankai University, China);*
- 46 Scattering of Dirac Particle at the Coulomb Scalar Potential and Vector Field in 3+1 Dimensions  
*Hadi Goudarzi (Urmia University, Iran); H. Sedghi (Urmia University, Iran);*

- 47 Asymptotically Strict Method in Problems of Diffraction on Cylinders  
*Oleg Stepanovich Labunko (Southern Russia Federal Okrug Radio Frequency Centre, Russia);*
- 48 The Use of Thin Layer Conditions for the Reconstruction of Objects Buried in a Layered Medium  
*Özğür Özdemir (Istanbul Technical University, Turkey); H. Haddar (INRIA Saclay Ile de France & CMAP, France); A. Yaka (Istanbul Technical University, Turkey);*
- 49 Immunomodulative Activity of Weak Microwaves is Effected by SAPK/JNK Signal Pathway  
*Olga V. Glushkova (Institute of Cell Biophysics, Russian Academy of Sciences, Russia); Elena Novoselova (Institute of Cell Biophysics, Russian Academy of Sciences, Russia); Maxim Khrenov (Institute of Cell Biophysics, Russian Academy of Sciences, Russia); Tatiana Novoselova (Institute of Cell Biophysics, Russian Academy of Sciences, Russia); Svetlana Parfenyuk (Institute of Cell Biophysics, Russian Academy of Sciences, Russia); Sergey Lunin (Institute of Cell Biophysics, Russian Academy of Sciences, Russia);*
- 50 The Dispersion Control of Optical Microstructured Fiber  
*A. G. Rozhnev (Saratov State University, Russia); Alexandr V. Sadovnikov (Saratov State University, Russia);*
- 51 Gas Temperature in Plasma of the Positive Column of Narrow Gas-discharge Tubes  
*Lidiya Mikhaylovskaya (I. I. Mechnikov National University, Ukraine); Alina Mykhaylovskaya (Ruhr-Universität Bochum, Germany);*
- 52 Simulation of Fractal Polariton-plasmon Density in the Metamaterial Layer  
*Olexandr Dolgy (Zaporizhzhya National Technical University, Ukraine); Kateryna Chernyakhovska (Zaporizhzhya National Technical University, Ukraine); Volodymyr M. Onufriyenko (Zaporizhzhya National Technical University, Ukraine);*
- 53 Fractal Characteristics of Radio Thermal Radiation of a Different Layer of Atmosphere in a Range of Millimeter Waves  
*V. A. German (Institute of Radio Engineering and Electronics of Russian Academy of Sciences, RAS, Russia); Alexander Alexeevich Potapov (Institute of Radio Engineering and Electronics of Russian Academy of Sciences, RAS, Russia); E. V. Sykhonin (Institute of Radio Engineering and Electronics of Russian Academy of Sciences, RAS, Russia);*
- 54 Christiansen Effect in the Small-particles-liquid Crystal System  
*Tahir D. Ibragimov (Institute of Physics of Azerbaijan National Academy of Sciences, Azerbaijan); G. M. Bayramov (Baku State University, Azerbaijan); A. R. Imamaliyev (Baku State University, Azerbaijan);*
- 55 Raman and Photoluminescence Spectra of Bioconjugated Core-shell CdSe/ZnS Quantum Dots  
*Tetyana V. Torchynska (ESFM-National Polytechnic Institute, Mexico); L. Shcherbina (V. Lashkarev Institute of Semiconductor Physics at NASU, Ukraine);*
- 56 Minimax Approach to Solving Some Inverse Problems in Acoustics and Electromagnetics  
*Yuri Podlipenko (Kiev National University, Ukraine);*
- 57 The Effects of Self Steepening and Intrapulse Raman Scattering on Frequency Spectrum of Dark Soliton Switching  
*Fatemeh Kargar (Payam-Noor University, Iran); Mohsen Hatami (Yazd University, Iran); P. Elahi (Shiraz University of Technology, Iran);*
- 58 Effects of the Air Hole Positions on Transmission Spectrum of a Silicon Micro-Cavity Photonic Crystal Filter  
*Farzin Emami (Shiraz University of Technology, Iran); Ali Reza Kashavarz (Shiraz University of Technology, Iran); Habib Sarikhani-Khorami (Shiraz University of Technology, Iran);*
- 59 Simulation of Soliton Propagation in Photovoltaic Photorefractive Two-photon Materials and Study the Switching Behavior  
*Alireza Keshavarz (Shiraz University of Technology, Iran); Leila SadralSadati (University of Yazd, Iran); Mohsen Hatami (University of Yazd, Iran);*
- 60 Design of an All Optical Routing Self Switch by Using the Collision of the Spatial Solitons in a Non-Kerr Nonlinearity  
*Mohsen Hatami (Yazd University, Iran); Alireza Keshavarz (Shiraz University of Technology, Iran); Najmeh Dehkordi Balali (Payam-Noor University, Iran); Fatemeh Kargar (Payam-Noor University, Iran);*
- 61 DFB Laser Injection Locking on Brillouin Radiation in Optical Fiber  
*Vasily V. Spirin (CICESE, Mexico); Marcial Castro (CICESE, Mexico);*

- 62 Reflectance of a Deterministic Aperiodic Multilayer Structure with Positive and Negative Refractive Index Materials  
*D. A. Contreras-Solorio (Escuela de Física de la Universidad Autónoma de Zacatecas, México); X. I. Saldaña (Instituto de Física de la Benemérita Universidad Autónoma de Puebla, México); Isaac Rodríguez-Vargas (Escuela de Física de la Universidad Autónoma de Zacatecas, México); J. Madrigal-Melchor (Escuela de Física de la Universidad Autónoma de Zacatecas, México);*
- 63 Effective Permittivity of a Regular Structure of Conductive Films  
*Elizaveta V. Ivanova (Institute for Theoretical and Applied Electromagnetics, Russian Academy of Sciences, Russia); Marina Y. Koledintseva (Missouri University of Science and Technology, USA); Konstantin N. Rozanov (Institute for Theoretical and Applied Electromagnetics RAS, Russia);*
- 64 Analysis of the Charge on a Cylindrical Dielectric Particle in Unipolar Corona Field  
*G. T. Alisoy (University of Inonu, Turkey); H. Z. Alisoy (University of Inonu, Turkey);*
- 65 Field Charging Process of the Poly-disperse Aerosol Particles by Considering Concentration  
*H. Z. Alisoy (University of Inonu, Turkey); M. Köseoğlu (University of Inonu, Turkey); G. H. Alisoy (University of Inonu, Turkey);*
- 66 Performance Enhancement of Circularly Polarized Microstrip Antenna Using Electromagnetic Band Gap Structures  
*Muhammad Mahfuzul Alam (Khulna University of Engineering and Technology (KUET), Bangladesh); Md. Mustafizur Rahman Sonchoy (Khulna University of Engineering and Technology (KUET), Bangladesh); Md. Osman Goni (Khulna University of Engineering and Technology (KUET), Bangladesh);*
- 67 Electronic System with Hyperbolic Chaotic Attractor of the Smale-Williams Type  
*Sergey P. Kuznetsov (Institute of Radio-Engineering and Electronics of RAS, Russia); V. I. Ponomarenko (Saratov Branch Institute of Radio-Engineering and Electronics of RAS, Russia); E. P. Seleznev (Saratov Branch Institute of Radio-Engineering and Electronics of RAS, Russia);*
- 68 Analysis of the Effects of GSM Bands to the Electromagnetic Pollution in the RF Spectrum and Mapping of Pollution  
*Özgür Genc (Selcuk University, Turkey); Mehmet Bayrak (Selcuk University, Turkey);*
- 69 The Improved Ionospheric Model for Wireless Communication  
*Olga A. Maltseva (Rostov State University, Russia);*
- 70 Computer Calculation of the Microwave Analog Signal Processing Devices Parameters Using Magneto-static Waves Propagating in Nonuniform Magnetized Ferrite Films  
*V. I. Shcheglov (Institute of Radioengineering and Electronics, Russian Academy of Sciences, Russia); V. I. Zubkov (Institute of Radioengineering and Electronics, Russian Academy of Sciences, Russia);*
- 71 Spatial Diagram of Microwave Radiation Arised from Noncollinear Magnetostatic Waves Propagation along the Nonuniform Magnetized Ferrite Films  
*V. I. Shcheglov (Institute of Radioengineering and Electronics, Russian Academy of Sciences, Russia); V. I. Zubkov (Institute of Radioengineering and Electronics, Russian Academy of Sciences, Russia);*
- 72 Magnetic Susceptibility of Composite Medium Consisted of Uniaxial Ferrite Particles Embedded in Non-magnetic Insulating Matrix  
*V. I. Shcheglov (Institute of Radioengineering and Electronics, Russian Academy of Sciences, Russia); V. I. Zubkov (Institute of Radioengineering and Electronics, Russian Academy of Sciences, Russia);*
- 73 Adaptive Background Noise Suppression Method Applied in Microwave-Induced Thermo-Acoustic Tomography Imaging Post-processing  
*Wei Gong (University of Electronic Science and Technology of China, China); Guoping Chen (University of Electronic Science and Technology of China, China); Zhiqin Zhao (University of Electronic Science and Technology of China, China); Zai-Ping Nie (University of Electronic Science and Technology of China, China); Q. H. Liu (Duke University, USA);*
- 74 Design and Performance Analysis of Microstrip Array Antenna  
*Muhammad Mahfuzul Alam (Khulna University of Engineering and Technology (KUET), Bangladesh); Md. Mustafizur Rahman Sonchoy (Khulna University of Engineering and Technology (KUET), Bangladesh); Md. Osman Goni (Khulna University of Engineering and Technology (KUET), Bangladesh);*
- 75 A Special Use of Wavelet Transform for Detecting the Live after Earthquake with Radar Waves  
*N. Uzunoglu (National Technical University of Athens, Greece); Seyed Javad Javadi Moghaddam (University of Zabol, Iran);*

- 76 The Analysis of Secondary Arc Spectrum Characteristics on Transmission Lines  
*Xin Lin (Shenyang University of Technology, China); Bai-Na He (Shenyang University of Technology, China); Jian-Yuan Xu (Shenyang University of Technology, China);*
- 77 Research on the Mathematical Model of Secondary arc in Ultra-high Voltage Transmission System  
*Xin Lin (Shenyang University of Technology, China); Xuebin Li (Shenyang University of Technology, China); Jianyuan Xu (Shenyang University of Technology, China); Baina He (Shenyang University of Technology, China);*
- 78 Research on the Mathematical Model of Secondary Arc in UHV Transmission System  
*Xin Lin (Shenyang University of Technology, China); Xuebin Li (Shenyang University of Technology, China); Jianyuan Xu (Shenyang University of Technology, China); Baina He (Shenyang University of Technology, China);*

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**Session 5A1a**  
**Electromagnetic Waves and Media**

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**Friday AM, August 21, 2009**

**Room A**

Chaired by Masatoshi Sano

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- 08:40 New Analytical Method for Diffraction Grating Calculation  
*A. A. Shcherbakov (Moscow Institute of Physics and Technology, Russia); Alexandre V. Tishchenko (University Jean Monnet, France);*
- 09:00 Simulation of Transmission Characteristics in Columnar of Different Radius Using Magnetic/Metal Materials  
*Keiko Masuda (Tokyo University of Science, Japan); Masatoshi Sano (Tokyo University of Science, Japan);*
- 09:20 A New Method for Deriving the Time-dependent Dyadic Green's Functions in Conductive Anisotropic Media  
*Valery G. Yakhno (Dokuz Eylul University of Turkey, Turkey);*
- 09:40 About the Langmuir Waves Absorption in Plasma. Landau Damping and the Collisions Role  
*Valerii Fedorovich Tuganov (Space Research Institute of RAS, Russia);*

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**Session 5A1b**

**Advances in Communication and Imaging in Complex Environment**

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**Friday AM, August 21, 2009**

**Room A**

Organized by Rachid Talhi

Chaired by Rachid Talhi

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- 10:00 Performance Analysis of HF-wave Propagating through Simplified Ionospheric Model  
*Rachid Talhi (CNRS (National Center for Scientific Research), UMR, France); A. Lebrere (CNRS (National Center for Scientific Research), France); Cédric Blanchard (University of Granada, Spain);*
- 10:20 **Coffee Break**
- 10:40 Reservation Based Call Admission Control in Wireless Systems  
*Ashish Sharma (Maharaja Agrasen Institute of Technology, India); Malay Ranjan Tripathy (Jind Institute of Engineering and Technology, India);*
- 11:00 3D Discrete Wavelet Transform VLSI Architecture for Image Processing  
*Kapil Sachdeva (Jind Institute of Engineering and Technology, India); Malay Ranjan Tripathy (Jind Institute of Engineering and Technology, India);*
- 11:20 Design of Novel Tunable Phase Shifter  
*Sharif Iqbal Mitu Sheikh (King Fahd University of Petroleum & Minerals (KFUPM), Saudi Arabia); M. Basorrah (King Fahd University of Petroleum & Minerals (KFUPM), Saudi Arabia); G. Alhulwah (King Fahd University of Petroleum & Minerals (KFUPM), Saudi Arabia); K. Alanizi (King Fahd University of Petroleum & Minerals (KFUPM), Saudi Arabia); M. Alfarsi (King Fahd University of Petroleum & Minerals (KFUPM), Saudi Arabia);*
- 11:40 Intelligent Wireless Communication Enabled Sensor Network for Event  
*O. P. Yadav (Jind Institute of Engineering and Technology (JIET), India); Malay Ranjan Tripathy (Jind Institute of Engineering and Technology (JIET), India);*
- 12:00 Modeling of Dispersive Cloaks with the TLM Method  
*Cédric Blanchard (University of Granada, Spain); Jorge Andrés Portí (University of Granada, Spain); Juan Antonio Morente (University of Granada, Spain); Alfonso Salinas (University of Granada, Spain); Rachid Talhi (CNRS (National Center for Scientific Research), UMR, France);*



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**Session 5A2****THz, Photonic Crystals, Nanophotonics and Plasmonics**

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**Friday AM, August 21, 2009****Room B**Chaired by Arkadii A. Krokhin, Valery L. Kuznetsov

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- 08:40 Fringing Field Impact on Resonant Frequency in THz Plasma Wave Devices  
*Irina Khmyrova (University of Aizu, Japan);*
- 09:00 Single-photon Detectors for the Visible and Infrared Parts of the Spectrum Based on NbN Nanostructures  
*K. V. Smirnov (Moscow State Pedagogical University, Russia); Yu. B. Vakhtomin (Moscow State Pedagogical University, Russia); A. V. Divochiy (Moscow State Pedagogical University, Russia); R. V. Ozhegov (Moscow State Pedagogical University, Russia); I. V. Pentin (Moscow State Pedagogical University, Russia); E. V. Slivinskaya (SCONTEL, Russia); M. A. Tarkhov (Moscow State Pedagogical University, Russia); G. N. Gol'tsman (Moscow State Pedagogical University, Russia);*
- 09:20 Absolute Power Measurement of Single THz Pulses Generated by Ultrashort Laser Pulses on Top of Gold Layered Nano Gratings  
*G. Zieger (Institute of Photonic Technology, Germany); F. Garwe (Institute of Photonic Technology, Germany); T. May (Institute of Photonic Technology, Germany); U. Hübner (Institute of Photonic Technology, Germany); E. Kessler (Institute of Photonic Technology, Germany); M. Zeissberger (Institute of Photonic Technology, Germany); K. Wynne (University of Strathclyde, UK); W. Paa (Institute of Photonic Technology, Germany); H.-G. Meyer (Institute of Photonic Technology, Germany);*
- 09:40 Ultrafast Superconducting Bolometer Receivers for Terahertz Applications  
*R. V. Ozhegov (Moscow State Pedagogical University, Russia); A. V. Smirnov (Moscow State Pedagogical University, Russia); Yu. B. Vakhtomin (Moscow State Pedagogical University, Russia); K. V. Smirnov (Moscow State Pedagogical University, Russia); A. V. Divochiy (Moscow State Pedagogical University, Russia); G. Goltsman (Moscow State Pedagogical University, Russia);*
- 10:00 Effective Refractive Index Approximation and Surface Plasmon Resonance Modes of Metal Nanoparticle Chains and Arrays  
*Ergun Simsek (Bahcesehir University, Turkey);*

**10:20 Coffee Break**

- 10:40 An All Optical Switch Based on Nonlinear Photonic Crystal Microcavities  
*Najmeh Nozhat (K. N. Toosi University of Technology, Iran); Azadeh Taher Rahmati (K. N. Toosi University of Technology, Iran); Nosrat Granpayeh (K. N. Toosi University of Technology, Iran);*
- 11:00 Homogenization of Dissipative Photonic Crystals  
*Lyudmila Gumen (Universidad Popular Autonoma del Estado de Puebla, Mexico); Jesus Arriaga (Universidad Autonoma de Puebla, Mexico); Arkadii A. Krokhin (University of North Texas, USA);*
- 11:20 Invariant Embedding Method in the Problem of 3D Photonic Crystal Modeling  
*Valery L. Kuznetsov (Moscow State Technical University of Civil Aviation (MSTUCA), Russia); A. S. Rudkovskiy (Moscow State Technical University of Civil Aviation (MSTUCA), Russia);*
- 11:40 Switching Control of Spontaneous Emission by Polarized Atoms in Two-dimensional Photonic Crystals  
*Xue-Hua Wang (Sun Yat-Sen University, China);*
- 12:00 The Optics of the Metal-Oxide Nanostructures: Direct and Inverse Problems  
*Alphiya Khairullina (B. I. Stepanov Institute of Physics, NASB, Belarus);*

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**Session 5A3****Photonics — Theory and Applications**

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**Friday AM, August 21, 2009****Room C**

Organized by Anthony H. J. Fleming

Chaired by Anthony H. J. Fleming

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- 08:40 Simulation of an Ultrashort 2D Photonic Crystal Switch Based on Nonlinear Directional Coupler  
*Azadeh Taher Rahmati (K. N. Toosi University of Technology, Iran); Nosrat Granpayeh (K. N. Toosi University of Technology, Iran);*
- 09:00 XPM-based 2R-wavelength Conversion with UL-SOA and Abrupt-band Optical Filtering  
*Cristiano de Mello Gallep (State University of Campinas, Brazil); Napoleão S. Ribeiro (State University of Campinas, Brazil); Evandro Conforti (State University of Campinas, Brazil);*

- 09:20 Electromagnetic Properties of Complex Metamaterials: from Near Field Imaging with Super Resolution to Mimicking Celestial Phenomenon in the Lab  
*Dentcho A. Genov (Louisiana Tech. University, USA);*
- 09:40 Estimation of PMD Impairment in Optical Networks with Weakly Inhomogenous Single Mode Fibers  
*Abhijit S. Chitambar (University of New Hampshire, USA); Kondagunta U. Sivaprasad (University of New Hampshire, USA); Charles H. Bianchi (University of New Hampshire, USA);*
- 10:00 Processing Time of Photon Generation  
*Tibor Bercei (Budapest University of Technology and Economics, Hungary);*
- 10:20 **Coffee Break**
- 10:40 Bit Error Rates for Focused General-type Beams  
*Serap Altay Arpali (Çankaya University, Turkey); Yahya Kemal Baykal (Cankaya University, Turkey);*
- 11:00 Analytic Estimate for the Mass of the Photon  
*A. H. J. Fleming (Biophotonics Research Institute, Australia);*
- 11:20 Resonances with the Vanishing Width and Non-linear Effects in Photonic Structures  
*Remy F. Ndagali (University of Florida, USA); Sergei V. Shabanov (University of Florida, USA);*
- 11:40 Fundamental Modes of Electro-Magnetic Field in Free Space  
*Changjun Liao (South China Normal University, China); Changqi He (South China Normal University, China);*
- 12:00 Propagation of Electromagnetic Excitation in Imperfect Quasi-two-dimensional Si/SiO<sub>2</sub> Photonic 1D-crystal  
*V. V. Rumyantsev (A. A. Galkin Donetsk Institute for Physics and Engineering, National Academy of Sciences, Ukraine); S. A. Fedorov (Galkin Donetsk Institute for Physics and Engineering, National Academy of Sciences, Ukraine); E. Ya. Shtaerman (Galkin Donetsk Institute for Physics and Engineering, National Academy of Sciences, Ukraine);*

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**Session 5A4**  
**Electromagnetic Theory of Plasmas, Nonlinear and Chiral Media**

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**Friday AM, August 21, 2009**

**Room D**

Organized by Nikolay S. Erokhin

Chaired by Nikolay S. Erokhin

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- 08:40 Optical Absorption Enhancement by Metal Nanoparticles  
*Greg Sun (University of Massachusetts Boston, USA); Jacob B. Khurgin (Johns Hopkins University, USA);*
- 09:00 Field-aligned Currents in Io's Plasma Wake  
*Chuxin Chen (University of Science and Technology of China, China);*
- 09:20 Ionization-induced Dynamics of Laser-matter Interaction in a Tightly Focused Laser Pulse  
*E. S. Efimenko (Institute of Applied Physics, Russian Academy of Sciences, Russia); A. V. Kim (Institute of Applied Physics, Russian Academy of Sciences, Russia);*
- 09:40 Excitation and Propagation of Whistler Waves in a Magnetoplasma Containing Density and Magnetic-field Nonuniformities  
*P. V. Bakharev (University of Nizhny Novgorod, Russia); Alexander V. Kudrin (University of Nizhny Novgorod, Russia); T. M. Zaboronkova (Technical University of Nizhny Novgorod, Russia);*
- 10:00 Resonant Transmission through Dense Plasmas via Amplification of Evanescent Mode  
*N. Sternberg (Clark University, USA); Andrei I. Smolyakov (University of Saskatchewan, Canada);*
- 10:20 **Coffee Break**
- 10:40 Analysis and Design of the Antenna Cover on the Electromagnetic Wave Logging Sonde  
*Li Hao (Tsinghua University, China); Yuan Zhao (Tsinghua University, China); Yueqin Dun (Tsinghua University, China); Jiansheng Yuan (Tsinghua University, China); Wei Zong (North China Electric Power University, China);*
- 11:00 Nonreflection Interactions of Electromagnetic Wave with Inhomogeneous Chiral Plasma Layers  
*Nikolay S. Erokhin (Space Research Institute of RAS, Russia); G. V. Gakh (Space Research Institute of RAS, Russia); A. B. Shvartsburg (Space Research Institute of RAS, Russia);*

- 11:20 Comparison of Uniform and Discontinuity Dielectric Profile in THz Radiation Field  
*Parviz Zobdeh (Islamic Azad University of Qom, Iran); S. Mahmoodi (Islamic Azad University of Qom, Iran); Dariush Sardari (Islamic Azad University, Iran);*
- 11:40 Using the High Intense Laser Interaction With Plasma for Generation of Clean Electron Beam  
*Parviz Zobdeh (Islamic Azad University of Qom, Iran); R. Sadighi-Bonabi (Sharif University of Technology, Iran);*
- 10:40 Fast Algorithms for Solving the Volume Integral Equations  
*Alexander B. Samokhin (Moscow State Institute of Radio Engineering, Electronics and Automatics, Russia);*
- 11:00 An Application of Multi-region FDTD with Plane-wave Time-domain Techniques  
*Jiun-Hwa Lin (National Taiwan Ocean University, Taiwan); Shih-Jia Ciou (National Taiwan Ocean University, Taiwan);*
- 11:20 Electric Current Behavior near Sharp Edges and Corners of Metallic Structures Analyzed with the EFIE and MFIE Comparison with Analytical Well Established Results  
*Thierry Gilles (Ecole Royale Militaire, Laboratoire d'Electromagnétisme Appliqué (LEMA), Belgium); Marc Piette (Royal Military Academy, Belgium); Christophe Craeye (Universite Catholique de Louvain, Belgium);*
- 11:40 Analysis of Current Propagation on Single Conductor Line Using Point Charges and Propagating Line Currents  
*Tatsuya Sokooshi (Kyoto University, Japan); Takashi Hisakado (Kyoto University, Japan); Umberto Paoletti (Kyoto University, Japan); Osami Wada (Kyoto University, Japan);*
- 12:00 Nonlinear Optics of Metal Nanoclusters in Dielectric Matrices  
*David F. Zaretsky (Kurchatov Institute, Russia);*

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**Session 5A5**  
**Computational Electromagnetics 2**

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**Friday AM, August 21, 2009**

**Room E**

Organized by Alexander B. Samokhin

Chaired by Alexander B. Samokhin

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- 08:40 Scattering by an Infinite Elliptic Metallic Cylinder Coated by a Circular Dielectric One  
*Grigorios P. Zouros (National Technical University of Athens, Greece); John A. Roumeliotis (National Technical University of Athens, Greece);*
- 09:00 High Performance Angular Resolution Algorithm for Radar Systems  
*Boris Lagovsky (Moscow State Institute of Radio Engineering and Automation (Technical University), Russia);*
- 09:20 Algorithm for the Determination of Targets Coordinates in Structure of the Multiple Target with the Increased Effective Resolution  
*Boris A. Lagovsky (Moscow State Institute of Radio Engineering and Automation (Technical University), Russia);*
- 09:40 Simulation of Scattered Fields from Rotating Cylinder in 2D: Under Illumination of TE and TM Gaussian Pulses  
*Mingtsu Ho (WuFeng Institute of Technology, Taiwan);*
- 10:00 An Efficient and Accurate MoM-based Method for the Analysis of Two Dimensional Dielectric Structures  
*Emine Pinar Karabulut (Koc University, Turkey); Ir-sadi M. Aksun (Koc University, Turkey);*
- 10:20 **Coffee Break**

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**Session 5A6**  
**Magnetic Microwave Smart Materials**

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**Friday AM, August 21, 2009**

**Room F**

Organized by Larissa V. Panina, Arcady P. Zhukov

Chaired by Arcady P. Zhukov

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- 08:40 Nanostructured Magnetic Microwires for Field-tunable Composites  
*Hua-Xin Peng (University of Bristol, University Walk, UK); N. Pankratov (University of Bristol, University Walk, UK); F. Qin (University of Bristol, University Walk, UK); Larissa V. Panina (University of Plymouth, UK); Arcady P. Zhukov (Universidad del Pais Vasco, Spain);*

- 09:00 Experimental Study of a Planar Inverted-F Antenna with a Magnetic Substrate  
*Antti O. Karilainen (TKK Helsinki University of Technology, Finland); P. Ikonen (Nokia Devices R&D, Finland); Constantin R. Simovski (TKK Helsinki University of Technology, Finland); Sergei A. Tretyakov (TKK Helsinki University of Technology, Finland); Andrey N. Lagarkov (Institute for Theoretical and Applied Electromagnetics, Russian Academy of Sciences, Russia); S. A. Maklakov (Institute for Theoretical and Applied Electromagnetics, Russian Academy of Sciences, Russia); Konstantin N. Rozanov (Institute for Theoretical and Applied Electromagnetics RAS, Russia); Sergey N. Starostenko (Institute for Theoretical and Applied Electromagnetics RAS, Russia);*
- 09:20 Pico-Tesla Sensitivity Amorphous Wire Magneto-Impedance Sensor and Its Application for Biomagnetic Measurement  
*Tsuyoshi Uchiyama (Nagoya University, Japan); Shinsuke Nakayama (Nagoya University, Japan);*
- 09:40 Ferromagnetic Microwires Composite Metamaterials with Tuneable Microwave Electromagnetic Parameters  
*Mihail Ipatov (Universidad del Pais Vasco, Spain); V. Zhukova (Universidad del Pais Vasco, Spain); Larissa V. Panina (University of Plymouth, UK); Arcady P. Zhukov (Universidad del Pais Vasco, Spain);*
- 10:00 Measurement of Tuneable Permeability and Permittivity of Microwires Composites at Microwave Frequency  
*Lie Liu (National University of Singapore, Singapore); Ling Bing Kong (National University of Singapore, Singapore); C. B. Tang (National University of Singapore, Singapore); Serguei Matitsine (National University of Singapore, Singapore);*
- 10:20 **Coffee Break**
- 10:40 Microwave Attenuators Based on Microwires Composites  
*Antonio Hernando (ADIF-CSIC-Universidad Complutense, Spain); A. Gorriti (ADIF-CSIC-Universidad Complutense, Spain); P. Marín (ADIF-CSIC-Universidad Complutense, Spain); D. Cortina (Micromag 2000, Spain);*
- 11:00 Composites with Ferromagnetic Wires for Remote Temperature Monitoring  
*Larissa V. Panina (University of Plymouth, UK); Arcady P. Zhukov (Universidad del Pais Vasco, Spain); M. Ipatov (Universidad del Pais Vasco, Spain); V. Zhukova (Universidad del Pais Vasco, Spain);*
- 11:20 Electromagnetic Wave Diffraction on Array of Complex-shaped Metal Elements Placed on Ferromagnetic Substrate  
*S. L. Prosvirnin (Institute of Radio Astronomy, Ukraine); Victor A. Dmitriev (Federal University of Para, Brazil);*
- 11:40 Microwave Screen with Magnetically Controlled Attenuation  
*Sergey N. Starostenko (Institute for Theoretical and Applied Electromagnetics RAS, Russia); Konstantin N. Rozanov (Institute for Theoretical and Applied Electromagnetics of the RAS, Russia);*
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- Session 5A7**  
**Nonlinear and Tunable Metamaterials**
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- Friday AM, August 21, 2009**  
**Room G**  
Organized by Maxim Gorkunov  
Chaired by Maxim Gorkunov
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- 08:40 Tunable Tunnelling in Epsilon-Near-Zero Channels  
*David A. Powell (Australian National University, Australia); Andrea Alù (University of Pennsylvania, USA); Brian Edwards (University of Pennsylvania, USA); Ashkan Vakil (University of Pennsylvania, USA); Yuri S. Kivshar (Australian National University, Australia); Nader Engheta (University of Pennsylvania, USA);*
- 09:00 Magnetic Antiresonance and Resonance of Ferrite-spinel Nanoparticles Embedded in Opal Matrix Package and Their Application in Microwave Devices  
*A. B. Rinkevich (Institute of Metal Physics Ural Division of Russian Academy of Sciences, Russia); D. V. Perov (Institute of Metal Physics Ural Division of Russian Academy of Sciences, Russia); V. V. Ustinov (Institute of Metal Physics Ural Division of Russian Academy of Sciences, Russia); M. I. Samoilovich (Central Research Technological Institute "TECHNO-MASH", Russia); S. M. Kleshcheva (Central Research Technological Institute "TECHNOMASH", Russia);*
- 09:20 Electromagnetic Wave Propagation in Waveguide with Thin Superconducting Film and Metamaterial Slab  
*Marija V. Golovkina (Povolzhskiy State University of Telecommunication and Informatics, Russia);*

- 09:40 Directly Tunable Metamaterials for Microwave Applications  
*Mikhail Lapine (University of Seville, Spain); Ilya V. Shadrivov (Australian National University, Australia); David A. Powell (Australian National University, Australia); M. V. Gorkunov (Institute of Crystallography, Russian Academy of Sciences, Russia); Ricardo Marques (University of Seville, Spain); Yuri S. Kivshar (Australian National University, Australia);*
- 10:00 Achieving Tunability by Combining Metamaterials with Liquid Crystals  
*M. V. Gorkunov (Institute of Crystallography, Russian Academy of Sciences, Russia); M. A. Osipov (University of Strathclyde, United Kingdom);*
- 10:20 **Coffee Break**
- 10:40 Controllable Light Transmission through Perforated Metal Films of Periodic and Quasi-periodic Geometries  
*Alexander Minovich (RSPE, ANU, Australia); D. Liu (RSPE, ANU, Australia); H. Hattori (ANU, Australia); Ian McKerracher (The Australian National University, Australia); H. Hoe Tan (The Australian National University, Australia); D. N. Neshev (ANU, Australia); C. Jagadish (ANU, Australia); Yuri S. Kivshar (Australian National University, Australia);*
- 11:00 Nonlinear Coupling of Contra-propagating Electromagnetic Waves in Left-handed Nanocomposites  
*Alexander K. Popov (University of Wisconsin-Stevens Point, USA); S. A. Myslivets (Siberian Federal University and Institute of Physics of Russian Academy of Sciences, Russian Federation); Vladimir M. Shalaev (Purdue University, USA);*
- 11:20 Metamaterial-based Tunable Phase Modulator  
*Iftekhar O. Mirza (University of Delaware, USA); Shouyuan Shi (University of Delaware, USA); Dennis W. Prather (University Of Delaware, USA);*
- 11:40 Two-dimensional Nonlinear Pulses and Solitons in Metamaterial Waveguides  
*Allan Dawson Boardman (The University of Salford, UK); R. C. Mitchell-Thomas (University of Salford, UK); Yu. G. Rapoport (University of Salford, UK);*

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**Session 5A8**  
**Microwave and Millimeter-wave Devices and Circuits with CAD 2**

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**Friday AM, August 21, 2009**

**Room H**

Organized by Subal Kar

Chaired by Subal Kar

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- 08:40 Broadband Integration and Packaging for W-band Operations  
*Rownak Shireen (University of Delaware, USA); Shouyuan Shi (University of Delaware, USA); Peng Yao (University of Delaware, USA); Dennis W. Prather (University of Delaware, USA);*
- 09:00 Passive Microwave Mobile System for Atmospheric Boundary Layer Temperature Profilers and Total Water Vapour Content  
*Evgeny N. Kadygrov (Central Aerological Observatory, Russia); V. V. Folomeyev (Central Aerological Observatory, Russian Federation); Evgeny A. Miller (Central Aerological Observatory, Russia); A. V. Troicky (Radiophysical Research Institute, Russian Federation); E. A. Vorobeva (Central Aerological Observatory, Russia);*
- 09:20 Distance Measurement by Means of a Groove Guide Oscillator  
*Thomas Franz Bechteler (Izmir University, Turkey); A. Sevinc Aydinlik Bechteler (Izmir Institute of Technology, Turkey);*
- 09:40 Microwave and Millimeter Wave EBG Waveguide Circuits  
*Sergey E. Bankov (Institute of Radio Engineering and Electronics of Russian Academy of Science, Russia);*
- 10:00 Phased-array Antenna Ferroelectric Phase Shifter for a Higher Microwave Power Level  
*Orest G. Vendik (St. Petersburg ETU, Russia); A. N. Vasiliev (St. Petersburg ETU, Russia); M. D. Parnes (Resonance Ltd., Russia); A. E. Nikitenko (Resonance Ltd., Russia); R. G. Shifman (Svetlana-EP, Russia);*
- 10:20 **Coffee Break**
- 10:40 Wideband Waveguide Iris Filter Design with a Novel Synthesis Procedure  
*Qingfeng Zhang (Nanyang Technological University, Singapore); Yilong Lu (Nanyang Technological University, Singapore);*

- 11:00 Optimum Design of Low Pass Filters for General LC Network Configurations by the Method of Least Squares  
*Homayoon Oraizi (Iran University of Science and Technology, Iran); Mehdi Seyyed Esfahlan (Iran University of Science and Technology, Iran);*
- 11:20 An Analytical Treatment of High-frequency Impedance Extraction for Interconnects and Inductors in the Presence of a Multi-layer Substrate  
*Roberto Suaya (University of California, USA); Navin Srivastava (University of California, USA); Kaustav Banerjee (University of California, USA);*
- 11:40 Carbon Nanomaterials for Next-generation Interconnects and Passives: Physics, Status and Prospects  
*Kaustav Banerjee (University of California, USA); Hong Li (University of California, USA); Navin Srivastava (University of California, USA); Chuan Xu (University of California, USA);*

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**Session 5P1**
**Scattering and Rough Surface Scattering**


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**Friday PM, August 21, 2009**
**Room A**

 Chaired by Pyotr Yakovlevich Ufimtsev, Olivier Merchiers
 

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- 13:40 3-dimensional Microwave Scattering Measurements on a Complex Aggregate with Fully Known Properties  
*Olivier Merchiers (CETHIL — Centre de Thermique de Lyon, France); J. M. Geffrin (Aix-Marseille Universites, France); R. Vaillon (Universite de Lyon, France); Pierre Sabouroux (Aix-Marseille Universite, France); B. Lacroix (Universite de Lyon, France);*
- 14:00 Detection of Three Dimensional Objects Buried in a Half-space by the Use of Surface Impedance  
*Egemen Bilgin (Istanbul Technical University, Turkey); Ali Yapar (Istanbul Technical University, Turkey);*
- 14:20 Polarization Coupling in the PO and PTD Approximations  
*Pyotr Yakovlevich Ufimtsev (EM Consulting, USA);*
- 14:40 New Form of the Classical Physical Optics Approximation  
*Pyotr Yakovlevich Ufimtsev (EM Consulting, USA);*
- 15:00 Evaluation of Reduced Single and Coupled Integral Equations for Scattering by Layered Media  
*Ioan R. Ciric (University of Manitoba, Canada);*

**15:20 Coffee Break**

- 15:40 Scattering of TM Plane Waves from a Binary Periodic Random Surface  
*Kazuhiro Hattori (Mayekawa MFG. Co., Ltd., Japan); Junichi Nakayama (Kyoto Institute of Technology, Japan); Yasuhiko Tamura (Kyoto Institute of Technology, Japan);*
- 16:00 Design of High Symmetry Microwave Frequency Selective Surfaces with Trapped-mode Resonance  
*M. N. Kawakatsu (Federal University of Para, Brasil); Victor A. Dmitriev (Federal University of Para, Brazil); S. L. Prosvirnin (Institute of Radio Astronomy, Ukraine);*
- 16:20 A New Hybrid Numerical Method for the Scattering by a Plate above a Rough Surface  
*Gildas Kubicke (Universite de Nantes, France); Christophe Bourlier (Universite de Nantes, France); Joseph Saillard (Université de Nantes, France);*
- 16:40 Scattering by an Object above a Dielectric Rough Surface with the Extended-PILE Method Combined with BMIA/CAG  
*Gildas Kubicke (Universite de Nantes, France); Christophe Bourlier (Universite de Nantes, France); Joseph Saillard (Université de Nantes, France);*
- 17:00 A Research Overview on Numerical Simulation of Composite Scattering from the Object and Randomly Rough Surface in Fudan WSRSI  
*Ya-Qiu Jin (Fudan University, China);*
- 17:20 A Research Overview on Polarimetric Scattering and Information Retrieval from SAR Imagery in Fudan WSRSI  
*Ya-Qiu Jin (Fudan University, China);*

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**Session 5P2**
**Optics and Photonics**


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**Friday PM, August 21, 2009**
**Room B**

 Chaired by Toshiyuki Shiozawa, Yewen Zhang
 

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- 13:40 Design of Very High Birefringence and Flat Near-zero Dispersion Photonic Crystal Fibers  
*Daniilo Henrique Spadoti (University of Sao Paulo, Brazil); Ben-Hur Viana Borges (University of São Paulo, Brazil); Murilo Araujo Romero (University of São Paulo, Brazil);*

- 14:00 Electric Field Measurement from Tremendously Low Frequency to DC Based on Electro-optic Integrated Sensors  
*Huan Li (Tsinghua University, China); Rong Zeng (Tsinghua University, China); Bo Wang (Tsinghua University, China);*
- 14:20 Ultraviolet (UV) and X-ray Free-electron Lasers — Tutorial Review  
*Toshiyuki Shiozawa (Chubu University, Japan);*
- 14:40 Bistability of Nonlinear Photonic Crystal Microring Resonators  
*Tahereh Ahmadi Tameh (K. N. Toosi University of Technology, Iran); Babak Memarzadeh Isfahani (K. N. Toosi University of Technology, Iran); Nosrat Granpayeh (K. N. Toosi University of Technology, Iran); Alireza R. Maleki Javan (K. N. Toosi University of Technology, Iran);*
- 15:00 Time-domain Experimental Investigation of One-dimension Photonic Crystal Based on Microstrip  
*Shougang Liu (Tongji University, China); Ziyang Li (Tongji University, China); Yewen Zhang (Tongji University, China);*
- 15:20 **Coffee Break**
- 15:40 Development of Modified Optical Fiber Cable with Long Excess-length of Fiber  
*Yiqiang Wang (Heng Tong Group, China); Suming Li (Heng Tong Group, China);*
- 16:00 Modeling Quantum Cascade Lasers with Metal Gratings  
*Mathieu Carras (Alcatel Thales III-V Lab Route Départementale, France); Gregory Maisons (Alcatel Thales III-V Lab Route Départementale, France); Bouzid. Simozrag (Alcatel Thales III-V Lab Route Départementale, France); Michel Garcia (Alcatel Thales III-V Lab Route Départementale, France); Alfredo De Rossi (Thales Res & Technol, France); Xavier Marcadet (Thales Research and Technology Route Départementale, France);*
- 16:20 Effect of FWM Output Power Induced by Phase Modulation in Optical Fiber Communication  
*Li Wang (Beijing University of Technology, China); Wenzheng Ban (Beijing University of Technology, China); Yang Song (Beijing University of Technology, China); Jiangbo Chen (Beijing University of Technology, China); Xinping Zhang (Beijing University of Technology, China);*
- 16:40 Direct and Inverse Borrmann Effect in 1D Photonic Crystals  
*Alexander V. Dorofeenko (Institute for Theoretical and Applied Electromagnetics of the Russian Academy of Sciences, Russia); Alexey P. Vinogradov (Institute for Theoretical and Applied Electromagnetics of the Russian Academy of Sciences, Russia); Alexander M. Merzlikin (Institute for Theoretical and Applied Electromagnetics of the Russian Academy of Sciences, Russia); Alexander A. Lisiansky (The City University of New York, USA); Alexander B. Granovsky (Moscow State University, Russia); Yuriy E. Lozovik (Institute of Spectroscopy of the Russian Academy of Sciences, Russia);*
- 17:00 The Features of the Wideband Anisotropic Acousto-optic Interaction with Longitudinal Ultrasound in Lithium Niobate Crystal  
*Yuri A. Zyuryukin (Saratov State Technical University, Russia); Sergey V. Zavarin (Saratov State Technical University, Russia); Alexander N. Yulaev (Saratov State Technical University, Russia);*
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- Session 5P3**  
**Magnetism, Magnetic Structures and Devices**
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- Friday PM, August 21, 2009**  
**Room C**  
Organized by Galina S. Makeeva, Martha Pardavi-Horvath  
Chaired by Ralf Meckenstock
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- 13:40 Waveguide with Multilayer Nanostructure  
*A. B. Rinkevich (Institute of Metal Physics Ural Division of Russian Academy of Sciences, Russia); L. N. Romashev (Institute of Metal Physics Ural Division of Russian Academy of Sciences, Russia); V. V. Ustinov (Institute of Metal Physics Ural Division of Russian Academy of Sciences, Russia); E. A. Kuznetsov (Nizniy Tagil State Socially-Pedagogical Academy, Russia);*
- 14:00 The Resonant Phenomena in Electromagnetic Wave Penetration through Thin Magnetic Films  
*D. V. Perov (Institute of Metal Physics Ural Division of Russian Academy of Sciences, Russia); A. B. Rinkevich (Institute of Metal Physics Ural Division of Russian Academy of Sciences, Russia); V. O. Vaskovsky (Ural State University, Russia);*
- 14:20 Magnetic Particles (Magnetons) — Structural Components of Atoms and Substance, Immediate Sources of Magnetic Fields  
*Robert Sizov (Individual Researcher, Russia);*

- 14:40 Electrodynamic Analysis of Nonlinear Propagation of Electromagnetic Waves in Gyromagnetic Nanostructured Media at Microwave Frequencies  
*Galina S. Makeeva (Penza State University, Russia); Martha Pardavi-Horvath (The George Washington University, USA); O. A. Golovanov (Penza State University, Russia);*
- 15:00 Size and Shape Effects in the Diffraction of Electromagnetic Waves on Magnetic Nanowire Arrays at Photonic Frequencies  
*Galina S. Makeeva (Penza State University, Russia); Martha Pardavi-Horvath (The George Washington University, USA); O. A. Golovanov (Penza State University, Russia);*
- 15:20 **Coffee Break**
- 15:40 Investigation of the Nonlinearity Thresholds of Magnetic Nanostructures by Computing the Bifurcation Points at Microwave Frequencies  
*Galina S. Makeeva (Penza State University, Russia); Martha Pardavi-Horvath (The George Washington University, USA); O. A. Golovanov (Penza State University, Russia);*
- 16:00 Progress in Thermal Near Field Detected Microwave Spectroscopy on Nano Structured 3d-metals  
*Ralf Meckenstock (University Duisburg-Essen, Germany); S. Stienen (University Duisburg-Essen, Germany); I. Barsukov (University Duisburg-Essen, Germany); C. Hassel (University Duisburg-Essen, Germany); N. Reckers (University Duisburg-Essen, Germany); J. Lindner (University Duisburg-Essen, Germany); M. Farle (University Duisburg-Essen, Germany);*
- 16:20 RF Emissions and Oscillation Modes in MgO Based Nanopillars  
*Gino Hrkac (University of Sheffield, UK); Alexander V. Goncharov (University of Sheffield, UK); Julian Dean (University of Sheffield, UK); Simon Bance (University of Sheffield, UK); Thomas Schrefl (University of Sheffield, UK);*
- 16:40 Controllable Dynamic Switching of the Chirality of a Spin Vortex in a Cylindrical Magnetic Nanodisk  
*Roman Antos (Charles University, Czech Republic); Yoshichika Otani (University of Tokyo, Japan);*
- 17:00 XOR and NAND Microwave Logic Gates Based on Ferrite Films  
*Alexey B. Ustinov (St. Petersburg Electrotechnical University, Russia); Boris A. Kalinikos (St. Petersburg State Electrotechnical University, Russia);*
- 17:20 The Microwave Study of Structure-dependent Properties of Thin Magnetic Films by Field-domain Resonance Technique  
*Sergey N. Starostenko (Institute for Theoretical and Applied Electromagnetics RAS, Russia); Konstantin N. Rozanov (Institute for Theoretical and Applied Electromagnetics RAS, Russia);*

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**Session 5P4**
**Integral Equations Method in Large Electromagnetic Problems**


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**Friday PM, August 21, 2009**
**Room D**

Organized by Yury G. Smirnov, Eugeny E. Tyrtyschnikov

Chaired by Yury G. Smirnov, Eugeny E. Tyrtyschnikov

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- 13:20 Method of Volume Singular Integral Equation for Determination of Permittivity of Dielectric Body in a Waveguide  
*Yury G. Smirnov (Penza State University, Russia);*
- 13:40 Collocation Method of Solving Volume Singular Integral Equation for Diffraction by Dielectric Body in Rectangular Waveguide  
*Yury G. Smirnov (Penza State University, Russia); Mikhail Medvedik (Penza State University, Russia); Ekaterina Derevyanchyk (Penza State University, Russia);*
- 14:00 Generalization of the Barnes-Hut Algorithm for the Helmholtz Equation in Three Dimensions  
*J. Aronsson (University of Manitoba, Canada); I. Jeffrey (University of Manitoba, Canada); Vladimir Okhmatovski (University of Manitoba, Canada);*
- 14:20 Tensor and Toeplitz Structures Applied to Direct and Inverse 3D Electromagnetic Problems  
*Sergei A. Goreinov (Institute of Numerical Mathematics, Russian Academy of Sciences, Russia); Dmitry V. Savostyanov (Institute of Numerical Mathematics, Russian Academy of Sciences, Russia); Eugeny E. Tyrtyschnikov (Institute of Numerical Mathematics, Russian Academy of Sciences, Russia);*



- 14:40 Fast Computation of Electromagnetic Fields in Structured 2.5D and 3D Problems  
*Sergei Goreinov (Institute of Numerical Mathematics, Russian Academy of Sciences, Russia); Stanislav Stavtsev (Institute of Numerical Mathematics, Russian Academy of Sciences, Russia); Eugeny E. Tyrtysnikov (Institute of Numerical Mathematics, Russian Academy of Sciences, Russia);*
- 15:00 Application of Mosaic-Skeleton Approximations for Solving EFIE  
*Stanislav L. Stavtsev (Institute of Numerical Mathematics, Russian Academy of Sciences, Russia); Eugeny E. Tyrtysnikov (Institute of Numerical Mathematics, Russian Academy of Sciences, Russia);*
- 15:20 **Coffee Break**
- 15:40 Subhierarchical Algorithm for Solving the Problem of Electromagnetic Diffraction by a Dielectric Body in Several Domains  
*Alexey Tsupak (Penza State University, Russia);*
- 16:00 Galerkin Method and Parallel Computational Algorithm for Solving Problems of Diffraction by Dielectric Bodies in Free Space  
*D. Mironov (Penza State University, Russia); Alexey Tsupak (Penza State University, Russia);*
- 16:20 Parallel Computational Algorithm for Solving Problems of Diffraction by Plane Screen  
*Mikhail Medvedik (Penza State University, Russia); Alexey Tsupak (Penza State University, Russia);*
- 16:40 Numerical Analysis of Scattering and Absorption Problems of Electromagnetic Waves of a Mobile Communication Range on Non-uniform Biological Structures  
*Sergey P. Kulikov (Moscow Institute of Radio Engineering, Electronics and Automation, Russia); Natalya Y. Voronina (Moscow Institute of Radio Engineering, Electronics and Automation, Russia);*
- 17:00 On Singular Integral Equations in the Class of Distributions and Their Application to Antennas Theory Issues  
*Aleksey Viktorovich Setukha (Air Force Academy, Russia); A. S. Nenashev (Air Force Academy, Russia);*
- 17:20 Integral Equations Approach to TM-Electromagnetic Waves Guided by a (Linear/Nonlinear) Dielectric Film with a Spatially Varying Permittivity  
*Valeriy S. Serov (University of Oulu, Finland); Kadriya A. Yuskaeva (University of Osnabrueck, Germany); Hans Werner Schürmann (University of Osnabrueck, Germany);*
- 17:40 A Predicting Methodology of Scattering by Clusters of Multi-Objects/Systems Based on Plane Wave Database  
*Xin-Qing Sheng (Beijing Institute of Technology, China); Xiao-Min Pan (Beijing Institute of Technology, China); Chu-Qiang Deng (Beijing Institute of Technology, China);*
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- Session 5P5**  
**Computational Electromagnetics 3**
- 
- Friday PM, August 21, 2009**  
**Room E**  
 Organized by Alexander B. Samokhin  
 Chaired by Alexander B. Samokhin
- 
- 13:40 3G Base Station Optimal Positioning for Heterogeneous Network with Fixed Sector and Adaptive Antennas  
*Lajos Nagy (Budapest University of Technology and Economics, Hungary); Andrea Farkasvolgyi (Budapest University of Technology and Economics, Hungary); Robert Dady (Budapest University of Technology and Economics, Hungary);*
- 14:00 Extension of Exact Evaluation of Retarded Time Potentials from 2D to 3D Source Distributions  
*Huseyin Arda Ulku (Gebze Institute of Technology, Turkey); Fatih Dikmen (Gebze Institute of Technology, Turkey); A. Arif Ergin (Gebze Institute of Technology, Turkey);*
- 14:20 Tuning Microstrip Patch Antennas on Ferrite Substrate Using Simple Ground Plane Structures  
*Mohammad A. Alsunaidi (King Fahd University of Petroleum and Minerals, Saudi Arabia);*
- 14:40 Regularization of Boundary Integral Equations in a Easy-to-Implement and Efficient Method  
*Erdal Korkmaz (Fatih University, Turkey);*
- 15:00 Matrix Method for Potential Field Solutions from Quaternion Space  
*Geert C. Dijkhuis (Convectron N. V., The Netherlands);*
- 15:20 **Coffee Break**
- 15:40 Computational Modeling of New Kinds of Fractal Antennas and Fractal Frequency-selective Structures Based on Them  
*Eugene Nikolaevich Matveev (Institute of Radio Engineering and Electronics of Russian Academy of Sciences, RAS, Russia); Alexander Alexeevich Potapov (Institute of Radio Engineering and Electronics of Russian Academy of Sciences, RAS, Russia);*

- 16:00 One Way of Preconditioner Building for Numerical Solution of Integral Equations in Electromagnetic Scattering  
*Ilya E. Fedotov (Moscow Institute of Radio Engineering, Electronics and Automatics, Russia);*
- 16:20 A General UPML FDTD ABC for Dispersive Media  
*Bing Wei (Xidian University, China); De-Biao Ge (Xidian University, China); Xiao-Yong Li (Xidian University, China); Fei Wang (Xidian University, China);*
- 16:40 SO-FDTD Applied to the Analysis of EM Scattering by Anisotropic Dispersive Medium  
*Fei Wang (Xidian University, China); De-Biao Ge (Xidian University, China); Bing Wei (Xidian University, China);*
- 14:40 Photo-counts in Germination Test with Wheat in Wastewater Sediment Applied in Ecotoxicology Experiments  
*Samuel R. Dos Santos (State University of Campinas, Brazil); Cristiano de Mello Gallep (State University of Campinas, Brazil);*
- 15:00 Study of *Daphnia Similis*'s Ultra-weak Light Emission When Exposed to Reference Substance  $K_2Cr_2O_7$   
*Daniella Cristina Batista (State University of Campinas, Brazil); Natally A. Siqueira (State University of Campinas, Brazil); Cristiano De Mello Gallep (State University of Campinas, Brazil);*
- 15:20 **Coffee Break**
- 15:40 *Daphnia Similis*' Ultra-weak Light Emission when Stressed by NaCl  
*Natally A. Siqueira (State University of Campinas, Brazil); Daniella Cristina Batista (State University of Campinas, Brazil); Cristiano De Mello Gallep (State University of Campinas, Brazil);*

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**Session 5P6**

**Biophotonics: Basis and Applications**

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**Friday PM, August 21, 2009**

**Room F**

Organized by Cristiano De Mello Gallep

Chaired by Cristiano De Mello Gallep

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- 13:40 Biophoton of Sprouts as Indicator of Seed Acclimatization  
*Cristiano de Mello Gallep (State University of Campinas, Brazil); Samuel R. Dos Santos (State University of Campinas, Brazil); Thiago Alexandre Moraes (State University of Campinas, Brazil);*
- 14:00 Day- and Month-like Rhythms of Biophoton Emission in Seedlings  
*Thiago Alexandre Moraes (State University of Campinas, Brazil); Rebeca Tombolato Garofalo (State University of Campinas, Brazil); Samili Ribeiro Ramos (State University of Campinas, Brazil); Luciana De Carvalho Martins (State University of Campinas, Brazil); Cristiano De Mello Gallep (State University of Campinas, Brazil);*
- 14:20 Biophoton Emission in Wheat Seedlings with Potassium Dichromate  
*Thiago Alexandre Moraes (State University of Campinas, Brazil); Rebeca Tombolato Garofalo (State University of Campinas, Brazil); Samili Ribeiro Ramos (State University of Campinas, Brazil); Luciana De Carvalho Martins (State University of Campinas, Brazil); Daniella Cristina Batista (State University of Campinas, Brazil); Cristiano De Mello Gallep (State University of Campinas, Brazil);*
- 16:00 Statistical Correlations and Localization-delocalization Transition in DNA Molecules  
*Arkadii A. Krokhin (University of North Texas, USA); V. M. K. Bagci (Research Center for Applied Sciences, Taiwan); Felix Izrailev (Universidad Autonoma de Puebla, Mexico); Oleg V. Usatenko (A. Ya. Usikov Institute for Radiophysics and Electronics, Ukrainian Academy of Science, Ukraine); V. A. Yampol'skii (A. Ya. Usikov Institute for Radiophysics and Electronics, Ukrainian Academy of Science, Ukraine);*
- 16:20 Bicarbonate Aqueous Solutions Activated with Hydrogen Peroxide — Long-term Sources of Low-level Photon Emission and Test Systems for the Effects of Ultra-weak Intensity Physical and Chemical Factors  
*Vladimir L. Voeikov (Lomonosov Moscow State University, Russia); Do Ming Ha (Lomonosov Moscow State University, Russia); O. G. Mukhitova (Lomonosov Moscow State University, Russia); N. D. Vilenskaya (Lomonosov Moscow State University, Russia); S. I. Malishenko (Lomonosov Moscow State University, Russia);*

- 16:40 A Verification of the Mitogenetic Effect on Yeast Culture  
*Ilya V. Volodyaev (M. V. Lomonosov Moscow State University, Russia); R. N. Ivanovsky (M. V. Lomonosov Moscow State University, Russia); A. S. Bogachuk (M. V. Lomonosov Moscow State University, Russia); N. D. Vilenskaya (Lomonosov Moscow State University, Russia); S. I. Malysenko (M. V. Lomonosov Moscow State University, Russia); K. N. Novikov (M. V. Lomonosov Moscow State University, Russia); Vladimir L. Voeikov (Lomonosov Moscow State University, Russia); L. V. Belousov (M. V. Lomonosov Moscow State University, Russia);*
- 17:00 Feasibility of Biological Cell as an Infrared Electromagnetic Resonator — Storage of the Infrared Biophotons?  
*Michal Cifra (Czech Technical University, Czech Republic); Jiri Pokorny (Institute of Photonics and Electronics, Academy of Sciences of the Czech Republic, Czech Republic);*
- 17:20 Photons Production and Communications in Biological Systems  
*Sergey N. Mayburov (Lebedev Institute of Physics, Russia); Ilya V. Volodyaev (M. V. Lomonosov Moscow State University, Russia);*
- 14:00 Voxel Model-based FGM Metal Part Manufacturing by Plasma Deposition  
*Bangyou Hu (Huazhong University of Science and Technology, China); Hai Ou Zhang (Huazhong University of Science and Technology, China); Ye Chen (Huazhong University of Science and Technology, China); Yan Huang (Huazhong University of Science and Technology, China); Chao Wang (Huazhong University of Science and Technology, China); Guilan Wang (Huazhong University of Science and Technology, China);*
- 14:20 Modeling of Transport Phenomenon in the Plasma Deposition Manufacturing Functionally Gradient Materials  
*Fanrong Kong (Huazhong University of Science and Technology, China); Hai Ou Zhang (Huazhong University of Science and Technology, China); Guilan Wang (Huazhong University of Science and Technology, China);*
- 14:40 Rapid Manufacturing of FGM Components by Using Electromagnetic Compressed Plasma Deposition  
*Haiping Zou (Huazhong University of Science and Technology, China); Haiou Zhang (Huazhong University of Science and Technology, China); Guilan Wang (Huazhong University of Science and Technology, China); Jian Li (Huazhong University of Science and Technology, China);*

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**Session 5P7**

**Electromagnetics and its Application in the Advanced Manufacturing Technology**

**Friday PM, August 21, 2009**

**Room G**

Organized by Haiou Zhang

Chaired by Haiou Zhang

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- 13:40 Computer Simulation of Electromagnetic Force Effect on Melting Pool in Layer-laminated Deposition Process  
*Hai Ou Zhang (Huazhong University of Science and Technology, China); Chao Wang (Huazhong University of Science and Technology, China); Guilan Wang (Huazhong University of Science and Technology, China);*
- 15:20 **Coffee Break**
- 15:40 Study on Offsetting Path Planning for Electromagnetic-compressed Plasma Deposition Manufacturing in Rapid Metal Tooling  
*Jiang Jiang (Huazhong University of Science and Technology, China); Haiou Zhang (Huazhong University of Science and Technology, China); Guilan Wang (Huazhong University of Science and Technology, China); Jian Li (Huazhong University of Science and Technology, China);*

- 16:00 Fabrication of Solid Oxide Fuel Cells with Powder/Suspension Plasma Spraying  
*Haiou Zhang (Huazhong University of Science and Technology, China); Daoman Rui (Huazhong University of Science and Technology, China); Kankan Zhang (Huazhong University of Science and Technology, China); Guilan Wang (Huazhong University of Science and Technology, China);*
- 16:20 The Digital Simulation System Development for the Electrical Machine  
*Zhongchao Wei (Huazhong University of Science and Technology, China); Xia Chen (Huazhong University of Science and Technology, China); Shuo Liu (Dongfang Electrical Company, China); Jian Li (Huazhong University of Science and Technology, China);*
- 16:40 Modeling and Design of Switched Reluctance Starter/Generator System  
*Jianbo Sun (Huazhong University of Science and Technology, China); Zhongchao Wei (Huazhong University of Science and Technology, China); Shuanghong Wang (Huazhong University of Science and Technology, China); Qionghua Zhan (Huazhong University of Science and Technology, China); Zhiyuan Ma (Huazhong University of Science and Technology, China);*
- 14:20 About 2D Multiple Scattering Problem by Lattice and Its Application for Constructing Metamaterial  
*Alexander P. Anyutin (Russian New University, Russia);*
- 14:40 About Scattering and 2D Coating Problems by Multilayer Metamaterial Structures  
*Alexander P. Anyutin (Russian New University, Russia);*
- 15:00 Caustic Singularities Arising at Propagation of Short Radiowaves in Anisotropic Ionospheric Plasma  
*Andrew S. Kryukovsky (Russian New University, Russia); D. S. Lukin (MIPT, Russia); D. V. Rastyagaev (MIPT, Russia);*
- 15:20 **Coffee Break**
- 15:40 Applying the Wave Catastrophe Theory to Solve of Problems of EM Waves Propagation, Diffraction and Focusing in Non-uniform Media  
*Andrew S. Kryukovsky (MIPT, Russia); D. S. Lukin (MIPT, Russia); D. V. Rastyagaev (MIPT, Russia);*
- 16:00 Research an Electromagnetic Field of Edge Waves as “Cusp” and “Butterfly” in the Shadow Region  
*Anna M. Balykina (Russian New University, Russia); A. S. Kryukovsky (Russian New University, Russia);*
- 16:20 The Application of Tikonov’s Regularization Method to Virtual Resonator Problem  
*Pavel V. Filonov (Moscow State Technical University of Civil Aviation, Russian Federation);*
- 16:40 The Behavior near Focal Points of Asymptotic Solutions to the Cauchy Problem for the Wave Equation with Localized Initial Perturbations  
*Sergey Yu. Dobrokhotoev (A. Ishlinski Institute for Problems in Mechanics of Russian Academy of Sciences, Russia); R. V. Nekrasov (A. Ishlinski Institute for Problems in Mechanics of Russian Academy of Sciences, Russia); S. Ya. Sekerzh-Zenkovich (A. Ishlinski Institute for Problems in Mechanics of Russian Academy of Sciences, Russia); A. I. Shafarevich (A. Ishlinski Institute for Problems in Mechanics of Russian Academy of Sciences, Russia);*

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**Session 5P8**
**Asymptotic Methods and Catastrophe Theory**
**Friday PM, August 21, 2009**
**Room H**

Organized by Andrew S. Kryukovsky, Dmitry S. Lukin

 Chaired by Andrew S. Kryukovsky
 

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- 13:40 On the Reflection Function Calculation Method in the Problem of Radiowave Propagation  
*I. I. Orlov (Institute of Solar-Terrestrial Physics SB RAS, Russia); Vladimir I. Kurkin (Institute of Solar-Terrestrial Physics SB RAS, Russia); Alexey V. Oinats (Institute of Solar-Terrestrial Physics SB RAS, Russia);*
- 14:00 About Strict and Asymptotic Solutions for Focusing of Cylindrical Wave by Veselago Lens with Finite Size and Losses in  $kD \gg 1$  Region  
*Alexander P. Anyutin (Russian New University, Russia);*

## PIERS SURVEY

This is to inform you about future Progress in Electromagnetics Research Symposium (PIERS).

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A1. For the next PIERS to be held on 22–26 March, 2010 in Xi'an, CHINA,

( ) I will be interested in organizing and chairing a session, the proposed title is  
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B. For past PIERS, I attended

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| ( ) 7th PIERS1997 in Hong Kong  | ( ) 8th PIERS1997 in Cambridge  | ( ) 9th PIERS1998 in Nantes     |
| ( ) 10th PIERS1999 in Taipei    | ( ) 11th PIERS2000 in Cambridge | ( ) 12th PIERS2001 in Osaka     |
| ( ) 13th PIERS2002 in Cambridge | ( ) 14th PIERS2003 in Singapore | ( ) 15th PIERS2003 in Honolulu  |
| ( ) 16th PIERS2004 in Pisa      | ( ) 17th PIERS2004 in Nanjing   | ( ) 18th PIERS2005 in Hangzhou  |
| ( ) 19th PIERS2006 in Cambridge | ( ) 20th PIERS2006 in Tokyo     | ( ) 21st PIERS2007 in Beijing   |
| ( ) 22nd PIERS2007 in Prague    | ( ) 23rd PIERS2008 in Hangzhou  | ( ) 24th PIERS2008 in Cambridge |
| ( ) 25th PIERS2009 in Beijing   | ( ) 26th PIERS2009 in Moscow    |                                 |

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# PIERS 2010 in Xian

## Progress in Electromagnetics Research Symposium

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| 5 Transmission lines and waveguide discontinuities   | 6 Resonators, filters, interconnects, packaging, MMIC          |
| 7 Antenna theory and radiation                       | 8 Microstrip and printed antennas, phase array antennas        |
| 9 RF and wireless communication, multipath           | 10 Mobile antennas, conformal and smart skin antennas          |
| 11 Power electronics, superconducting devices        | 12 Systems and components, electromagnetic compatibility       |
| 13 Nano scale electromagnetics, MEMS                 | 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     | 18 Subsurface imaging and detection technology, GPR            |
| 19 Active and passive remote sensing systems         | 20 Electromagnetic signal processing, wavelets, neural network |
| 21 Rough surface scattering and volume scattering    | 22 Remote sensing of the earth, ocean, and atmosphere          |
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| 25 Optics and photonics, gyrotrons, THz technology   | 26 Quantum well devices, microwave photonic systems, PBG       |
| 27 Medical electromagnetics, biological effects, 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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### PAPER SUBMISSION MUST BE RECEIVED BY 7 SEPTEMBER 2009

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**Abstract Guidelines:** Authors are invited to submit a one-page abstract of no less than 250 words in English. No full-length paper is required. The abstract should explain clearly the content and relevance of the proposed technical contribution. On a separate page list the following information: (1) Title of the paper, (2) Name, affiliation, and email of each author, (3) Mailing address, (4) Telephone/Fax numbers, (5) Corresponding author and Presenting author, (6) Topic or Session Organizer, if applicable, (7) State if poster presentation is preferred.

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	<b>TUESDAY PM</b> <b>13:00 AUGUST 18</b>		<b>WEDNESDAY AM</b> <b>8:00 AUGUST 19</b>		<b>THURSDAY PM</b> <b>13:00 AUGUST 19</b>		<b>THURSDAY AM</b> <b>8:00 AUGUST 20</b>	
<b>ROOM A</b>	2P1 - Remote Sensing, RADAR Imaging & Detection		3A1 - New Applications of Ground Penetrating Radar for Non-destructive Testing 1		3P1 - Synthetic Aperture Radar (SAR) Satellite Status and Evolution		4A1a - Satellite Thermal Monitoring of Ocean Surface and Earth Surface	4A1b - Scattering, Emission and Remote Sensing of the Atmosphere
<b>ROOM B</b>	2P2a - Anisotropic and Liquid Crystals Optics	2P2b - Geometric Phases and Transport in Polariz& Singular Optics	3A2 - Light Scattering and Radiative Transfer: Theories and Applications 1		3P2 - Light Scattering and Radiative Transfer: Theories and Applications 2		4A2a - Light Scattering and Radiative Transfer: Theory&Application 3	4A2b - Optical Solitons 1
<b>ROOM C</b>	2P3a - Systems and Components, EMC	2P3b - Numerical and Semi-analytic Modelling of PC	3A3 - Plasmonics, Metamaterials, and Magneto-Optics 1		3P3 - Plasmonics, Metamaterials, and Magneto-Optics 2		4A3 - Nanophotonics: Materials and Device Applications 1	
<b>ROOM D</b>	2P4 -Electromagnetic Field in the Metamaterials and Dispersion Design of Cloaks and Photonic Crystals 1		3A4 - Electromagnetic Field in the Metamaterials and Dispersion Design of Cloaks and Photonic Crystals 2		3P4 - Biomedical Electromagnetism Instruments, Electromagnetism Condensed Materials and Imaging 1		4A4 - Biomedical Electromagnetism Instruments, Electromagnetism Condensed Materials and Imaging 2	
<b>ROOM E</b>	2P5 - Novel Mathematical Methods in Electromagnetics 1		3A5 - Novel Mathematical Methods in Electromagnetics 2		3P5 - Novel Mathematical Methods in Electromagnetics 3		4A5 - Computational Techniques	
<b>ROOM F</b>	2P6a - Applicators for Medical and Industrial Appl. of EM Field	2P6b - Medical Electromagnetics, RF Biological Effect	3A6a - Power Electronics	3A6b - RF and Wireless Communication	3P6 - Microwave Treatment of Materials		4A6 - Advanced High Frequency Electromagnetic Simulation Tools 1	
<b>ROOM G</b>	2P7 - Antenna and Array: Theory and Design		3A7 - Antenna Theory and Radiation 1		3P7 - Antenna Theory and Radiation 2		4A7 -Antenna Theory and Radiation 3	
<b>ROOM H</b>	2P8 - Electromagnetic Probing of Atmosphere and Ionosphere		3A8 - Nonlinear Dynamics in Electromagnetics, Electronics and Animate Nature		3P8 - Electromagnetic Theory and Applications		4A8 - Extended/Unconventional Electromagnetic Theory, EHD/EMHD, and Electro-biology	
<b>ROOM I</b>	2P9 - Theory and Methods of Digital Signal and Image Processing		3A9 - Microwave and Millimeter Wave Circuits and Devices, CAD		3P9a - EM Noise Exploitation	3P9b - Microwave Devices Using Composite Materials	4A9 - Theory and Modeling of Multimode Transmission Lines: Waveguides, Microstrip Lines, Dielectric Waveguides 1	
<b>ROOM J</b>			3A10 - Advanced Photonics-based Devices for Telecom Systems		3P10 - Electromagnetic Field Modeling, Inversion and Applications 1		4A10 - Electromagnetic Field Modeling, Inversion and Applications 2	
<b>ROOM K</b>					3P11 - New Applications of GPR for Non-destructive Testing 2			

	<b>THURSDAY PM 13:00 AUGUST 20</b>		<b>FRIDAY AM 8:00 AUGUST 21</b>		<b>FRIDAY PM 13:00 AUGUST 21</b>	
<b>ROOM A</b>	4P1 - Rough Surface Scattering and Related Phenomena		5A1a - Electromagnetic Waves and Media	5A1b - Advances in Communication and Imaging in Complex Environment	5P1 - Scattering and Rough Surface Scattering	
<b>ROOM B</b>	4P2 - Optical Solitons 2		5A2 - THz, Photonic Crystals, Nanophotonics and Plasmonics		5P2 - Optics and Photonics	
<b>ROOM C</b>	4P3 - Nanophotonics: Materials and Device Applications 2		5A3 - Photonics --- Theory and Applications		5P3 - Magnetism, Magnetic Structures and Devices	
<b>ROOM D</b>	4P4a - Superconductive Active and Passive Devices and Circuits	4P4b - Inverse and Forward Problems in Radiative Transport	5A4 - Electromagnetic Theory of Plasmas, Nonlinear and Chiral Media		5P4 - Integral Equations Method in Large Electromagnetic Problems	
<b>ROOM E</b>	4P5a - Computational Electromagnetics 1	4P5b - Magnetolectric Composites: Physics and Applications	5A5 - Computational Electromagnetics 2		5P5 - Computational Electromagnetics 3	
<b>ROOM F</b>	4P6a - Modern Hybrid Methods in the Problems of CEM	4P6b - Advanced High Frequency Electromagnetic Simulation Tools 2	5A6 - Magnetic Microwave Smart Materials		5P6 - Biophotonics: Basis and Applications	
<b>ROOM G</b>	4P7 - Ultra Wide Band and Chaotic Communications		5A7 - Nonlinear and Tunable Metamaterials		5P7 - Electromagnetics and its Application in the Advanced Manufacturing Technology	
<b>ROOM H</b>	4P8 - Asymptotic High Frequency Methods		5A8 - Microwave and Millimeter-wave Devices and Circuits with CAD 2		5P8 - Asymptotic Methods and Catastrophe Theory	
<b>ROOM I</b>	4P9a - Theory and Modeling of Multimode Transmission Lines 2	4P9b - Microwave and Millimeter-wave Devices and Circuits with CAD 1				