PIERS 2009 Moscow

Progress In Electromagnetics Research Symposium

Program

August 18 - 21, 2009

Moscow, RUSSIA

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CONTENTS

TECHNICAL PROGRAM SUMMARY

Tuesday PM, August 18, 2009

Wednesday AM–PM, August 19, 2009

Wednesday AM, August 19, 2009

Wednesday PM, August 19, 2009

Thursday AM–PM, August 20, 2009

Thursday AM, August 20, 2009

Thursday PM, August 20, 2009

Friday AM–PM, August 21, 2009

Friday AM, August 21, 2009

Friday PM, August 21, 2009

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.

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.

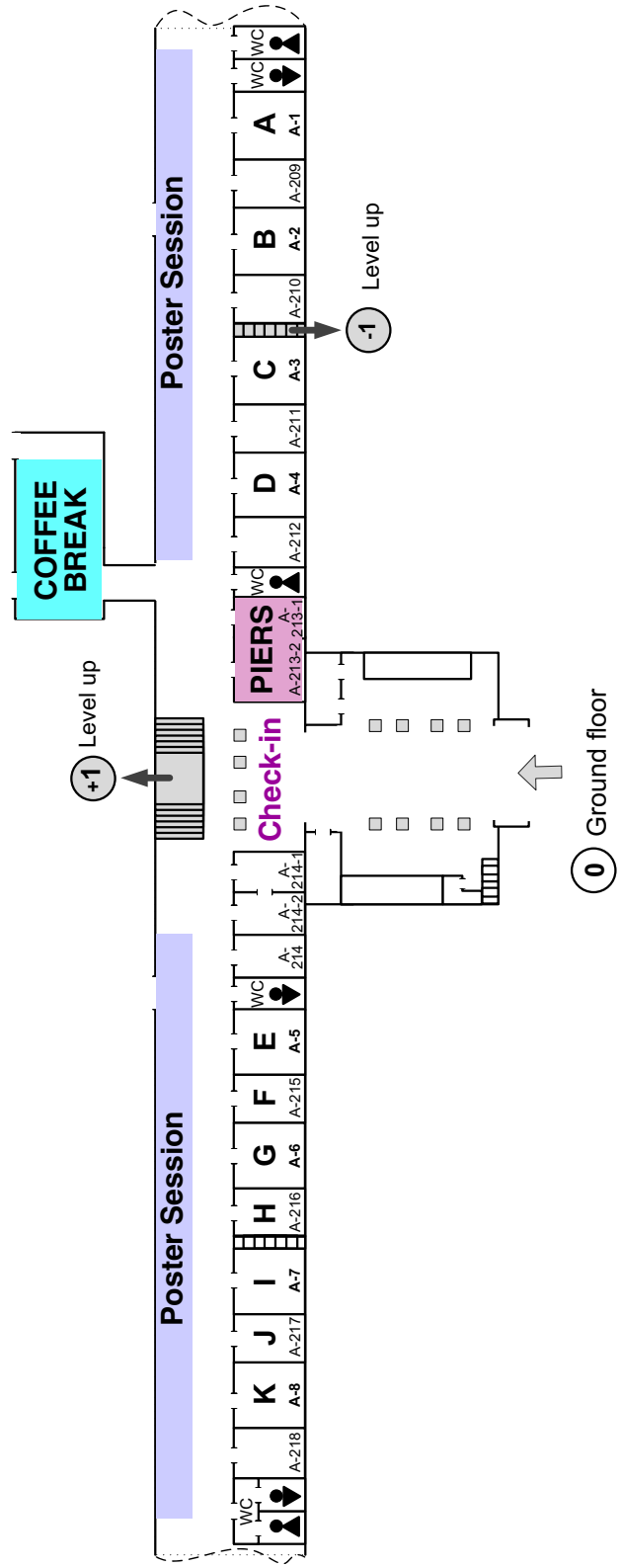
Poster Presentations

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



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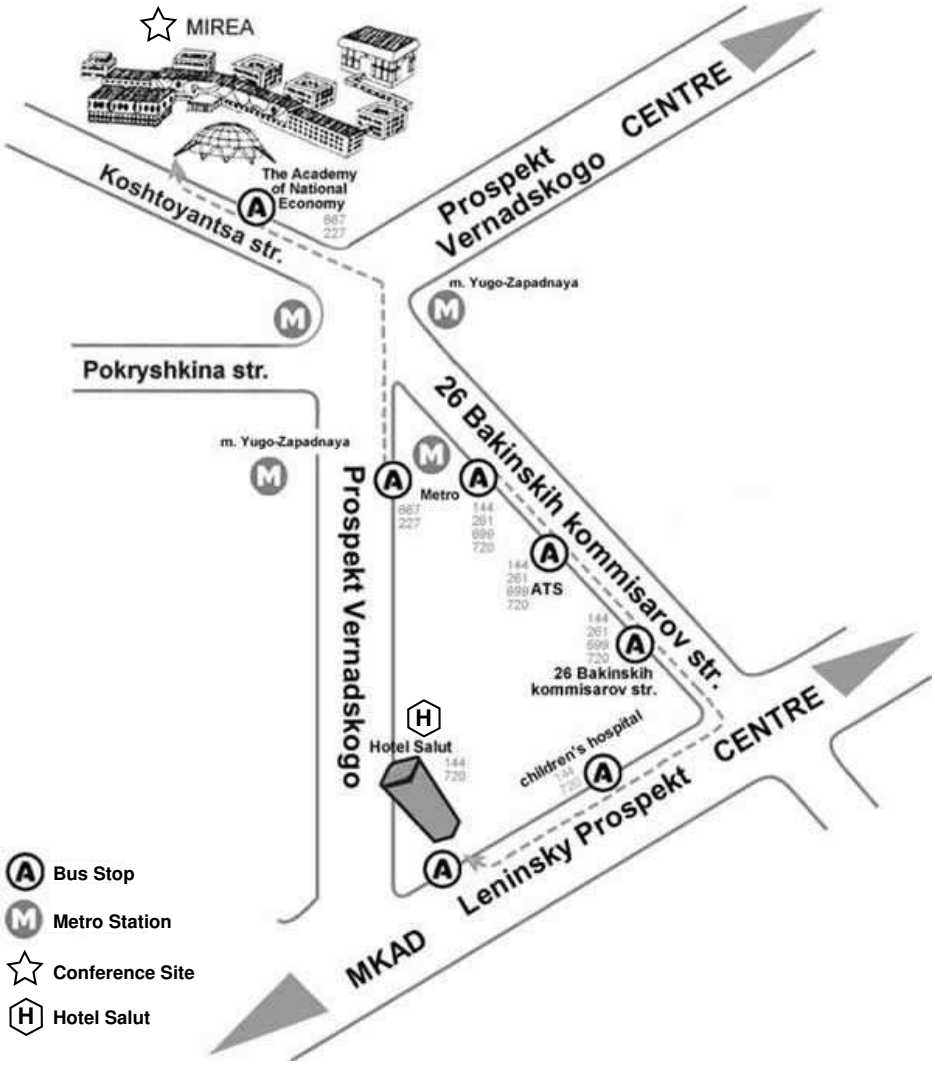

GENERAL INFORMATION

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

Session 2P1
Remote Sensing, RADAR Imaging & Detection

Tuesday PM, August 18, 2009

Room A

Chaired by Takuya Sakamoto, Shripad P. Mahulikar

13:40 Experimental Study of Shadow Region Imaging Algorithm with Multiple Scattered Waves for UWB Radars
Shouhei Kidera (*University of Electro-Communications, Japan*); *Takuya Sakamoto* (*Kyoto University, Japan*); *Toru Sato* (*Kyoto University, Japan*);

14:00 Frequency and Polarization Dependence of Scattering in Bi-continuous Random Media Model with Application to Snow
Xiaolan Xu (*University of Washington, USA*); *Leung Tsang* (*University of Washington, USA*);

14:20 Monitoring Surface Deformations over Siberian Gas Deposit Areas Using ALOS PALSAR Interferometry
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*);

14:40 Over the Horizon Sky-wave Radar: Coordinate Registration by Sea-land Transitions Identification
Fabrizio Cuccoli (*Università di Firenze, Italy*); *Luca Facheris* (*Università di Firenze, Italy*); *Dino Giuli* (*Università di Firenze, Italy*); *Francesco Sermi* (*Università di Firenze, Italy*);

15:00 Complex Permittivity Measurement of Ores and Rocks by Two Coaxial Methods
Sixin Liu (*Jilin University, China*); *Junjun Wu* (*Jilin University, China*); *Hang Dong* (*Jilin University, China*);

15:20 **Coffee Break**

15:40 A Radar's Electronic Protection from ARM Attack Using an Active Decoy
Joong-Soo Lim (*Baekseok University, Korea*);

16:00 Radar Target Imaging from Ramp Responses Using Low Frequency Extrapolation
Janic Chauveau (*Université de Nantes, France*); *Nicole de Beaucoudrey* (*Université de Nantes, France*); *Joseph Saillard* (*Université de Nantes, France*);

16:20 Infrared Signature Studies of Aircraft and Helicopters
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*);

16:40 Attitude Determination for Geostationary Satellite Using Optimized Real Time Image Registration Algorithm
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*);

Session 2P2a
Anisotropic and Liquid Crystals Optics

Tuesday PM, August 18, 2009

Room B

Organized by Ibrahim Abdulhalim

Chaired by Ibrahim Abdulhalim

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**

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

Tuesday PM, August 18, 2009

Room B

Organized by Konstantin Y. Bliokh

Chaired by Shuichi Murakami

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*);

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*);

Session 2P3a
Systems and Components, Electromagnetic Compatibility

Tuesday PM, August 18, 2009

Room C

Chaired by Reinhard Doebbelin, Rong Zeng

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 AlGaN/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.*);

14:20 Investigation of Coupling of EMC Disturbances in Doubly Fed Induction Generators
Sebastian Schulz (*Otto-von-Guericke-University Magdeburg, Germany*); *Reinhard Döebbelin* (*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 ±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**

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

Tuesday PM, August 18, 2009

Room C

Organized by Ross C. McPhedran

Chaired by Ross C. McPhedran

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*);

16:40 Numerical Modelling of Multiple-scattering Problems in Periodic Media
J. Coatleven (*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*);

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

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

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
Jin-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 Ingrey (*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. Ghafori 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 Ingrey (*University of Nottingham, United Kingdom*);

Session 2P5
Novel Mathematical Methods in Electromagnetics 1

Tuesday PM, August 18, 2009

Room E

Organized by Kazuya Kobayashi, Yury V. Shestopalov

Chaired by Kazuya Kobayashi, Yury V. Shestopalov

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 Shibazaki* (*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*);

Session 2P6a
Applicators for Medical and Industrial Applications of EM Field

Tuesday PM, August 18, 2009

Room F

Organized by Jan Vrba

Chaired by Jan Vrba

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*);

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, Indraprashth 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*);

15:20 **Coffee Break**

Session 2P6b
Medical Electromagnetics, RF Biological Effect

Tuesday PM, August 18, 2009

Room F

Chaired by Niels Kuster, Alberto Foletti

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*);

Session 2P7
Antenna and Array: Theory and Design

Tuesday PM, August 18, 2009

Room G

Chaired by Johnson Jenn-Hwa Wang, Wen Xun Zhang

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 Ramlee 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 Mircostrip 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*); *Ibrahim 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. Elhalafawy* (*Menoufia University, Egypt*);

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

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*);

15:00 Detection of Heating Effects Due to Powerful Radiowaves Propagation by Irkutsk Complex for Passive Doppler Sounding of the Ionosphere
Oleg I. Berngardt (*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. Zherebtsov* (*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
Yaroslaw A. Ilyushin (*Moscow State University, Russia*);

Session 2P9
Theory and Methods of Digital Signal and Image Processing

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 Federarion*); *O. V. Kravchenko* (*Bauman Moscow State Technical University, Russian Federarion*); *A. R. Safin* (*Kotel'nikov Institute of Radio Engineering and Electronics of RAS, Russian Federarion*);

13:40 The Theory of Spectral Estimation of Signals and Generalized Kravchenko-Kotel'nikov-Levitan Theorems
Victor Filippovich Kravchenko (*Kotel'nikov Institute of Radio Engineering and Electronics of RAS, Russian Federarion*); *Dmitry V. Churikov* (*Kotel'nikov Institute of Radio Engineering and Electronics of RAS, Russian Federarion*);

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 Federarion*);

14:20 An Application Generalized Kravchenko-Kotel'nikov Theorem on Atomic Functions $fup_N(t)$ to Interpolation Nonstationary Random Processes
O. V. Kravchenko (*Bauman Moscow State Technical University, Russian Federarion*); *A. R. Safin* (*Kotel'nikov Institute of Radio Engineering and Electronics of RAS, Russian Federarion*);

14:40 Atomic Functions in Problems of Analysis and Synthesis of Optimal Discrete Recievers
O. V. Kravchenko (*Moscow State Technical University named by N. E. Bauman, Russian Federarion*); *A. R. Safin* (*Kotel'nikov Institute of Radio Engineering and Electronics of RAS, Russian Federarion*);

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 Federarion*);

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*);

Session 3AP
Poster Session 1

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*); *Jiansheng 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 — INFPLR, 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 Iside
Liudmila Nickelson (*Semiconductor Physics Institute, Lithuania*); *Dmitrij 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 Defense 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* (*Elipse-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-µm 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
Kyungho 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 Metamaterials 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*); *Manochehr Kamyab* (*K. N. Toosi University of Technology, Iran*); *Mehrdad Djavid* (*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 Opticas (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*); *Ivson 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*);

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

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*);

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* (*"Tenzor" 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* (*Universita di Firenze, Itay*); *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*);

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*);

Session 3A2
Light Scattering and Radiative Transfer: Theories and Applications 1

Wednesday AM, August 19, 2009

Room B

Organized by Ping Yang, Michael I. Mishchenko

Chaired by Ping Yang, Mikhail Ovchinnikov

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*); *Gorden 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*);

Session 3A3
Plasmonics, Metamaterials, and Magneto-Optics 1

Wednesday AM, August 19, 2009

Room C

Organized by Yakov M. Strelniker, David J. Bergman

Chaired by Yakov M. Strelniker, David J. Bergman

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*); *Wenshan 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. Gredeskul* (*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 though 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*);

Session 3A4
Electromagnetic Field in the Metamaterials and Dispersion Design of Cloaks and Photonic Crystals 2

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

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 Aguili* (*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*);

Session 3A5
Novel Mathematical Methods in Electromagnetics 2

Wednesday AM, August 19, 2009

Room E

Organized by Kazuya Kobayashi, Yury V. Shestopalov

Chaired by Kazuya Kobayashi, Yury V. Shestopalov

08:40 Electromagnetic Forces on Charged Particles
Zi-Hua Weng (*Xiamen University, China*);

09:00 TM-Electromagnetic Guided Waves in a (Kerr-) Nonlinear 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*);

Session 3A6a
Power Electronics

Wednesday AM, August 19, 2009

Room F

Chaired by Jiri Lettl

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. Benecke* (*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**

Session 3A6b
RF and Wireless Communication

Wednesday AM, August 19, 2009

Room F

Chaired by Heung-Gyoon Ryu

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*);

Session 3A7
Antenna Theory and Radiation 1

Wednesday AM, August 19, 2009

Room G

Organized by Valery A. Permyakov

Chaired by Valery A. Permyakov

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 Appollian 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*);

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

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*);

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 "VNIIOFI" All-Russian Research Institute of Optical and Physical Measurements, Russia*);

Session 3A9
Microwave and Millimeter Wave Circuits and Devices, CAD

Wednesday AM, August 19, 2009

Room I

Chaired by Jan-Dong Tseng, Ikuo Awai

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*); *Jiansheng 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*); *Ceyhun 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*);

Session 3A10
Advanced Photonics-based Devices for Telecom Systems

Wednesday AM, August 19, 2009

Room J

Organized by Elena Mishina, Mikhail E. Belkin

Chaired by Elena Mishina, Mikhail E. Belkin

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 Radioengineereering, Electronics and Automation (Technical University), Russia*); *N. Sherstyuk* (*Moscow State Institute of Radioengineereing, Electronics and Automation (Technical University), Russia*); *Elena Mishina* (*Moscow State Institute of Radioengineereing, 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 µm
David Duchesne (*INRS-EMT, Université du Québec, Canada*); *Luca Razzari* (*Universite du Quebec, Institute 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* (*Institute 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*);

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

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

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
Yukihiro 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*);

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

Wednesday PM, August 19, 2009
Room B
Organized by Ping Yang, Michael I. Mishchenko
Chaired by Warren Wiscombe, Qiang Fu

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*); *Yaroslaw A. Ilyushin* (*Moscow State University, Russia*); *S. V. Korkin* (*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. Benghorieb (*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, Byelarus*); *Alexander V. Konkolovich* (*B. I. Stepanov Institute of Physics of the National Academy of Sciences of Belarus, Byelarus*); *Polina G. Maksimenko* (*B. I. Stepanov Institute of Physics of the National Academy of Sciences of Belarus, Byelarus*);

17:40 Characterization of Lymphocytes Using the Scanning Flow Cytometry
Maxim A. Yurkin (*Institute of Chemical Kinetics and Combustion, Russia*); *D. I. Strokotov* (*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*);

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

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 Subwavelength 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 Scienses, Russia*); *Vladimir N. Semenenko* (*Institute for Theoretical and Applied Electromagnetics, Russian Academy of Sciences, Russia*);

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

Wednesday PM, August 19, 2009

Room D

Organized by Ganquan Xie, Jianhua Li, Jauyn Grace Lin

Chaired by Jianhua Li

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. Sharakshane* (*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*);

Session 3P5
Novel Mathematical Methods in Electromagnetics 3

Wednesday PM, August 19, 2009

Room E

Organized by Kazuya Kobayashi, Yury V. Shestopalov

Chaired by Kazuya Kobayashi, Yury V. Shestopalov

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*);

Session 3P6
Microwave Treatment of Materials

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

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 Stuerga* (*Universite de Bourgogne, France*);

15:00 Thermal Tuning and Loop Modes within Cylindrical Applicator
Didier Albert Camill Stuerga (*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 Stuerga (*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*);

Session 3P7
Antenna Theory and Radiation 2

Wednesday PM, August 19, 2009
Room G
Organized by Valery A. Permyakov
Chaired by Valery A. Permyakov

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 Shamoon College of Engineering, Israel*); *Reuven Shavit* (*Ben-Gurion University of the Negev, Israel*); *Eugene O. Kamenetskii* (*Ben Gurion University of the Negev, Israel*); *Roman Joffe* (*Sami Shamoon College of Engineering, Israel*); *David Rahmilov* (*Sami Shamoon College of Engineering, Israel*); *Saad Tapuchi* (*Sami Shamoon College of Engineering, Israel*);

15:20 **Coffee Break**

15:40 Anomalously 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 Superieure d'Electronique de l Ouest, France*); *François Dupont* (*STMicroelectronics, France*); *André Bremond* (*STMicroelectronics, France*); *Laurent Ventura* (*Laboratoire de Microélectronique de Puissance, France*);

18:00 Geneation 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*);

Session 3P8
Electromagnetic Theory and Applications

Wednesday PM, August 19, 2009

Room H

Chaired by Mikhail N. Zhadin

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*);

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

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**

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

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 Universtity 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, Indraprashth 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 Kyoon Lee* (*Syracuse University, USA*);

17:20 Unusual Relationship between Permittivity and Tunability of Doped Ferroelectric BSTO Ceramics for Microwave Application
E. Nenasheva (*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*);

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

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*);

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*);

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*);

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

Wednesday PM, August 19, 2009

Room K

Organized by Lorenzo Capineri, Colin G. Windsor

Chaired by Lorenzo Capineri, Pierluigi Falorni

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* (*Universita di Firenze, Itay*); *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* (*Universita di Firenze, Itay*); *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*);

Session 4AP
Poster Session 2

Thursday AM–PM, August 20, 2009

9:00 AM - 4:00 PM

Room K

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 (*Kiraç 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*); *Jea-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. Altynnikov (*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, 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-µm 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*); *Nadiyatulakmar 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-deedback 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-HPEM
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 Magnetooptical 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*); *Xianqi 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*);

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

Thursday AM, August 20, 2009

Room A

Organized by Shigehisa Nakamura

Chaired by Valery L. Mironov, Shigehisa Nakamura

08:40 Error and Domain of Applicability Studies for the Schmugge'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**

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

Thursday AM, August 20, 2009

Room A

Chaired by Shigehisa Nakamura

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*);

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

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 (*Ventspils 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. Priezzhev* (*Lomonosov Moscow State University, Russia*);

10:00 The 3D Radiative Effects of Clouds in Aerosol Retrieval: Can We Remove Them?
Evgueni 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**

Session 4A2b
Optical Solitons 1

Thursday AM, August 20, 2009

Room B

Organized by Stefan Wabnitz

Chaired by Stefan Wabnitz, Nikolay N. Rosanov

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 Math'ematiques, 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*);

Session 4A3
Nanophotonics: Materials and Device Applications 1

Thursday AM, August 20, 2009

Room C

Organized by Liang Tang

Chaired by Yu-Hsuan Kuo, Liang Tang

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 Zoriniants (*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*);

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 Structurers
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*);

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

Thursday AM, August 20, 2009

Room D

Organized by Ganquan Xie, Jianhua Li, Jauyn Grace Lin

Chaired by Jianhua Li

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 Quement* (*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*);

Session 4A5
Computational Techniques

Thursday AM, August 20, 2009

Room E

Organized by Tsuneki Yamasaki, Yoichi Okuno

Chaired by Tsuneki Yamasaki

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*); *Satoi 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*);

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

08:40 The $\boldsymbol{A}$, $\boldsymbol{B}$, $\boldsymbol{C}$ Numbers and Their Application in the Theory of Waveguides
Mariana Nikolova Georgieva-Grosse (*Meterstrasse 4, Germany*); *Georgi Nikolov Georgiev* (*University of Veliko Tirnovo "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*);

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. Brovko (*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*);

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*);

Session 4A7
Antenna Theory and Radiation 3

Thursday AM, August 20, 2009

Room G

Organized by Valery A. Permyakov

Chaired by Valery A. Permyakov

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*);

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

Thursday AM, August 20, 2009

Room H

Organized by Eva Gescheidtová

Chaired by Eva Gescheidtová

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 Structute 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*);

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

Thursday AM, August 20, 2009

Room I

Organized by Anatoly S. Ilinskiy

Chaired by Anatoly S. Ilinskiy

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. Il'inskiy (*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 Caracteristics 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 Devises 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*);

Session 4A10
Electromagnetic Field Modeling, Inversion and Applications 2

Thursday AM, August 20, 2009

Room J

Organized by Ganquan Xie, Michael Oristaglio, Jianhua Li
Chaired by Jianhua Li, Clement Kostov

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 Ziółkowski* (*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 Univerisity, 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*);

Session 4P1
Rough Surface Scattering and Related Phenomena

Thursday PM, August 20, 2009

Room A

Organized by Zu-Han Gu, Danhong Huang

Chaired by Zu-Han Gu, Danhong Huang

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*); *Ingve 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 (CICESE), 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*);

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*);

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*);

Session 4P2
Optical Solitons 2

Thursday PM, August 20, 2009

Room B

Organized by Stefan Wabnitz

Chaired by Stefan Wabnitz, Nikolay N. Rosanov

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*);

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*);

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* (*Univérsite du Québec, Canada*); *Marcello Ferrera* (*Universite du Quebec, Institute National de la Recherche Scientifique, Canada*); *C. S. Manda* (*Univérsite du Québec, Canada*); *M. Zaezjev* (*Univérsite du Québec, Canada*); *Luca Razzari* (*Universite du Quebec, Institute National de la Recherche Scientifique, Canada*); *J.-Y. Hwang* (*Univérsite du Québec, Canada*); *K. A. Rutkowska* (*Univérsite du Québec, Canada*); *Alain Pignolet* (*Universite du Quebec, 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* (*Universita dell'Insubria, Italy*); *Massimo Brambilla* (*INFM Research Unit of Bari, Italy*); *Luigi A. Lugiato* (*Universita 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*);

Session 4P3
Nanophotonics: Materials and Device Applications 2

Thursday PM, August 20, 2009

Room C

Organized by Liang Tang

Chaired by Yu-Hsuan Kuo, Liang Tang

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 Rosenblat* (*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*);

15:00 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**

15:40 NIR, MWIR and LWIR Quantum Well Infrared Photodetector Design Using Transfer Matrix Method
Ricardo Augusto T. Santos (*Instituto Tecnologico de Aeronautica, Brazil*); *Fabio Durante Pereira Alves* (*Instituto Tecnologico de Aeronautica, Brazil*); *J. De Amorim* (*Instituto Tecnologico de Aeronautica, Brazil*); *C. G. R. Taranti* (*Instituto Tecnologico 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 Tecnologico de Aeronautica, Brazil*); *Ricardo Augusto T. Santos* (*Instituto Tecnologico 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
Ferdenant 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*);

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

Thursday PM, August 20, 2009

Room D

Organized by Pascal Febvre, Michel Piat

Chaired by Pascal Febvre

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 Electrodynamic 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 fur 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*);

Session 4P4b
Inverse and Forward Problems in Radiative Transport

Thursday PM, August 20, 2009

Room D

Organized by Vadim A. Markel

Chaired by Vadim A. Markel

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*);

Session 4P5a
Computational Electromagnetics 1

Thursday PM, August 20, 2009

Room E

Organized by Alexander B. Samokhin

Chaired by Alexander B. Samokhin

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.*);

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**

Session 4P5b
Magnetoelectric Composites: Physics and Applications

Thursday PM, August 20, 2009

Room E

Organized by Yury K. Fetisov, Gopalan Srinivasan

Chaired by Yury K. Fetisov

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 Tecknology 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 Subterahertz 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 $TbCo_2$/FeCo Multilayers under SRT, Induced by an External Magnetic Field
Alexey Klimov (*LEMAC — IEMN CNRS UMR 8520, France*); *Nicolas Tiercelin* (*LEMAC — IEMN CNRS UMR 8520, Cité scientifique, France*); *Vladimir Preobrazhensky* (*LEMAC — IEMN CNRS UMR 8520, Cité scientifique, France*); *Philippe Pernod* (*LEMAC — 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*);

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

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*);

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 Tecnologico de Aeronautica, Brasil*); *Alberto Jose de Faro Orlando* (*Instituto Tecnologico 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**

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

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 $\boldsymbol{L}$ ($\boldsymbol{c}$, $\boldsymbol{\rho}$, $\boldsymbol{n}$) 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*);

Session 4P7
Ultra Wide Band and Chaotic Communications

Thursday PM, August 20, 2009

Room G

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

Chaired by Sergei O. Starkov

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. Kletzov* (*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*);

Session 4P8
Asymptotic High Frequency Methods

Thursday PM, August 20, 2009

Room H

Organized by Frédéric Molinet, Giuliano Manara

Chaired by Frédéric Molinet, Giuliano Manara

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* (*MOTHESIM, 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 (*MOTHESIM, 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 Hight 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*);

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

Thursday PM, August 20, 2009

Room I

Organized by Anatoly S. Ilinskiy

Chaired by Anatoly S. Ilinskiy

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 Nikolaevich Bogolyubov* (*Moscow State University, Russia*);

15:20 **Coffee Break**

Session 4P9b
Microwave and Milllimeter-wave Devices and Circuits with CAD 1

Thursday PM, August 20, 2009
Room I
Organized by Subal Kar
Chaired by Subal Kar

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, Indraprashth University Campus, India*);

16:20 A Low Phase-noise Low-power PLL in 0.13-µm 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 (*Yildiz Technical University, Turkey*); *Filiz Günes* (*Yildiz Technical University, Turkey*);

17:20 Design of Metallic Cylindrical Waveguide Bandpass Filters Using Genetic Algorithm Optimization
Rawdha Thabet (*University of Constantine, Algerie*); *Mohamed Lahdi Riabi* (*University of Constantine, Algerie*);

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*);

Session 5AP
Poster Session 3

Friday AM–PM, August 21, 2009
9:00 AM - 4:00 PM
Room I

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 Aguili* (*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. Vanwolleghem* (*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 — Qusi 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 — Qusi 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 Cieśla (*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 Er^{3+} Doped Ag Nanoparticles
J. M. Vargas (*UNICAMP-Instituto de Fisica Gleb Wataghin, Brazil*); *W. Iwamoto* (*UNICAMP-Instituto de Fisica Gleb Wataghin, Brazil*); *L. M. Holanda, Jr.* (*UNICAMP-Instituto de Fisica 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 Biostymulation Pre-sowing Seed
Antoni Cieśla (*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. Kuvichkin* (*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 Cocoletzi* (*Universidad Autónoma de Puebla, Mexico*);

29 Ventilation Efficiency and Carbon Dioxide (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 Vasilÿevich 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 Analitical 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. Shawki* (*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 Asymptoticaly 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
Özgur 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 Mykhaylovska* (*Ruhr-Universität Bochum, Germany*);

52 Simulation of Fractal Polariton-plasmon Density in the Metamatherial 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. Shcherbyna* (*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
Fatemch 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*); *Fatemch 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, Mexico*); *J. Madrigal-Melchor* (*Escuela de Física de la Universidad Autónoma de Zacatecas, Mexico*);

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 Circurlarly 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 Magnetostatic 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 Radation 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 Nonmagnetic 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*);

Session 5A1a
Electromagnetic Waves and Media

Friday AM, August 21, 2009

Room A

Chaired by Masatoshi Sano

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*);

Session 5A1b
Advances in Communication and Imaging in Complex Environment

Friday AM, August 21, 2009

Room A

Organized by Rachid Talhi

Chaired by Rachid Talhi

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*);

Session 5A2
THz, Photonic Crystals, Nanophotonics and Plasmonics

Friday AM, August 21, 2009

Room B

Chaired by Arkadii A. Krokhin, Valery L. Kuznetsov

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 Pedag 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*);

Session 5A3
Photonics — Theory and Applications

Friday AM, August 21, 2009

Room C

Organized by Anthony H. J. Fleming

Chaired by Anthony H. J. Fleming

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-wavelenght 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 Berceli (*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. Ndangali (*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_2 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*);

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

Friday AM, August 21, 2009

Room D

Organized by Nikolay S. Erokhin

Chaired by Nikolay S. Erokhin

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*);

Session 5A5
Computational Electromagnetics 2

Friday AM, August 21, 2009
Room E
Organized by Alexander B. Samokhin
Chaired by Alexander B. Samokhin

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*); *Irsadi M. Aksun* (*Koc University, Turkey*);

10:20 **Coffee Break**

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*);

Session 5A6
Magnetic Microwave Smart Materials

Friday AM, August 21, 2009
Room F
Organized by Larissa V. Panina, Arcady P. Zhukov
Chaired by Arcady P. Zhukov

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 Tunable 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*);

Session 5A7
Nonlinear and Tunable Metamaterials

Friday AM, August 21, 2009

Room G

Organized by Maxim Gorkunov

Chaired by Maxim Gorkunov

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 "TECHNOMASH", 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*);

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

Friday AM, August 21, 2009

Room H

Organized by Subal Kar

Chaired by Subal Kar

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*);

Session 5P1
Scattering and Rough Surface Scattering

Friday PM, August 21, 2009

Room A

Chaired by Pyotr Yakovlevich Ufimtsev, Olivier Merchiers

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*);

Session 5P2
Optics and Photonics

Friday PM, August 21, 2009

Room B

Chaired by Toshiyuki Shiozawa, Yewen Zhang

13:40 Design of Very High Birefringence and Flat Near-zero Dispersion Photonic Crystal Fibers
Danilo 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*); *Ziying 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. Lisyansky* (*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*);

Session 5P3
Magnetism, Magnetic Structures and Devices

Friday PM, August 21, 2009

Room C

Organized by Galina S. Makeeva, Martha Pardavi-Horvath
Chaired by Ralf Meckenstock

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*);

Session 5P4
Integral Equations Method in Large Electromagnetic Problems

Friday PM, August 21, 2009

Room D

Organized by Yury G. Smirnov, Eugeny E. Tyrtyshnikov

Chaired by Yury G. Smirnov, Eugeny E. Tyrtyshnikov

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. Tyrtyshnikov* (*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. Tyrtyshnikov* (*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. Tyrtyshnikov* (*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 Appliance 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 Osnabruck, 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*);

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 Heterogenous 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 Netherland*);

15:20 **Coffee Break**

15:40 Computational Modeling of New Kinds of Fractal Antennas and Fractal Frequency-selective Structures Based on Them
Eugene Nickolaevich 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*);

Session 5P6
Biophotonics: Basis and Applications

Friday PM, August 21, 2009

Room F

Organized by Cristiano De Mello Gallep

Chaired by Cristiano De Mello Gallep

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*);

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*);

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. Malyshenko* (*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. Beloussov* (*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*);

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

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*);

14:00 Voxel Model-based FGM Metal Part Manufacturing by Plasma Deposition
Bangyou Hu (*Huazhong University of Scince 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*);

15:00 Research on Brushless Doubly-fed Machine with a New Wound Rotor and Its Generating System
Zhongchao Wei (*Huazhong University of Science and Technology, China*); *Xuefan Wang* (*Huazhong University of Science and Technology, China*); *Xia Chen* (*Huazhong University of Science and Technology, China*); *Chaohao Kan* (*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 Electrial 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*);

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

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*);

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 Tickonov'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. Dobrokhotov (*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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( ) 10th PIERS1999 in Taipei	( ) 11th PIERS2000 in Cambridge	( ) 12th PIERS2001 in Osaka
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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
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31 Constitutive relations and bianisotropic media
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	TUESDAY PM 13:00 AUGUST 18		WEDNESDAY AM 8:00 AUGUST 19		THURSDAY PM 13:00 AUGUST 19		THURSDAY AM 8:00 AUGUST 20	
ROOM A	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
ROOM 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
ROOM C	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	
ROOM D	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	
ROOM E	2P5 - Novel Mathematical Methods in Electromagnetics 1		3A5 - Novel Mathematical Methods in Electromagnetics 2		3P5 - Novel Mathematical Methods in Electromagnetics 3		4A5 - Computational Techniques	
ROOM F	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	
ROOM G	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	
ROOM H	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	
ROOM I	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	
ROOM J			3A10 - Advanced Photonics-based Devices for Telecom Systems		3P10 - Electromagnetic Field Modeling, Inversion and Applications 1		4A10 - Electromagnetic Field Modeling, Inversion and Applications 2	
ROOM K					3P11 - New Applications of GPR for Non-destructive Testing 2			

	THURSDAY PM 13:00 AUGUST 20		FRIDAY AM 8:00 AUGUST 21		FRIDAY PM 13:00 AUGUST 21	
ROOM A	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	
ROOM B	4P2 - Optical Solitons 2		5A2 - THz, Photonic Crystals, Nanophotonics and Plasmonics		5P2 - Optics and Photonics	
ROOM C	4P3 - Nanophotonics: Materials and Device Applications 2		5A3 - Photonics --- Theory and Applications		5P3 - Magnetism, Magnetic Structures and Devices	
ROOM D	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	
ROOM E	4P5a - Computational Electromagnetics 1	4P5b - Magnetoelectric Composites: Physics and Applications	5A5 - Computational Electromagnetics 2		5P5 - Computational Electromagnetics 3	
ROOM F	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	
ROOM G	4P7 - Ultra Wide Band and Chaotic Communications		5A7 - Nonlinear and Tunable Metamaterials		5P7 - Electromagnetics and its Application in the Advanced Manufacturing Technology	
ROOM H	4P8 - Asymptotic High Frequency Methods		5A8 - Microwave and Milllimeter-wave Devices and Circuits with CAD 2		5P8 - Asymptotic Methods and Catastrophe Theory	
ROOM I	4P9a - Theory and Modeling of Multimode Transmission Lines 2	4P9b - Microwave and Milllimeter-wave Devices and Circuits with CAD 1				