

# PIERS 2012 Moscow

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Progress In Electromagnetics Research Symposium

Program

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August 19–23, 2012  
Moscow, RUSSIA

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# Progress In Electromagnetics Research Symposium

August 19–23, 2012

Moscow, RUSSIA

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- Russian Foundation for Basic Research
- The Swedish Institute
- Russian Academy of Sciences
- The Electromagnetics Academy at Zhejiang University
- The Electromagnetics Academy

## **PIERS 2012 MOSCOW EXHIBITOR**

- Centurion System Inc. — USA

## **SYMPOSIUM VENUE**

The 2012 Progress in Electromagnetics Research Symposium will be held on August 19–23, 2012, at Moscow State Institute of Radio Engineering, Electronics and Automation (MIREA), Moscow, Russia. During the symposium, the PIERS OFFICE will also be located in the MIREA Conference Building.

## **REGISTRATION**

The PIERS technical sessions will begin at 8:40 on Monday, August 20, 2012. You may register at the registration desk located in Entrance Hall, 1st floor, MIREA Conference Building, beginning from 14:00 to 18:00 on Sunday, August 19, 2012, and from 08:40 to 18:00 during the Symposium, August 20–23, 2012.

The on-site registration fee is USD\$680. The student registration fee is USD\$400 (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 to the coffee break, interactive areas, and technical sessions will be prohibited if a name badge is not visible.

## **SPECIAL EVENTS**

### **Symposium Reception**

On Monday, August 20, from 17:00 to 19:00, symposium reception will take place at Entrance Hall, MIREA Conference Building. For registered PIERS participant, the reception is free. For unregistered companions, the price is USD 20 per person. Please make reservation in advance and pay cash at PIERS check-in desk.

### **Symposium Banquet**

On Wednesday, August 22, from 18:30 to 21:30, symposium banquet is planned for PIERS participants and their guests. A limited number of banquet tickets will be available. For all participants, the price is USD 80 per person. Please make reservation and pay in advance.

## **PIERS ONLINE**

Information on PIERS 2012 Moscow and future PIERS is posted at [www.piers.org](http://www.piers.org).

## GUIDELINE FOR PRESENTER

### Oral Presentations

- **Load and TEST presentation files in advance:**  
Presenting authors should upload and test presentation files in the PIERS OFFICE no later than 12 hours before the scheduled talk. Presenters are not allowed to detach the session computer and attach their own notebook/laptop to the LCD projector in session rooms.
- **Presentation files format:**  
PDFs and Powerpoint files are recommended. Movies or animations in MPEG, Windows Media, etc, should be tested in PIERS computer in PIERS OFFICE no later than half day before the session. Presentation files in USB disk, CD-ROM, DVD are acceptable by PIERS Computer.
- **Report to Session Chair:**  
Presenters are required to report to their session chairs at least 10 minutes prior to the start of their session.
- **20 mins time limit:**  
Each oral presentation, 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.

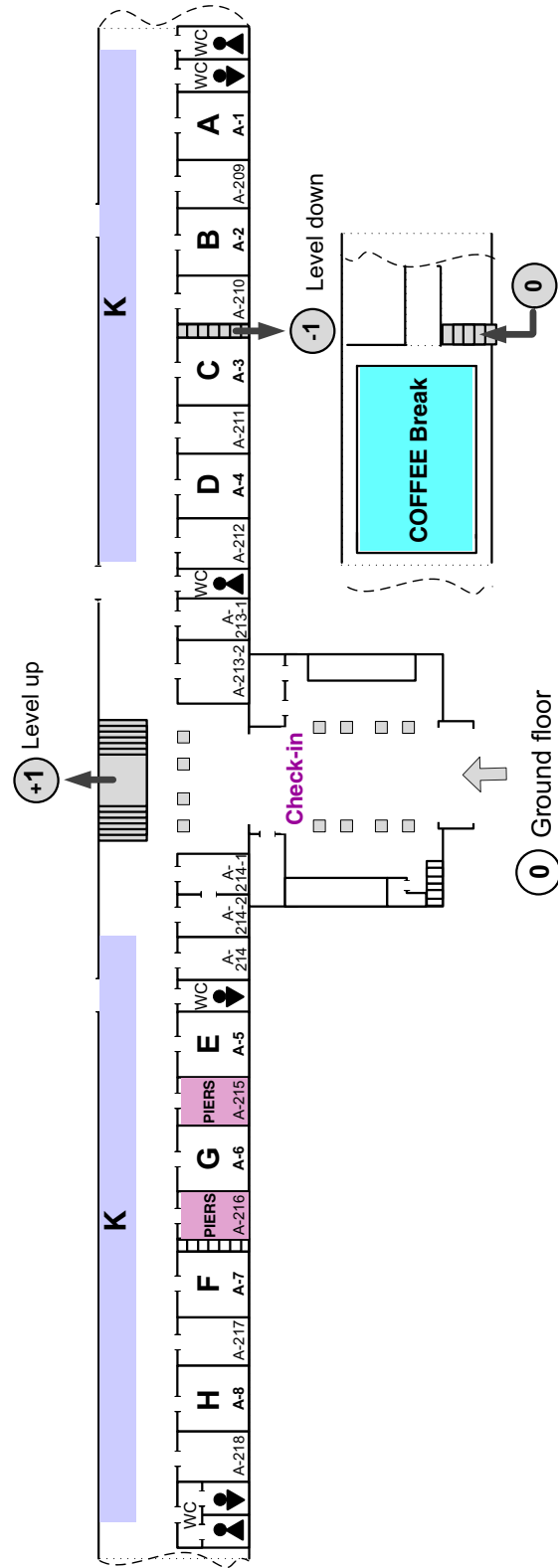
### Poster Presentations

Presenters should indicate time slots of their presence on the panel and be present for interactive questions within the posted time slots. Each poster can be posted 3 hours, 9:30–12:30 and 14:30–17:30, and all presenters are suggested to be present during 10:40–11:00 and 15:40–16:00.

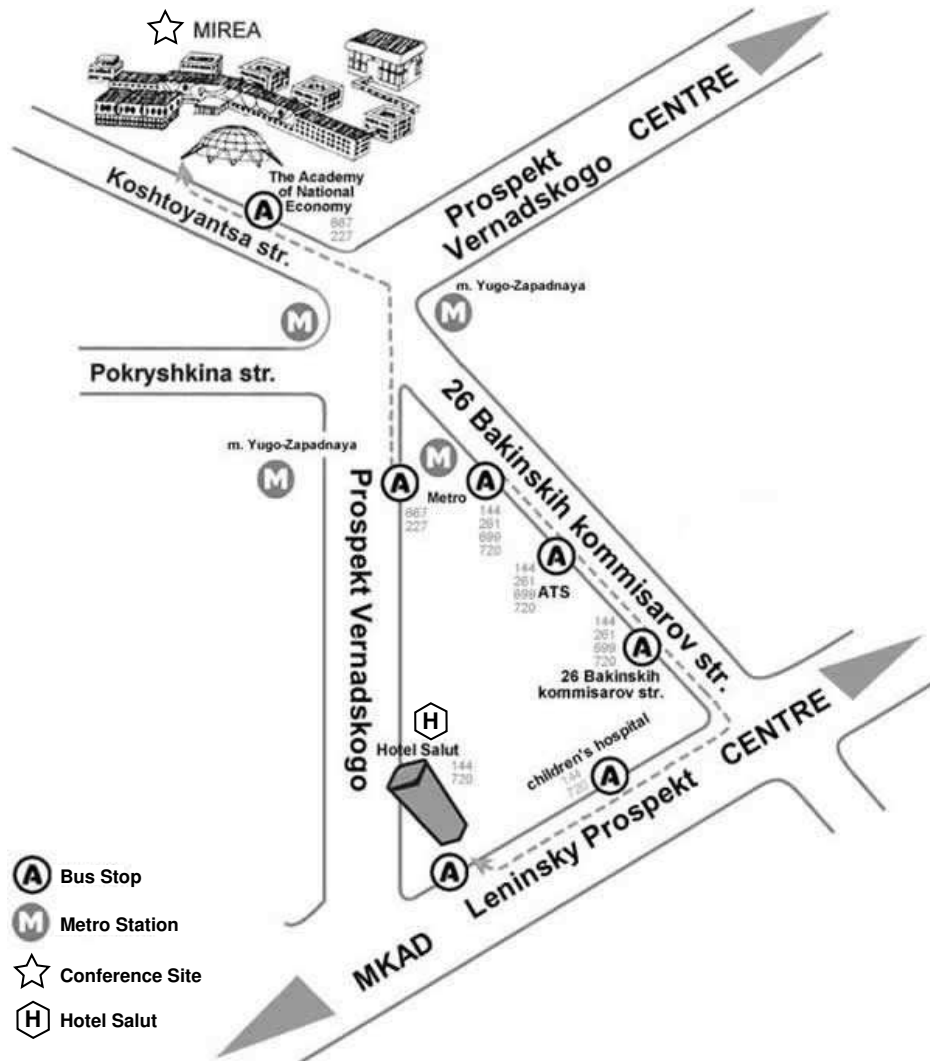
One panel (about 70(W) x 180(H) cm) will be available for each poster.

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

## MAP OF CONFERENCE SITE



## MAP OF OFFERED PIERS HOTEL



## GENERAL INFORMATION

### LANGUAGE

The official language for the Symposium is English.

### CURRENCY AND CREDIT CARDS

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

### TAX AND TIP

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

### TAXI

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

### BUSINESS OPENING HOURS

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

### ELECTRICITY

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

## PIERS 2012 MOSCOW TECHNICAL PROGRAM

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### Session 1A1

#### Fiber, Optics and Photonics, Laser

Monday AM, August 20, 2012

#### Room A

Chaired by Vyacheslav V. Popov, Yasuhiko Shimotsuma

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- 09:20 Spectrum-sliced Split-step Fourier Method for Precise Simulation of Supercontinuum Generation in Dispersion-Engineered Photonic Crystal Fibers  
*Di Yang (Huazhong University of Science and Technology (HUST), China); Ming Tang (Huazhong University of Science and Technology (HUST), China); Songnian Fu (Huazhong University of Science and Technology (HUST), China); P. Shum (Huazhong University of Science and Technology (HUST), China);*
- 09:40 A Novel Wide-angle Beam Propagation Algorithm  
*Dusan Z. Djurdjevic (University of Pristina, Serbia);*
- 10:00 Influence of Geometric Parameters on the SOI Race-track Resonator Properties  
*Petar S. Matavulj (University of Belgrade, Serbia); Tatjana Keča (ICT College of Vocational Studies, Serbia);*
- 10:20 Formation Mechanism and Applications of Laser Induced Elemental Distribution in Glasses  
*Kiyotaka Miura (Kyoto University, Japan); Masahiro Shimizu (Kyoto University, Japan); Masaaki Sakakura (Kyoto University, Japan); T. Kurita (Kyoto University, Japan); Yasuhiko Shimotsuma (Kyoto University, Japan); Kazuyuki Hirao (Kyoto University, Japan);*
- 10:40 **Coffee Break**
- 11:00 Effect of Gap Shape on the Spectral Response and Field Enhancement of Dimer-based Biosensor  
*Sameh Kessentini (University of Technology of Troyes, France); Dominique Barchiesi (University of Technology of Troyes, France);*

- 11:20 Periodically Gated Two-dimensional Electron System: Tunable Planar Plasmonic Crystal at Terahertz Frequencies  
*Vyacheslav V. Popov (Kotelnikov Institute of Radio Engineering and Electronics, Russia);*
- 11:40 Rare Earth Doping into Wide Bandgap Semiconductors for Photonic Applications  
*Abdul Majid (Quaid-i-Azam University, Pakistan);*

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### Session 1A2

#### Active Metamaterials

Monday AM, August 20, 2012

#### Room B

Organized by Andrey N. Lagarkov, Andrey K. Sarychev

Chaired by Andrey N. Lagarkov, Andrey K. Sarychev

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- 08:40 Artificial Neural Network Model for MNG-Metamaterial Spiral Resonator  
*R. Pandeewari (National Institute of Technology, India); Singaravelu Raghavan (National Institute of Technology, India); Amrit Krishnan (National Institute of Technology, India); Priyank Jain (National Institute of Technology, India);*
- 09:00 Guiding Behavior of a Periodic Subwavelength Metallic Domino Array  
*Yao-Huang Kao (Chung-Hua University, Taiwan, R.O.C.); D. J. Hou (Chung Hua University, Taiwan); Tzong-Jer Yang (Chung-Hua University, Taiwan, R.O.C.); J. J. Wu (Chung Hua University, Taiwan);*
- 09:20 General Method for Modeling Nonlinear Waves in Layered Structures of Different Physical Nature Including Bi-anisotropic and Active Metamaterials  
*Yuriy Grigorievich Rapoport (Taras Shevchenko National University of Kyiv, Ukraine);*

- 09:40 Wave Processes and New Effects in Hyperbolic and Chiral Nonlinear and Active Metamaterials  
*Allan Dawson Boardman (The University of Salford, UK); Volodymyr V. Grimalsky (Autonomous University of State Morelos (UAEM), Mexico); Yuriy Grigorievich Rapoport (Taras Shevchenko National University of Kyiv, Ukraine); N. A. Kalinich (Kyiv Taras Shevchenko National University, Ukraine);*
- 10:00 Hydrodynamical Approach to Linear and Nonlinear Laser Excitation of the Collective Electron Motion in Metal Nanoparticles with General Shape  
*Sergey V. Fomichev (NRC "Kurchatov Institute", Russia); Alexander B. Bratkovsky (Hewlett Packard Labs, USA);*
- 10:20 Plasmonic Devices for Enhanced Raman Sensors and Other Applications  
*Alexander M. Bratkovsky (Hewlett Packard Laboratories, USA);*
- 10:40 **Coffee Break**
- 11:00 A Compact Split Ring Resonator Loaded Antenna  
*R. Pandeeswari (National Institute of Technology, India); Singaravelu Raghavan (National Institute of Technology, India); Keloth Ramesh (National Institute of Technology, India);*
- 11:20 Radiation of Chiral Molecule near Chiral Nanostructure  
*Vasily V. Klimov (Lebedev Physical Institute, Russian Academy of Sciences, Russia); D. V. Guzатов (Lebedev Physical Institute, Russia); I. V. Zabkov (Moscow Institute of Physics and Technology, Russia);*
- 11:40 Luminescence in Plasmonic Antennas and Nanolasing  
*A. Bogdanov (San Jose Research Center, USA); I. Fedorov (Moscow Institute of Physics and Technology, Russia); Andrey N. Lagarkov (Institute for Theoretical and Applied Electromagnetics, Russian Academy of Sciences, Russia); Gennady Tartakovsky (Advanced Systems & Technologies, Inc., USA); Andrey K. Sarychev (Institute of Theoretical and Applied Electrodynamics, Russia);*
- 12:00 Spaser-effect for Loss Compensation in Metamaterials  
*Alexey P. Vinogradov (Institute for Theoretical and Applied Electromagnetics of the Russian Academy of Sciences, Russia); E. S. Andrianov (ITAE RAS, Russia); Alexander A. Pukhov (Institute of Theoretical and Applied Electrodynamics RAS, Russia); Alexander V. Dorofeenko (Institute for Theoretical and Applied Electromagnetics of the Russian Academy of Sciences, Russia); Alexander A. Lisyansky (The City University of New York, USA);*
- 12:20 Dynamical Metamorphoses in Arrays of Nonlinear Plasmonic Nanoparticles  
*Roman E. Noskov (St. Petersburg University of Information Technologies, Mechanics and Optics (ITMO), Russia); Pavel A. Belov (Queen Mary University of London, UK); Yuri S. Kivshar (Australian National University, Australia);*
- 
- Session 1A3**  
**Theory and Methods of Digital Signal and Image Processing 1**
- 
- Monday AM, August 20, 2012**  
**Room C**  
Organized by Victor Filippovich Kravchenko  
Chaired by Victor Filippovich Kravchenko
- 
- 09:00 WA-systems of Functions in Reconstruction and Visualization of 2D and 3D Images  
*Victor Filippovich Kravchenko (Kotel'nikov Institute of Radio Engineering and Electronics of RAS, Russian Federation); Dmitry V. Churikov (Kotel'nikov Institute of Radio Engineering and Electronics, Russian Federation); Volodymyr I. Ponomaryov (National Polytechnic Institute of Mexico, Mexico); Hector M. Perez-Meana (National Polytechnic Institute of Mexico, Mexico);*
- 09:20 Nonparametric Estimations of Probability Density Functions Based on the Family of Atomic Functions  $ch_{a,n}(\mathbf{x})$  in Problems of Digital Signal Processing  
*Victor Filippovich Kravchenko (Kotel'nikov Institute of Radio Engineering and Electronics of Kotel'nikov Institute of Radio Engineering and Electronics, Russia); Yaroslav Yu. Konovalov (Bauman Moscow State Technical University, Russia); Dmitry V. Churikov (Kotel'nikov Institute of Radio Engineering and Electronics, Russian Federation);*
- 09:40 Statistical Synthesis of Optimal and Quasi-optimal Chopper Radiometers  
*Victor Filippovich Kravchenko (Kotel'nikov Institute of Radio Engineering and Electronics of RAS, Russian Federation); Valeriy K. Volosyuk (National Aerospace University, Ukraine); Vladimir V. Pavlikov (National Aerospace University "Kharkiv Aviation Institute, Ukraine);*



- 10:00 Maximum Permissible Values of Biometric Code Bits Correlation  
*Viktor Bezyaev (Public Corporation “Research and Production Enterprise “Rubin”, Russia); Igor Serikov (Public Corporation “Research and Production Enterprise “Rubin”, Russia); Aleksey Kruchinin (Public Corporation “Research and Production Enterprise “Rubin”, Russia); Nikolay Ivanushchak (Public Corporation “Research and Production Enterprise “Rubin”, Russia); Maksim Sekretov (Public Corporation “Penza Research Electrical Engineering Institute”, Russia);*
- 10:20 On the Issue of Modeling Long Biometric Codes with Dependent Bit States  
*Viktor Bezyaev (Public Corporation “Research and Production Enterprise ‘Rubin’”, Russia); Igor Serikov (Public Corporation “Research and Production Enterprise ‘Rubin’”, Russia); Alexander Ivanov (Penza Research Electrical Engineering Institute, Russia); Ivan Urnev (Penza State University, Russia); Aleksey Kruchinin (Public Corporation “Research and Production Enterprise ‘Rubin’”, Russia); Nikolay Ivanushchak (Public Corporation “Research and Production Enterprise ‘Rubin’”, Russia);*
- 10:40 **Coffee Break**
- 11:00 Statistical Description of Output States of the Neural Network “Biometrics-code” Transformers  
*Alexander Ivanov (Penza Research Electrical Engineering Institute, Russia); Bakhydzhan Akhmetov (Institute of Information and Telecommunication Technologies, Republic of Kazakhstan); Vyacheslav Funtikov (Penza Research Electrical Engineering Institute, Russia); Alexander Malygin (Penza State University, Russia); Ivan Urnev (Penza State University, Russia);*
- 11:20 Evaluation of Multidimensional Entropy on Short Strings of Biometric Codes with Dependent Bits  
*Vyacheslav Funtikov (Penza Research Electrical Engineering Institute, Russia); Bakhydzhan Akhmetov (Institute of Information and Telecommunication Technologies, Republic of Kazakhstan); Alexander Ivanov (Penza Research Electrical Engineering Institute, Russia); Ivan Urnev (Penza State University, Russia);*
- 11:40 Information-telecommunication System with Multi-biometric Protection of User’s Personal Data  
*Vladimir Volchikhin (Penza State University, Russia); Alexander Ivanov (Penza Research Electrical Engineering Institute, Russia); Ivan Urnev (Penza State University, Russia); Alexander Malygin (Penza State University, Russia);*
- 12:00 Optimum Algorithm of Formation of Radar-tracking Images in CW SAR  
*Andrey Alekseevich Prilutskiy (JSC “Research-and-production complex Scientific Research Institute of Long Distance Radiocommunication”, Russia); Alexander Nikolaevich Detkov (JSC “Research-and-production complex Scientific Research Institute of Long Distance Radiocommunication”, Russia); Dmitry Anatol’evich Nitsak (JSC “Research-and-production complex Scientific Research Institute of Long Distance Radiocommunication”, Russia);*
- 12:20 Wavelet-based Human Synthetic Movement Recognition in Sterile Zone Scenario  
*Ioannis Kypraios (ICTM, UK);*
- 
- Session 1A4**  
**Patch Antenna and Array**
- 
- Monday AM, August 20, 2012**  
**Room D**  
 Organized by Dau-Chyrh Chang  
 Chaired by Dau-Chyrh Chang, Nam Kim
- 
- 09:00 Design and Manufacturing of a Dual-band, Dual-polarized and Dual Fed Perforated Array Patch Antenna Pair  
*T. D. Sudikila (Royal Military Academy, Belgium); Thierry E. Gilles (Ecole Royale Militaire, Laboratoire d’Electromagnétisme Appliqué (LEMA), Belgium);*
- 09:20 Dual-frequency, Two Shorting Pin-loaded Equilateral Triangular Patch Antennas  
*Sultan Can (Atilim University, Turkey); Kamil Yavuz Kapusuz (Atilim University, Turkey); Elif Aydin (Atilim University, Turkey);*
- 09:40 Design of Monopole Antenna Using Coupling Characteristic of Spiral Parasitic Patch  
*Kwangyeol Yoon (Chungbuk National University, Korea); Seungwoo Lee (Chungbuk National University, Korea); Nam Kim (Chungbuk National University, South Korea);*
- 10:00 Design of the Dual-band Planner Monopole Antenna for Coupled Rectangular-loop Structure and T-shape Rectangular Patch  
*Judong Jang (Chungbuk National University, Korea); Seung Woo Lee (Chungbuk National University, South Korea); Nam Kim (Chungbuk National University, South Korea);*

- 10:20 Design and Relative Permittivity Determination of an EBG-based Wearable Antenna  
*Nadeen R. Rishani (American University of Beirut, Lebanon); Mohammed Al-Husseini (American University of Beirut, Lebanon); Ali El-Hajj (American University of Beirut, Lebanon); Karim Y. Kabalan (American University of Beirut, Lebanon);*
- 10:40 **Coffee Break**
- 11:00 Antenna Array for IEEE 802.11/a/b MIMO Application  
*Dau-Chyrh Chang (Oriental Institute of Technology, Taiwan, R.O.C.); Yi-Jhen Li (Oriental Institute of Technology, Taiwan, R.O.C.); Chao-Hsiang Liao (Oriental Institute of Technology, Taiwan, R.O.C.);*
- 11:20 Analysis of a Dual Frequency Circular Patch Antenna  
*Sultan Can (Atilim University, Turkey); Kamil Yavuz Kapusuz (Atilim University, Turkey); Elif Aydin (Atilim University, Turkey);*
- 11:40 Design and Simulation of E-shaped Compact Microstrip Antenna for WLAN Applications  
*Mahmoud Abdipour (Islamic Azad University, Iran); Gholamreza R. Moradi (Amirkabir University of Technology, Iran); Reza Sarraf Shirazi (Amirkabir University of Technology, Iran);*
- 12:00 A Compact Ultra Wideband EBG Antenna with Band Notched Characteristics  
*Singaravelu Raghavan (National Institute of Technology, India); Chittipothul Anandakumar (National Institute of Technology, India); Akkala Subbarao (National Institute of Technology, India); M. Ramaraj (National Institute of Technology, India); R. Pandeeswari (National Institute of Technology, India);*
- 09:20 Space Curve Type Distributions with Applications in Electromagnetic Theory  
*Burak Polat (Trakya University, Turkey);*
- 09:40 Eigenanalysis of Arbitrarily Shaped 2-D and 3-D Closed and Open-Radiating Structures: A Review  
*G. A. Kyriacou (Democritus University of Thrace, Greece); P. C. Allilomes (Democritus University of Thrace, Greece); C. S. Lavranos (Democritus University of Thrace, Greece); C. L. Zekios (Democritus University of Thrace, Greece); S. J. Lavdas (Democritus University of Thrace, Greece); A. V. Kudrin (University of Nizhny Novgorod, Russia);*
- 10:00 Energetic Wave Processes Concomitant Propagation of the Time-Domain Modal Waves  
*Oleg A. Tretyakov (Gebze Institute of Technology, Turkey); Mehmet Kaya (Gebze Institute of Technology, Turkey);*
- 10:20 A Novel Time Reversal Imaging of Cylindrical Objects  
*Toshifumi Moriyama (Nagasaki University, Japan); Takashi Takenaka (Nagasaki University, Japan);*
- 10:40 **Coffee Break**
- 11:00 Guaranteed Estimates of Functionals from Solutions and Right-hand Sides of Maxwell Equations under Uncertainties  
*Yuri Podlipenko (Kiev National University, Ukraine); Yury V. Shestopalov (Karlstad University, Sweden);*
- 11:20 A CIP-BS Implementation for Inhomogeneous Media  
*Yoshiaki Ando (The University of Electro-Communications, Japan); Yusuke Takahashi (The University of Electro-Communications, Japan);*
- 11:40 A Nonlinear Layered Structure and the Eigen Oscillations of the Linearised Problems near the Frequencies of Scattering and Generation  
*L. Angermann (Institute of Mathematics, Germany); Vasyl V. Yatsyk (Usikov Institute of Radiophysics and Electronics of the National Academy of Sciences of Ukraine (IRE NASU), Ukraine); M. V. Yatsyk (Kharkov National University of Radio Electronics, Ukraine);*
- 12:00 Introducing Clifford Analysis as the Natural Tool for Electromagnetic Research  
*Ghislain R. Franssens (Belgian Institute for Space Aeronomy, Belgium);*
- 12:20 Generation of Large-scale EM Simulation Scenarios from Mechanical CAD Models  
*Piotr Lukasik (QWED Sp. Z O.O., Poland); Andrzej Wieckowski (QWED Sp. Z O.O., Poland); Malgorzata Celuch (Warsaw University of Technology, Poland); Bartlomiej Salski (Warsaw University of Technology, Poland);*

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**Session 1A5**

**Novel Mathematical Methods in Electromagnetics 1**

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**Monday AM, August 20, 2012**

**Room E**

Organized by Kazuya Kobayashi, Yury V. Shestopalov

Chaired by Kazuya Kobayashi, Yury V. Shestopalov

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- 09:00 *Ab initio* Method for Calculating the Electric Multipole Moments of Diatomic Molecules at Small Inter-nuclear Separations  
*Elena Vladimirovna Koryukina (Tomsk State University, Russia);*

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**Session 1A6a**
**Nonlinear Electromagnetic Problems**


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**Monday AM, August 20, 2012**
**Room F**

Organized by Yury G. Smirnov, Evgeny M. Karchevskiy

 Chaired by Yury G. Smirnov, Evgeny M. Karchevskiy

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- 08:40 Numerical Technique to Calculate Propagation Constants for the Problem of Polarized Wave Propagation in a Layer with Nonlinear Permittivity  
*Dmitry V. Valovik (Penza State University, Russia); Ekaterina V. Zarembo (Penza State University, Russia);*
- 09:00 Electromagnetic TE Wave Propagation in Nonlinear Layered Waveguide Structures. Computational Approach to Determine Propagation Constants  
*Dmitry V. Valovik (Penza State University, Russia);*
- 09:20 Electromagnetic Wave Diffraction on the Conducting Thin Screen Placed on the Isotropic and Anisotropic Media Interface  
*A. F. Bourganov (Kazan Federal University, Russian Federation); Evgeny M. Karchevskiy (Kazan Federal University, Russia); Nikolai B. Pleshchinskii (Kazan State University, Russia);*
- 09:40 Parallel Algorithm of Solving the Electromagnetic Wave Diffraction Problem on the Spherical Screen  
*Evgeny M. Karchevskiy (Kazan Federal University, Russia); Nikolai B. Pleshchinskii (Kazan State University, Russia);*
- 10:00 Integral Equation Methods in Optical Waveguide Theory  
*Anatoly Serafimovich Il'inskii (Lomonosov Moscow State University, Russia); Evgeny M. Karchevskiy (Kazan Federal University, Russia);*
- 10:20 TM Wave Propagation in a Cylindrical Waveguide with Kerr Nonlinearity  
*Yury G. Smirnov (Penza State University, Russia);*
- 10:40 **Coffee Break**

- 11:00 On Rayleigh and Mie Theory  
*Jerald W. Caruthers (University of Southern Mississippi, USA);*
- 11:20 Paradoxes in Laser Heating of Nanoparticles  
*Michael I. Tribelsky (M. V. Lomonosov Moscow State University, Russia); Boris S. Luk'yanchuk (Data Storage Institute, Singapore); Andrey E. Miroshnichenko (Australian National University, Australia); Yuri S. Kivshar (Australian National University, Australia); A. R. Khokhlov (M. V. Lomonosov Moscow State University, Russia);*
- 11:40 Millimetre-wave Sea Clutter at Low Depression Angles  
*Helmut Essen (Maxonic GmbH, Germany); Andreas Danklmayer (Fraunhofer Institute for High Frequency Physics and Radar Techniques (FHR), Germany); Gregor Biegel (Fraunhofer Institute for High Frequency Physics and Radar Techniques, Germany);*
- 12:00 Millimetre-wave Propagation in Atlantic and Tropical Environment  
*Helmut Essen (Maxonic GmbH, Germany); Andreas Danklmayer (Fraunhofer Institute for High Frequency Physics and Radar Techniques (FHR), Germany); Gregor Biegel (Fraunhofer Institute for High Frequency Physics and Radar Techniques, Germany); Stefan Sieger (Fraunhofer Institute for High Frequency Physics and Radar Techniques, Germany); Sebastian Hantscher (Fraunhofer Institute for High Frequency Physics and Radar Techniques, Germany);*
- 12:20 Recent Activities in the Area of mmW-signals Propagation Research with Respect to the Maritime Boundary Layer  
*Andreas Danklmayer (Fraunhofer Institute for High Frequency Physics and Radar Techniques (FHR), Germany); Helmut Essen (Fraunhofer Institute for High Frequency Physics and Radar Techniques, Germany); Gregor Biegel (Fraunhofer-FHR, Germany); Joerg Foerster (Fed Armed Forces Underwater & Marine Geophys Res, Germany); M. Behn (Technical Center for Ships and Naval Weapons, Germany); Y. Hurtaud (DGA/MI, France); Laurent Castanet (ONERA, France); Vincent Fabbro (ONERA, France);*

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**Session 1A6b**
**Scattering, Diffraction, and Inverse Scattering**


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**Monday AM, August 20, 2012**
**Room F**

 Chaired by Andreas Danklmayer

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**Session 1A7**
**Extended/Unconventional Electromagnetic Theory, EHD(Electrohydrodynamics)/EMHD(Electro-magneto-hydrodynamics), and Electro-biology**  
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**Monday AM, August 20, 2012**
**Room G**

Organized by Eva Gescheidtová

 Chaired by Ing. Radek Kubasek, Jan Mikulka
 

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- 08:40 X-ray Image Processing in Studying Jawbone Tissues  
*Jan Mikulka (Brno University of Technology, Czech Republic); Miroslav Kabrda (Brno University of Technology, Czech Republic);*
- 09:00 Sensors and Experimental Model Verification on HV Transformers Measurement  
*Petr Drexler (Brno University of Technology, Czech Republic); Pavel Fiala (Brno University of Technology, Czech Republic); Martin Friedl (Brno University of Technology, Czech Republic); Petr Marccon (Brno University of Technology, Czech Republic); Miloslav Steinbauer (Brno University of Technology, Czech Republic); Zoltán Szabó (Brno University of Technology, Czech Republic); Michal Hadinec (Brno University of Technology, Czech Republic);*
- 09:20 Quantum Hydrodynamics of Charge Carriers in Graphene  
*Pavel Aleksandrovich Andreev (Moscow State University, Russian Federation);*
- 09:40 Microscopic Classic Hydrodynamic and Methods of Averaging  
*L. S. Kuzmenkov (Moscow State University, Russian Federation); Pavel Aleksandrovich Andreev (Moscow State University, Russian Federation);*
- 10:00 Building NMR/NQR Spectrometer  
*Ing. Radek Kubasek (Brno University of Technology, Czech Republic); Mouin Alkhaddour (Brno University of Technology, Czech Republic);*
- 10:20 Magnetic Flux Density Reconstruction Method  
*Michal Hadinec (Brno University of Technology, Czech Republic);*
- 10:40 **Coffee Break**
- 11:00 Self-consistent Electrodynamics  
*Konstantin Meyl (Furtwangen University, Germany);*

- 11:20 Low-level Measurement of Electric Field Intensity  
*Pavel Fiala (Brno University of Technology, Czech Republic); Martin Friedl (Brno University of Technology, Czech Republic); Jan Mikulka (Brno University of Technology, Czech Republic);*
- 11:40 Utilization of Digital Potentiometers in ARC Filter Re-tuning  
*Ing. Zoltán Szabó (Brno University of Technology, Czech Republic); Jirí Sedláček (Brno University of Technology, Czech Republic);*
- 12:00 Image Reconstruction by EIT Utilizing Magnetic Field  
*Tomáš Kříž (Brno University of Technology, Czech Republic); Jarmila Dědková (Brno University of Technology, Czech Republic);*
- 12:20 The Influence of Magnetic Field on the Dew Point of Tissue Culture  
*Michaela Pokludová (Brno University of Technology, Czech Republic); Eliska Hutová (Brno University of Technology, Czech Republic);*

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**Session 1P1a**
**Modelling of Electromagnetic Structures: Application to Electrical Machines**


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**Monday PM, August 20, 2012**
**Room A**

Organized by Lilia El Amraoui-Ouni

 Chaired by Lilia El Amraoui-Ouni
 

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- 14:00 Analysis of Rotor Winding Self-inductance of Synchronous Machines Under Air-gap Asymmetries  
*Homayoun Meshgin-Kelk (Tafresh University, Iran); Hourieh Mirmoeini Kerahroudi (Tafresh University, Iran); Aboulghasem Hashemi (Tafresh University, Iran);*
- 14:20 Optimal Design Approaches for Linear Tubular Actuators  
*Imen Amdouni (Ecole Nationale d'Ingénieurs de Tunis, Tunisia); Lilia El Amraoui-Ouni (Ecole supérieure de Technologie et d'Informatique, Tunisia); F. Gillon (Univ. Lille Nord de France, France); Mohamed Benrejeb (Ecole Nationale d'Ingénieurs de Tunis, Tunisia); P. Brochet (Univ. Lille Nord de France, France);*
- 14:40 Analysis of Contactless Power Transfer Systems for Maglev  
*S. Hasanzadeh (University of Tehran, Iran); Sadegh Vaez-Zadeh (University of Tehran, Iran);*

- 15:00 Optimum Design of an Active Magnetic Bearing System  
*Arman Ramazan-Nejad (Tafresh University, Iran); Homayoun Meshgin-Kelk (Tafresh University, Iran); Mahsa Rahmati (Tafresh University, Iran);*
- 15:20 Dynamic Modeling of Tubular PM Linear Synchronous Actuator Using Multimodal Interpolation of 3D Finite Element Results  
*Ines Ben Salem (Ecole Nationale d'ingénieurs de Tunis, Tunisia); Lilia El Amraoui-Ouni (Ecole Supérieure de Technologie et d'Informatique, Tunisia);*
- 15:40 Branch-and-bound Technics in the Problems of Optimal Design of Induction Machines  
*Dmitry Samarkanov (Ecole Centrale de Lille, France); Frederic Gillon (Univ. Lille Nord de France, France); Pascal Brochet (Univ. Lille Nord de France, France); Daniel Laloy (Jeumont Electric, France); Daniel Laloy (Jeumont Electric, France);*
- 16:00 **Coffee Break**

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### Session 1P2a

#### Microwave Processing of Materials Recent Advances in Modeling and Experimentation

Monday PM, August 20, 2012

#### Room B

Organized by Vadim V. Yakovlev

Chaired by Vadim V. Yakovlev

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- 13:40 Advanced Computer Modeling for Microwave Power Engineering — State of the Art  
*Malgorzata Celuch (Warsaw University of Technology, Poland); Vadim V. Yakovlev (Worcester Polytechnic Institute, USA);*
- 14:00 A New Modeling Technique for Processes of Hybrid Heating by Microwaves and Thermal Radiation  
*Pawel Kopyt (Warsaw University of Technology, Poland); Vadim V. Yakovlev (Worcester Polytechnic Institute, USA);*
- 14:20 Microwave Processing of Nanoporous Carbons with Tailored Properties  
*Ana Arenillas (Instituto Nacional del Carbón-CSIC, Spain); J. Ángel Menendez (Instituto Nacional del Carbón, CSIC, Spain);*
- 14:40 Modeling-based Technique for 3-D Microwave Imaging of Dielectric Samples in Closed Systems  
*Alexander V. Brovko (Saratov State Technical University, Russia); Ethan K. Murthy (Applied Mathematics, Inc., USA); Vadim V. Yakovlev (Worcester Polytechnic Institute, USA);*

- 15:00 Inexpensive Microwave Q-Meter for Precise Dielectric Measurements with Split-post Dielectric Resonators  
*Przemysław Korpas (Warsaw University of Technology, Poland); Wojciech Wojtasiak (Warsaw University of Technology, Poland); Jerzy Krupka (Warsaw University of Technology, Poland); Lukasz Usydus (Central Office of Measures, Poland); Malgorzata Celuch (Warsaw University of Technology, Poland); Bartłomiej Salski (Warsaw University of Technology, Poland);*
- 15:20 A Wide-band Microwave Absorber Based on a Cellular Slab  
*Marzena Olszewska (QWED Sp. z o.o., Poland); Wojciech Gwarek (QWED Sp. z o.o., Poland); Malgorzata Celuch (Warsaw University of Technology, Poland); Bartłomiej Salski (Warsaw University of Technology, Poland);*
- 15:40 Geometrical Model of a Resonance as One of the Basic Means of Strengthening of Signals  
*Shiyanov Boris Anatolyevich (International Institute of Computer the Technologies, Russia); Shiyanov Anatoliy Ivanovich (International Institute of Computer the Technologies, Russia); Krutov Alexey Vasilyevich (International Institute of Computer the Technologies, Russia);*

16:00 **Coffee Break**

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### Session 1P3a

#### Theory and Methods of Digital Signal and Image Processing 2

Monday PM, August 20, 2012

#### Room C

Organized by Victor Filippovich Kravchenko

Chaired by Victor Filippovich Kravchenko

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- 14:00 New Constructions of Kravchenko-Poisson Wavelets and Their Applications for Digital Signal Processing  
*Merey S. Sautbekova (Eurasian National University Named after L.N. Gumilyov, Kazakhstan); Seil S. Sautbekov (Eurasian National University Named after L.N. Gumilyov, Kazakhstan);*
- 14:20 Application of WA-functions of Distribution of Kravchenko-Rvachev for Digital Signal Processing  
*Merey S. Sautbekova (Eurasian National University Named after L.N. Gumilyov, Kazakhstan); Seil S. Sautbekov (Eurasian National University Named after L.N. Gumilyov, Kazakhstan);*

- 14:40 Embedded Object Detection by Using Planar Antenna Measurement System  
*Osman Kurnaz (Akdeniz University, Turkey); Selçuk Helhel (Akdeniz University, Turkey); Sükrü Özen (Akdeniz University, Turkey);*
- 15:00 Electromagnetic Object Recognition for Dielectric Coated Conductors Based on WD-PCA Type Fused Feature Extraction  
*Gonul Turhan-Sayan (Middle East Technical University, Turkey); Emre Ergin (Middle East Technical University, Turkey);*
- 15:20 Cross Validation Technique Selection of Features Extraction Methods for UWB Radar Target Classification  
*Mahmoud Khodjet-Kesba (LASMEA UMR 6602 UBP/CNRS, France); Khalil El Khamlichi Drissi (Blaise Pascal University, France); C. Faure (Université Blaise Pascal, LASMEA, France); Christophe Pasquier (Blaise Pascal University, France);*
- 16:00 **Coffee Break**

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**Session 1P4a  
Small Size Antenna**

**Monday PM, August 20, 2012**

**Room D**

Organized by Dau-Chyrh Chang

Chaired by Philipp K. Gentner, Dau-Chyrh Chang

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- 13:40 A New Small and Low-cost Wideband PIFA with Corrugations Based on Digital Dividend  
*Christos D. Nikolopoulos (National Technical University of Athens, Greece); K. D. Stravoskoufis (National Technical University of Athens, Greece); Christos N. Capsalis (National Technical University of Athens, Greece);*
- 14:00 Accurate Measurement of Power Transfer to an RFID Tag with On-chip Antenna  
*Philipp K. Gentner (Vienna University of Technology, Austria); Günter Hofer (Infineon Technologies Austria AG, Contactless and RF Exploration, Austria); Arpad L. Scholtz (Vienna University of Technology, Austria); Christoph F. Mecklenbräucker (Vienna University of Technology, Austria);*

- 14:20 A Reduced-size Antipodal Vivaldi Antenna with a Reconfigurable Band Notch  
*Lise Safatly (American University of Beirut, Lebanon); Mohammed Al-Husseini (American University of Beirut, Lebanon); Ali El-Hajj (American University of Beirut, Lebanon); Karim Y. Kabalan (American University of Beirut, Lebanon);*
- 14:40 Effect of Small Size Antenna inside Complex PCB  
*Dau-Chyrh Chang (Oriental Institute of Technology, Taiwan, R.O.C.); Cheng-Wei Chen (Oriental Institute of Technology, Taiwan); Hsiao-Bin Liang (Climax Technology Co., Ltd., Taiwan); Chi-Hsiung Wang (Climax Technology Co., Ltd., Taiwan); Tsan-Hung Wu (Climax Technology Co., Ltd., Taiwan);*
- 15:00 An Evaluation of Capacitive Feed Methods for Electrically Small and Low-profile Meander Line Antennas  
*Takeshi Fukusako (Kumamoto University, Japan); Yoshiya Saito (Kumamoto University, Japan); Hiroyuki Maema (Kumamoto University, Japan);*
- 15:20 Broadband Circularly Polarized Moxon Based Antennae for RFID and GPS  
*Haojiong Liu (New Jersey Institute of Technology, USA); Oksana Manzhura (New Jersey Institute of Technology, USA); Ibrahim Tekin (Sabanci University, Turkey); Edip Niver (New Jersey Institute of Technology, USA);*
- 15:40 Bended Rectangular Slotted Waveguide Antenna  
*Dana Baz Radwan (American University of Science & Technology, Lebanon); Ali Houssein Harmouch (Lebanese University, Lebanon); Mustapha Zizade (Lebanese University, Lebanon);*

16:00 **Coffee Break**

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**Session 1P5a  
Novel Mathematical Methods in  
Electromagnetics 2**

**Monday PM, August 20, 2012**

**Room E**

Organized by Kazuya Kobayashi, Yury V. Shestopalov

Chaired by Kazuya Kobayashi, Yury V. Shestopalov

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- 14:00 Leaky Wave Radiation for Body-centric Wireless Communications  
*Xenofon M. Mitsalal (Democritus University of Thrace, Greece); Alexander V. Kudrin (University of Nizhny Novgorod, Russia); George A. Kyriacou (Democritus University of Thrace, Greece);*

- 14:20 Full Wave Maxwell's Equations Solver EMWSolver3D  
A. P. Smirnov (*Lomonosov Moscow State University, Russia*); A. N. Semenov (*Lomonosov Moscow State University, Russia*);
- 14:40 FDTD Numerical Simulation of Waveguide with Non-uniform Dielectric Media  
A. P. Smirnov (*Lomonosov Moscow State University, Russia*); A. N. Semenov (*Lomonosov Moscow State University, Russia*); Yury V. Shestopalov (*Karlstad University, Sweden*);
- 15:00 Fast Analysis of Multiscale Geometries with RWG Moment Method Accelerated via Barnes-Hut Algorithm for Helmholtz Kernel  
K. Butt (*University of Manitoba, Canada*); Vladimir Okhmatovski (*University of Manitoba, Canada*);
- 15:20 New Mathematical Model and Measurement Scheme of Electrical Tomography and Its Fast Resolution by General Ray Method  
Alexandre Grebennikov (*Benemérita Universidad Autónoma de Puebla, México*);
- 16:00 **Coffee Break**

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**Session 1P6a**

**Nano Scale Electromagnetics, MEMS 2**

**Monday PM, August 20, 2012**

**Room F**

Organized by Xiufeng Han

Chaired by Xiufeng Han

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- 14:00 Effect on Transmissivity of Interaction between Sub-wavelength Slits  
Huai-Yu Wang (*Tsinghua University, China*); Fei-Fei Wei (*Capital Normal University, China*); Yun-Song Zhou (*Capital Normal University, China*);
- 14:20 Magnetodielectric Effect from the Onset of Ferrimagnetic Transition in  $\text{CoCr}_2\text{O}_4$   
Sen Yang (*Xi'an Jiaotong University, China*); Xiaoping Song (*Xi'an Jiaotong University, China*);
- 14:40 An Approach of Chain of Ellipsoid-rings to Magnetic Nanotubes  
Sen Yang (*Xi'an Jiaotong University, China*); Xiaoping Song (*Xi'an Jiaotong University, China*); Zhanbo Sun (*Xi'an Jiaotong University, China*); Zhimao Yang (*Xi'an Jiaotong University, China*); Bingjun Ding (*Xi'an Jiaotong University, China*);

- 15:00 Silver Nanoparticles Assembly under an External Magnetic Field  
Zhimao Yang (*Xi'an Jiaotong University, China*); Yunxia Zhang (*Xi'an Jiaotong University, China*); Zhanbo Sun (*Xi'an Jiaotong University, China*); Bingjun Ding (*Xi'an Jiaotong University, China*); Xiaoping Song (*Xi'an Jiaotong University, China*);
- 15:20 Nanoring or Nano-elliptic-ring Shaped Magnetic Tunneling Junctions and Their Typical Applications in STT-MRAM Design  
Xiufeng Han (*Institute of Physics, Chinese Academy of Sciences, China*);
- 15:40 Possible Ferromagnetism in Li, Na and K-doped AlN: A First-principles Study  
Ruilin Han (*Jilin University, China*); Yu Yan (*Jilin University, China*);

16:00 **Coffee Break**

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**Session 1P7a**

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

**2**

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**Monday PM, August 20, 2012**

**Room G**

Organized by Eva Gescheidtová

Chaired by Ing. Radek Kubasek, Jan Mikulka

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- 14:20 Noise Influence of Magnetic Field to Conductivity Image Reconstruction  
Tomáš Kríž (*Brno University of Technology, Czech Republic*);
- 14:40 Electric and Magnetic Components of Waves on the Interface  
Radim Kadlec (*Brno University of Technology, Czech Republic*); Eva Kroutilová (*Brno University of Technology, Czech Republic*); Pavel Fiala (*Brno University of Technology, Czech Republic*);
- 15:00 Measurement of Electric Potential on Biological Objects  
Zoltán Szabó (*Brno University of Technology, Czech Republic*); Eva Kroutilová (*Brno University of Technology, Czech Republic*); M. Janíček (*Brno University of Technology, Czech Republic*);
- 15:20 Mixed Signal Processing for Cable Diagnostics  
Michal Hadinec (*Brno University of Technology, Czech Republic*);

16:00 Coffee Break

16:00 Coffee Break

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**Session 1P8a**
**The Electrodynamics of Inhomogeneous Media and Gradient Metamaterials 1**


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**Monday PM, August 20, 2012**
**Room H**

Organized by Nikolay S. Erokhin, Alexander Borisovich Shvartsburg

 Chaired by Victor G. Veselago, Alexander Borisovich Shvartsburg
 

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- 14:00 Negative Refraction, Light Pressure and Attraction, Equation  $\mathbf{E} = m\mathbf{c}^2$ , and Wave-particle Dualism  
*Victor G. Veselago (A. M. Prokhorov General Physics Institute, Russian Academy of Sciences, Russian);*
- 14:20 Light Scattering from Nanostructured Media  
*Gerard Berginc (THALES, France);*
- 14:40 Bose Einstein Condensation (BEC) of Photons in the Infrared (IR)  
*F. Tito Arcelli (Università di Firenze, Italy);*
- 15:00 Technological Aspects of Obtaining Gradient Optical Metamaterial  
*O. D. Volpian (Federal State Unitary Enterprise "M. F. Stelmakh Research & Development Institute — Polyus", Russian Federation); A. I. Kuzmichev (National Technical University, Ukraine); Yu. A. Obod (Scientific-Manufacturing Enterprise "Fotron-Auto Ltd.", Russian Federation);*
- 15:20 Transillumination of Gradient Barriers for Modulated Electromagnetic Wave in the Inhomogeneous Plasmas. The Exact Solution  
*Nikolay S. Erokhin (Space Research Institute of RAS, Russia); E. S. Merkulov (I.A. Bunin Elets State University, Russia); M. V. Poverenyi (I.A. Bunin Elets State University, Russia);*
- 15:40 Formation of the Bidomain Structure in Lithium Niobate Single Crystals  
*Dmitry A. Kiselev (National University of Science and Technology "MISiS", Russia); Roman N. Zhukov (National University of Science and Technology "MISiS", Russia); Alexandr S. Bykov (National University of Science and Technology "MISiS", Russia); Mikhail D. Malinkovich (National University of Science and Technology "MISiS", Russia); Yuriy N. Parkomenko (National University of Science and Technology "MISiS", Russia);*

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**Session 1P9**
**Poster Session 1**


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**Monday PM, August 20, 2012**
**14:30 PM - 17:30 PM**
**Room K**


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- 1 Measurers' Exposure to Extremely Low Frequency Magnetic Fields at 400kV Substations  
*Leena Korpinen (Tampere University of Technology, Finland); Harri Kuisti (Fingrid Oyj, Finland); Hiroo Tarao (Tampere University of Technology, Finland); Rauno Pääkkönen (Finnish Institute of Occupational Health, Finland);*
- 2 The Possible Exposure of Children to Extremely Low Frequency Magnetic Fields in the Home  
*Fabriziomaria Gobba (University of Modena and Reggio Emilia, Italy); Rauno Pääkkönen (Finnish Institute of Occupational Health, Finland); Hiroo Tarao (Tampere University of Technology, Finland); Leena Korpinen (Tampere University of Technology, Finland);*
- 3 Electrical Impedance of Plasma Filled Waveguides in the MHz Range  
*Davide Melazzi (University of Padova, Italy); Davide Curreli (University of Padova, Italy); Marco Manente (University of Padova, Italy); Daniele Pavarin (University of Padova, Italy);*
- 4 Equilibrium Conditions of Radiofrequency-heated Plasma Cylinders  
*Davide Curreli (University of Padova, Italy); Davide Melazzi (University of Padova, Italy); Marco Manente (University of Padova, Italy); Daniele Pavarin (University of Padova, Italy);*
- 5 The Labyrinth Structure in the Synthesis of Fractal Antennas  
*Alexander A. Potapov (Kotel'nikov Institute of Radio Engineering and Electronics, Russian Academy of Sciences, Russia); Vladimir I. Grachev (Kotel'nikov Institute of Radio Engineering and Electronics, Russian Academy of Sciences, Russia);*
- 6 LogicView: An Open Source Software for 3D Visualization of Models and Fields in Electromagnetics  
*Ana Oliveira Rodrigues (Universidade Federal de Minas Gerais, Brazil); Juliano J. Viana (Logic Style, Brazil); Jaime Arturo Ramirez (Universidade Federal de Minas Gerais, Brazil);*



- 7 Nonautonomous Spatiotemporal Localized Structures  
*Chao-Qing Dai (Zhejiang Agriculture and Forestry University, China); Jie-Fang Zhang (Zhejiang University of Media and Communications, China);*
- 8 A Method to Model a Spindle System with an Electromagnetic Actuator  
*Jong Hyun Kim (Gwangju Institute of Science and Technology, Republic of Korea); Gyu Ha Kim (Gwangju Institute of Science and Technology, Republic of Korea); Sun-Kyu Lee (Gwangju Institute of Science and Technology, Republic of Korea);*
- 9 Changes of Specific Heat of Water Arising from a Magnetic-field  
*Xiao-Feng Pang (University of Electronic Science and Technology of China, China); Bo Tang (University of Electronic Science and Technology of China, China);*
- 10 Variations of Surface Tension Force of Water Resulting from Magnetic-field  
*Xiao-Feng Pang (University of Electronic Science and Technology of China, China); Bo Deng (University of Electronic Science and Technology of China, China);*
- 11 On the Maxwell Stress Tensor and Electromagnetic Wave Momentum in Continuous Medium  
*Alexey V. Kondratov (A. V. Shubnikov Institute of Crystallography, Russian Academy of Sciences, Russia); Maxim V. Gorkunov (A. V. Shubnikov Institute of Crystallography, Russian Academy of Sciences, Russia);*
- 12 A Direct Experimental Inspection of Displacement Currents  
*Zi-Hua Weng (Xiamen University, China); Jing-Yan He (Xiamen University, China); Jin-Pan Zhu (Xiamen University, China); Ying Weng (Xiamen University, China);*
- 13 Static Magnetic Fields Increase Endotoxin Tolerance of Microglia Cells  
*Che-Tong Lin (Taipei Medical University, Taiwan); Po-Chieh Yang (Taipei Medical University, Taiwan); Hsin-Yua Tsai (Taipei Medical University, Taiwan); Kuo-Ning Ho (Taipei Medical University, Taiwan); Yuh-Yuan Shiau (National Taiwan University, Taiwan); Wei Fang Lee (Taipei Medical University, Taiwan); Haw-Ming Huang (Taipei Medical University, Taiwan);*
- 14 Influence of Static Magnetic Fields on Cytotoxicity of Natural Killer Cells  
*Yung-Kai Huang (Taipei Medical University, Taiwan); Yi-Tsai Su (Taipei Medical University, Taiwan); Sheng-Wei Feng (Taipei Medical University, Taiwan); Ya-Hui Chan (Taipei Medical University, Taiwan); Kon-Shien Fan (En-Chu Kong Hospital, Taiwan); Horng-Mo Lee (Central Taiwan University of Science and Technology, Taiwan); Haw-Ming Huang (Taipei Medical University, Taiwan);*
- 15 The Influence of Static Magnetic Field on Growth of Dental Pulp Stem Cells  
*Haw-Ming Huang (Taipei Medical University, Taiwan); Sheng-Yang Lee (Taipei Medical University, Taiwan); Shu-Hui Yang (Taipei Medical University, Taiwan); Chien-Wu Yeh (Cathay General Hospital, Taiwan); Shu-Li Lin (Cathay General Hospital, Taiwan); Chii Jeng (Taipei Medical University, Taiwan); Kuo-Ning Ho (Taipei Medical University, Taiwan);*
- 16 Static Magnetic Field Exposure Has Positive Effects on Mechanical and Histological Properties of Cryopreserved Human Dental Pulp  
*Sheng-Yang Lee (Taipei Medical University, Taiwan); Yen-Chuang Lin (Taipei Medical University, Taiwan); Shu-Li Lin (Cathay General Hospital, Taiwan); Chii Jeng (Taipei Medical University, Taiwan); Haw-Ming Huang (Taipei Medical University, Taiwan);*
- 17 Remote Diagnostics of Inhomogeneities with Enhanced Resolution  
*M. V. Tinin (Irkutsk State University, Russia); Sergei I. Knizhin (Irkutsk State University, Russia);*
- 18 Analysis of the Forbidden Regions for Multilayer Planar Waveguide with LHM  
*Yaw-Dong Wu (National Kaohsiung University of Applied Sciences, Taiwan); Ming-Shiung Cheng (National Kaohsiung University of Applied Sciences, Taiwan, R.O.C.); Shih-Yuan Chen (National Sun Yat-Sen University, Taiwan); Tien-Tsornng Shih (National Kaohsiung University of Applied Sciences, Taiwan);*
- 19 On the Geometric Representations of Electromagnetism  
*Sara Liyuba Vesely (I.T.B. — C.N.R., Italy); Alessandro Alberto Vesely (Via L. Anelli 13, Italy);*
- 20 A Radar-based Technique for Anomaly Detection in Biomedical Diagnostic Applications  
*Salvatore Caorsi (University di Pavia, Italy); Mattia Stasolla (University of Pavia, Italy);*

- 21 Study on the Human Effect of a Wireless Power Transfer Device at Low Frequency  
*Ji-Yeon Mun (Chungnam National University, Korea); Min-Gyeong Seo (Chungnam National University, Korea); Woo-Geun Kang (EMERC(Electromagnetic Environment Research Center), Korea); Hae-Young Jun (SAMSUNG Electronics, Korea); Yong-Ho Park (SAMSUNG Electronics, Korea); Jeong-Ki Park (Chungnam National University, Korea);*
- 22 Design of Novel Artificial Magnetic Conductor as Reflector and Its SAR Analysis  
*Seung Woo Lee (Chungbuk National University, South Korea); Nam Kim (Chungbuk National University, South Korea); Seung-Yeup Rhee (Chonnam National University, South Korea);*
- 23 A Broadband Active Integrated Microstrip Antenna Array Design in Millimeter Wave Frequency Band  
*Mohammad Mahdi Honari (Amirkabir University of Technology, Iran); Abdolali Abdipour (Amirkabir University of Technology, Iran); Gholamreza R. Moradi (Amirkabir University of Technology, Iran);*
- 24 Three-dimensional Finite Element Modelling of Current Density in Maternal Transthoracic Defibrillation  
*Aleksandar Jeremic (McMaster University, Canada); J. Pots (McMaster University Hospital, Canada); Elham Khosrowshahli (McMaster University, Canada);*
- 25 Evaluation of Tissue Properties in MR Images  
*Jan Mikulka (Brno University of Technology, Czech Republic); Eva Gescheidtová (Brno University of Technology, Czech Republic); Petr Marcon (Brno University of Technology, Czech Republic); Karel Bartušek (Brno University of Technology, Czech Republic); Andrea Sprlakova (Masaryk University, Czech Republic);*
- 26 EM Exposure Chamber for Small Animals  
*Jaroslav Vorlíček (Czech Technical University, Czech Republic); Ladislav Oppl (Czech Technical University in Prague, Czech Republic); Jan Vrba (Czech Technical University in Prague, Czech Republic);*
- 27 Why Gamma Photons Induce Cherenkov Effect  
*Antonio Puccini (Order of Malta, Italy);*
- 28 Anderson Transition May Be Induced by the Self Collapse of the Electron Wave Function  
*Antonio Puccini (Order of Malta, Italy);*
- 29 The Momentum of Luminous Photon Can Explain the Mystery of the Scission of the Water Molecule, Fundamental Event in the Chlorophyllose Photosynthesis  
*Antonio Puccini (Order of Malta, Italy);*
- 30 Multiparametric Data Collection and Data Processing of Animal Tissues in MRI Images  
*Petr Marcon (Brno University of Technology, Czech Republic); Karel Bartušek (Brno University of Technology, Czech Republic); Martin Cap (Brno University of Technology, Czech Republic);*
- 31 The Method of Correction the  $B_1$  Errors in Magnetization Transfer Ratio MTR  
*Mouin Alkhaddour (Brno University of Technology, Czech Republic); Ing. Radek Kubasek (Brno University of Technology, Czech Republic);*
- 32 Influence of Material Properties on the Quality of NMR Images  
*Ing. Radek Kubasek (Brno University of Technology, Czech Republic); Mouin Alkhaddour (Brno University of Technology, Czech Republic);*
- 33 The Measured of Air Ions Mobility Spectrum  
*Zdeněk Roubal (Brno University of Technology, Czech Republic); Radim Kadlec (Brno University of Technology, Czech Republic);*
- 34 The Study of Cell Growth in Tissue Culture in the Magnetic Field  
*Michaela Pokludová (Brno University of Technology, Czech Republic); Eliska Hutová (Brno University of Technology, Czech Republic);*
- 35 Methodology of Thermal Properties Measurement  
*Jan Hrozek (Brno University of Technology, Czech Republic); Michaela Pokludová (Brno University of Technology, Czech Republic); Dusan Nesper (Brno University of Technology, Czech Republic); Karel Bartušek (Brno University of Technology, Czech Republic);*
- 36 Measurement of Magnetic Flux Density by NMR Using Unsymmetrical Spin Echo  
*Tomáš Kriz (Brno University of Technology, Czech Republic); Karel Bartušek (Brno University of Technology, Czech Republic); Radim Korinek (Brno University of Technology, Czech Republic);*
- 37 A Comparison of Characteristics in Parallel and Series Connections of Active Lossy FDNR Blocks  
*Zoltán Szabó (Brno University of Technology, Czech Republic); Jirí Sedláček (Brno University of Technology, Czech Republic);*
- 38 The Magnetizing Behavior Analysis of a Variable Inductor Based on the Orthogonal Magnetization  
*Zhengrong Jiang (North China University of Technology, China); Haichang Ding (Beijing Variable Frequency Technologies Research Center, China); Zhengxi Li (North China University of Technology, China); Jianye Chen (Tsinghua University, China);*

- 39 Nanoradar  
*Nadezhda S. Lapshina (National Research University of Information Technologies, Mechanics and Optics (ITMO), Russia); Roman E. Noskov (National Research University of Information Technologies, Mechanics and Optics (ITMO), Russia); Yuri S. Kivshar (Australian National University, Australia);*

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**Session 2A1**

**Advancements in Phase-space Representations**

**Tuesday AM, August 21, 2012**

**Room A**

Organized by Jorge Ojeda-Castañeda

Chaired by Tatiana Alieva

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- 09:00 The Use of the Wigner Distribution Function for Defining the Concept of Quasi-point Source, and the Application of this Concept to the Restoration of Defocused Images  
*L. R. Berriel-Valdos (Optica y Electronica, Mexico); J. Felix Aguilar (Optica y Electronica, Mexico); I. J. Orlando-Guerrero (Univ. de la Cañada (UNCA), Mexico); R. Ortiz-Sosa (Optica y Electronica, Mexico); S. Mejía-Romero (Optica y Electronica, Mexico); J. E. A. Landgrave (Centro de Investigaciones en Optica, Mexico);*
- 09:20 Projections of Wigner Distribution for Optical Beam Characterization  
*Tatiana Alieva (Universidad Complutense de Madrid, Spain); Alejandro Cámara (Universidad Complutense de Madrid, Spain); Jose A. Rodrigo (Universidad Complutense de Madrid, Spain); Maria Luisa Calvo (Universidad Complutense de Madrid, Spain);*
- 09:40 Experimental Reconstruction of the Wigner Distribution of Rotationally Symmetric Beams  
*Alejandro Cámara (Universidad Complutense de Madrid, Spain); Izan Castro (Universidad Complutense de Madrid, Spain); Tatiana Alieva (Universidad Complutense de Madrid, Spain);*
- 10:00 Phase-space Measurement of Partially Coherent Beams Using Spatial Spectrograms  
*Laura Waller (Princeton University, USA); G. Situ (Princeton University, USA); Jason W. Fleischer (Princeton University, USA);*
- 10:20 Pseudo-random Sequences with Chirp Modulation  
*Jorge Ojeda-Castañeda (University of Guanajuato, Mexico); P. Cerna-García (University of Guanajuato, Mexico); A. Saucedo-Carvajal (University of Veracruz, México);*

10:40 **Coffee Break**

- 11:00 Diffraction of Chain-like Beams with Phase Singularity  
*D. Yu. Cherepko (South Ural State University, Russia); Natalia D. Kundikova (South Ural State University, Russia); I. I. Popkov (South Ural State University, Russia);*
- 11:20 Gaussian Filter with Tunable Half-width  
*Jorge Ojeda-Castañeda (University of Guanajuato, Mexico); Emmanuel Yépez-Vidal (University of Guanajuato, Mexico); Eloy García-Almanza (University of Guanajuato, Mexico);*
- 11:40 Optical Similarity Using Orthonormal Expansions  
*Jorge Ojeda-Castañeda (University of Guanajuato, Mexico); Cristina Margarita Gómez-Sarabia (University of Guanajuato, México); C. Frausto (Centro de Investigaciones en Optica, México);*
- 12:00 Conservation of Angular Momentum and Nonconservative Optical Forces in Scattering  
*Sergey Sukhov (University of Central Florida, USA); David Haefner (University of Central Florida, USA); Aristide Dogariu (University of Central Florida, USA);*

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**Session 2A2**

**Microwave Photonics Techniques, Technology & Applications**

**Tuesday AM, August 21, 2012**

**Room B**

Organized by Stavros Iezekiel, Nikolaos K. Uzunoglu  
 Chaired by Stavros Iezekiel

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- 09:00 Integration of Radio-over-fiber with WDM Passive Optical Networks  
*Stavros Iezekiel (University of Cyprus, Cyprus); Georgios Ellinas (University of Cyprus, Cyprus); Andreas Perentos (University of Cyprus, Cyprus);*
- 09:20 Compact Metamaterial-based Bias Tee Design for 1.55  $\mu\text{m}$  Waveguide-photodiode Based 71–76 GHz Wireless Transmitter  
*Merih Palandöken (Technische Universität Berlin, Germany); Vitaly Rymanov (Universität Duisburg-Essen, Germany); Andreas Stöhr (Universität Duisburg-Essen, Germany); Tolga Tekin (Technische Universität Berlin, Germany);*

- 09:40 On-chip Frequency Discriminator for Microwave Photonics Signal Processing  
*David A. I. Marpaung (University of Twente, The Netherlands); Chris G. H. Roeloffzen (University of Twente, The Netherlands);*
- 10:00 Toward an Eigenanalysis Study of Arbitrarily Shaped Photonic Ring Resonators  
*Peter C. Allilomes (Democritus University of Thrace, Greece); Constantinos L. Zekios (Democritus University of Thrace, Greece); Stavros Iezekiel (University of Cyprus, Cyprus); George A. Kyriacou (Democritus University of Thrace, Greece);*
- 10:20 Ultra-wideband Radio Frequency Beamforming Using Microwave BFNs  
*Fanourios E. Fakoukakis (Democritus University of Thrace, Greece); Theodoros N. Kaifas (Democritus University of Thrace, Greece); George A. Kyriacou (Democritus University of Thrace, Greece);*
- 10:40 **Coffee Break**
- 11:00 Wideband 1.55  $\mu\text{m}$  Waveguide Photodiodes Employing Planar Resonant Circuits for E-band (60–90 GHz) Operation  
*Vitaly Rymanov (Universität Duisburg-Essen, Germany); Sascha Lutzmann (Technische Universität Berlin, Germany); Merih Palandöken (Technische Universität Berlin, Germany); Tolga Tekin (Technische Universität Berlin, Germany); Andreas Stöhr (Universität Duisburg-Essen, Germany);*
- 11:20 Analysis and Design of Ferroelectric Phase Shifters Appropriate for Printed Phased Arrays  
*Anastasios S. Paraskevopoulos (Democritus University of Thrace, Greece); Christos I. Kolitsidas (Democritus University of Thrace, Greece); Fanourios E. Fakoukakis (Democritus University of Thrace, Greece); George A. Kyriacou (Democritus University of Thrace, Greece);*
- 11:40 Magnetostatic Oscillations for Near-field Microwave Sensing  
*Roman Joffe (Ben-Gurion University of the Negev, Israel); Eugene O. Kamenetskii (Ben-Gurion University of the Negev, Israel); Reuven Shavit (Ben-Gurion University of the Negev, Israel);*

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**Session 2A3**  
**Inverse Problems**

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**Tuesday AM, August 21, 2012**

**Room C**

Organized by Valery Serov, Yury G. Smirnov

Chaired by Yury G. Smirnov

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- 09:00 General Ray Method for Solution of Direct and Inverse Problems of Electromagnetism  
*Alexandre Grebennikov (Benemérita Universidad Autónoma de Puebla, México);*
- 09:20 Inverse Problems to Determine Constant Permittivity and Coefficient of Nonlinearity in the Problem of TE Wave Propagation in a Layer with Kerr Nonlinearity  
*Dmitry V. Valovik (Penza State University, Russia);*
- 09:40 Reconstruction of Complex Permittivity of a Nonhomogeneous Body of Arbitrary Shape in a Rectangular Waveguide  
*Yury G. Smirnov (Penza State University, Russia); Mikhail Yu. Medvedik (Penza State University, Russia); Elena E. Grishina (Penza State University, Russia);*
- 10:00 Permittivity Reconstruction of Layered Dielectrics in a Rectangular Waveguide from the Reflection and Transmission Coefficients at Different Frequencies  
*Yury G. Smirnov (Penza State University, Russia); Ekaterina D. Derevyanchuk (Penza State University, Russia);*
- 10:20 Analysis of Electromagnetic Wave Propagation through a Layer with Graded-index Distribution of Refraction Index  
*Nikolai B. Pleshchinskii (Kazan State University, Russia); D. N. Tumakov (Kazan Federal University, Russian Federation);*
- 10:40 **Coffee Break**
- 11:00 Reconstruction of Heterogeneity Parameters by Reflected Field in the Wave Guided Structure  
*I. L. Aleksandrova (Kazan Federal University, Russia); S. V. Baranov (Kazan Federal University, Russia); Nikolai B. Pleshchinskii (Kazan State University, Russia);*
- 11:20 Wave Diffraction Problems on Periodical Sets of Heterogeneities in the Stratified Media  
*I. L. Aleksandrova (Kazan Federal University, Russia); E. A. Osipov (Kazan Federal University, Russia); Nikolai B. Pleshchinskii (Kazan State University, Russia); P. A. Rogozhin (Kazan Federal University, Russia);*

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**Session 2A4**
**Near to Mid-range Wireless Power Transfer  
Technology: Principles and Applications 1**


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**Tuesday AM, August 21, 2012**
**Room D**

Organized by Ki Young Kim

 Chaired by Ki Young Kim
 

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- 09:00 Uniform Magnetic Field Resonator for Proximity Wireless Charging System  
*Young-Ho Ryu (Samsung Advanced Institute of Technology, Korea); Jae-Hyun Park (Samsung Advanced Institute of Technology, Korea); Ki Young Kim (Samsung Advanced Institute of Technology, Korea); Eunseok Park (Samsung Advanced Institute of Technology, Korea); Keum-Su Song (Samsung Advanced Institute of Technology, Korea); Chi-Hyung Ahn (Samsung Advanced Institute of Technology, Korea); Yun-Kwon Park (Samsung Advanced Institute of Technology, Korea); Sangwook Kwon (Samsung Advanced Institute of Technology, Korea);*
- 09:20 Magnetic Resonance Wireless Power Transfer over Mid-range with Non-coaxially Aligned Resonators  
*Ki Young Kim (Samsung Advanced Institute of Technology, Korea); Young-Ho Ryu (Samsung Advanced Institute of Technology, Korea); Eunseok Park (Samsung Advanced Institute of Technology, Korea); Keum-Su Song (Samsung Advanced Institute of Technology, Korea); Chi-Hyung Ahn (Samsung Advanced Institute of Technology, Korea); Jae-Hyun Park (Samsung Advanced Institute of Technology, Korea); Yun-Kwon Park (Samsung Advanced Institute of Technology, Korea); Sangwook Kwon (Samsung Advanced Institute of Technology, Korea);*
- 09:40 Composite Right-/Left-handed Resonator for Wireless Power Transfer  
*Jae-Hyun Park (Samsung Advanced Institute of Technology, Korea); Young-Ho Ryu (Samsung Advanced Institute of Technology, Korea); Ki Young Kim (Samsung Advanced Institute of Technology, Korea); Eunseok Park (Samsung Advanced Institute of Technology, Korea); Keum-Su Song (Samsung Advanced Institute of Technology, Korea); Chi-Hyung Ahn (Samsung Advanced Institute of Technology, Korea); Yun-Kwon Park (Samsung Advanced Institute of Technology, Korea); Sangwook Kwon (Samsung Advanced Institute of Technology, Korea);*
- 10:00 Automated Adaptive Frequency and Power-level Tracking System for Near- to Mid-range Wireless Power Transfer via Magnetic Resonance Coupling  
*Nam-Yoon Kim (Samsung Advanced Institute of Technology, Korea); Ki Young Kim (Samsung Advanced Institute of Technology, Korea); Jinsung Choi (Samsung Advanced Institute of Technology, Korea); Changwook Yoon (Samsung Advanced Institute of Technology, Korea); Dong-Zo Kim (Samsung Advanced Institute of Technology, Korea); Young-Ho Ryu (Samsung Advanced Institute of Technology, Korea); Yun-Kwon Park (Samsung Advanced Institute of Technology, Korea); Sangwook Kwon (Samsung Advanced Institute of Technology, Korea);*
- 10:20 Mid-range Wireless Power Transmission System Using Real-time Complex Impedance Control  
*Ken Takei (Hitachi, Ltd., Japan);*
- 10:40 **Coffee Break**
- 11:00 Development of Wireless Power Transmission System with Automatic Impedance Matching System for a Toy Helicopter  
*Jun Ishida (The University of Tokyo, Japan); Masayoshi Koizumi (The University of Tokyo, Japan); Kimiya Komurasaki (The University of Tokyo, Japan);*
- 11:20 Wireless Power System for Implantable Heart Pumps Based on Energy Injection Control  
*Ho Yan (Alex) Leung (University of Auckland, New Zealand); David M. Budgett (University of Auckland, New Zealand); D. McCormick (University of Auckland, New Zealand); Aiguo Patrick Hu (University of Auckland, New Zealand);*
- 11:40 Design of Power Receiver IC for Wireless Resonant Power Transfer  
*Dong-Zo Kim (Samsung Advanced Institute of Technology, Korea); Ki Young Kim (Samsung Advanced Institute of Technology, Korea); Nam-Yoon Kim (Samsung Advanced Institute of Technology, Korea); Keum-Su Song (Samsung Advanced Institute of Technology, Korea); Changwook Yoon (Samsung Advanced Institute of Technology, Korea); Chi-Hyung Ahn (Samsung Advanced Institute of Technology, Korea); Young-Jin Moon (Hanyang University, South Korea); Hosoo Park (Samsung Advanced Institute of Technology, Korea); Yun-Kwon Park (Samsung Advanced Institute of Technology, Korea); Sangwook Kwon (Samsung Advanced Institute of Technology, Korea);*

- 12:00 Analysis of Power/Ground Resonance Frequency in Printed Circuit Board inside Strong Magnetic Field for Wireless Power Transmission (WPT) System  
*Changwook Yoon (Samsung Advanced Institute of Technology, Korea); Nam-Yoon Kim (Samsung Advanced Institute of Technology, Korea); Ki Young Kim (Samsung Advanced Institute of Technology, Korea); Jinsung Choi (Samsung Advanced Institute of Technology, Korea); Dong-Zo Kim (Samsung Advanced Institute of Technology, Korea); Young-Ho Ryu (Samsung Advanced Institute of Technology, Korea); Yun-Kwon Park (Samsung Advanced Institute of Technology, Korea); Sangwook Kwon (Samsung Advanced Institute of Technology, Korea);*
- 12:20 Wireless Power Transfer in the Condition of Foreign Object Existence  
*Chi-Hyung Ahn (Samsung Advanced Institute of Technology, Korea); Young-Ho Ryu (Samsung Advanced Institute of Technology, Korea); Ki Young Kim (Samsung Advanced Institute of Technology, Korea); Eunseok Park (Samsung Advanced Institute of Technology, Korea); Keum-Su Song (Samsung Advanced Institute of Technology, Korea); Jae-Hyun Park (Samsung Advanced Institute of Technology, Korea); Yun-Kwon Park (Samsung Advanced Institute of Technology, Korea); Sangwook Kwon (Samsung Advanced Institute of Technology, Korea);*
- 09:40 Guided Modes of an Open Circular Magnetized Plasma Waveguide in the Resonant and Nonresonant Frequency Ranges  
*G. A. Markov (University of Nizhny Novgorod, Russia); Mikhail G. Shkakov (University of Nizhny Novgorod, Russia); N. M. Shmeleva (University of Nizhny Novgorod, Russia);*
- 10:00 Green's Function for Paraxial Equation  
*Alexander G. Nerukh (Kharkov National University of Radio Electronics, Ukraine); D. A. Zolotariov (Kharkov National University of Radio Electronics, Ukraine); D. A. Nerukh (Aston University, UK); Georgi Nikolov Georgiev (University of Veliko Tirnovo "St. St. Cyril and Methodius", Bulgaria);*
- 10:20 A Simple Analytical Method for Describing Important Optical Beams Truncated by Finite Apertures  
*Michel Zamboni-Rached (Universidade Federal do ABC, Brasil); Erasmo Recami (Universita Statale di Bergamo, Italy); Massimo Balma (Selex Galileo S.p.A., Italy);*
- 10:40 **Coffee Break**
- 11:00 A Novel Interactive Approach for Modal Analysis of Nonlinear Waveguides Based on a Fully Hybrid Vectorial Finite Element Method  
*Kleber Zuza Nobrega (Centro Federal de Educaçao Tecnol3gica do Maranh3o, Brazil); A. M. F. Frasson (Universidade Federal do Esp3rito Santo, Brazil);*

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**Session 2A5**

**Advanced Mathematical and Computational Methods in Electromagnetic Theory and Their Applications**

**Tuesday AM, August 21, 2012**

**Room E**

Organized by Mariana Nikolova Georgieva-Grosse,  
Georgi Nikolov Georgiev

Chaired by Georgi Nikolov Georgiev

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- 09:00 Plane Wave Diffraction by a Strip with Sinusoidal Corrugation  
*T. Eizawa (NEC Engineering, Ltd., Japan); T. Matsuyama (Tokai Rika Co., Ltd., Japan); Kazuya Kobayashi (Chuo University, Japan);*
- 09:20 Theory of the  $\hat{L}_2$ ,  $(\hat{c}, \hat{\rho}, \hat{n})$  Numbers and Its Application to the Slow Wave Propagation in the Coaxial Ferrite Waveguide  
*Georgi Nikolov Georgiev (University of Veliko Tirnovo "St. St. Cyril and Methodius", Bulgaria); Mariana Nikolova Georgieva-Grosse (Consulting in Physics and Computer Sciences, Germany);*
- 11:40 The Electrodynamics of the Induction Motor  
*Shayak Bhattacharjee (Indian Institute of Technology Kanpur, India);*
- 12:00 Scattering of Electromagnetic Waves by Many Thin Cylinders and Creation of Medium with Desired Refraction Coefficient  
*Mykhaylo I. Andriychuk (Institute for Applied Problems in Mechanics and Mathematics, NASU, Ukraine);*

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**Session 2A6**
**Medical Electromagnetics, Biological Effects,  
MRI**


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**Tuesday AM, August 21, 2012**
**Room F**

Organized by Jian Tong, Guozheng Guo

 Chaired by Jian Tong
 

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- 09:00 Protective Effect of 900 MHz Radiofrequency Fields on DNA Damage Induced by  $\gamma$ -radiation in Mice  
*Yi Cao (Soochow University, China); Bingcheng Jiang (Soochow University, China); Jihua Nie (Soochow University, China); Zhen Zhou (Soochow University, China); Jie Zhang (Soochow University, China); Jian Tong (Soochow University, China);*
- 09:20 Nonlinear Mapping of Electromagnetic Properties to Breast Tissues Using T1-Weighted 3-D MRI Data  
*Ahmet Hakan Tunçay (Istanbul Technical University, Turkey); Ibrahim Akduman (Istanbul Technical University, Turkey);*
- 09:40 Robust Differential Multifrequency Microwave Biomedical Imaging  
*Luis Jofre (Technical University of Catalonia (UPC), Spain); Santiago Capdevila (Universitat Politècnica de Catalunya, Spain); Marta Guardiola (Technical University of Catalonia (UPC), Spain); Gemma Roqueta Crusats (Universitat Politècnica de Catalunya, Spain);*
- 10:00 Millimeter-wave Dosimetry for bioEM and BAN Applications  
*Maxim Zhadobov (University of Rennes 1, France); Nacer Chahat (Université de Rennes 1, France); Stanislav I. Alekseev (Institute of Cell Biophysics of Russian, Russia); Ronan Sauleau (University of Rennes 1, France);*
- 10:20 Effects of 1800 MHz Microwave on Circadian Rhythm of Testicular Spermatogenic Function in Male Rats  
*Fenju Qin (Soochow University, China); Yi Cao (Soochow University, China); Jianxiang Li (Soochow University, China); Meiju Geng (Soochow University, China); Jian Tong (Soochow University, China);*
- 10:40 **Coffee Break**
- 11:00 Study of Mechanism of Biological Effect of Magnetic-field  
*Xiao-Feng Pang (University of Electronic Science and Technology of China, China);*

- 11:20 Wireless Power Transfer Systems: RF Standard Compliance Issues  
*Andrew W. Wood (Swinburne University of Technology, Australia); Yohan Jayasinghe (Swinburne University of Technology, Australia); Vitas Anderson (Swinburne University of Technology, Australia);*
- 11:40 Effects of 900 MHz Microwave Radiation on Haematopoietic Injuries Induced by  $\Gamma$ -rays  
*Jian-Xiang Li (Soochow University, China); Yi Cao (Soochow University, China); Qian Xu (Soochow University, China); Zong-Da Jin (Soochow University, China); Jun Zhang (Soochow University, China); Min-Xia Lu (Soochow University, China); Jihua Nie (Soochow University, China); Jian Tong (Soochow University, China);*

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**Session 2A7**
**Electromagnetic Modeling, Inversion and Applications**


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**Tuesday AM, August 21, 2012**
**Room G**

Organized by Ganquan Xie, Jianhua Li

 Chaired by Jianhua Li, Fethi Bin Muhammad Belgacem
 

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- 09:00 The Stripline Structure with Multilayer Dielectrics by FDTD  
*Ellen Yoshie Sudo Lutif (CTA, Brazil); Alberto Jose de Faro Orlando (CTA, Brazil); Antonio Carlos da Cunha Migliano (CTA, Brazil);*
- 09:20 New Extensive Fermat Principle For Discontinuous Ray In GL Cloak  
*Jianhua Li (GL Geophysical Laboratory, USA); Ganquan Xie (GL & Hunan Super Computational Sciences Center, China); Lee Xie (GL Geophysical Laboratory, USA); Feng Xie (GL Geophysical Laboratory, USA);*
- 09:40 Simultaneous Joint Inversion of Refraction Tomography and Magnetic Data  
*Michele De Stefano (Integrated EM Center of Excellence, Italy);*
- 10:00 Data-driving Algorithms for 3D Reconstruction from Ladar Data  
*Gerard Berginc (THALES, France); Ion Berechet (SISPIA, France); Stefan Berechet (SISPIA, France);*
- 10:20 The Generalized  $n$ -th Order Maxwell's Equations  
*Fethi Bin Muhammad Belgacem (Faculty of Basic Education, PAAET, Kuwait); Rathinavel Silambarasan (V.I.T. University, India);*
- 10:40 **Coffee Break**

- 11:00 Optimization of the Near-field Optical Force Patterning for Micromanipulation  
*Víctor Ruíz-Cortés (Centro de Investigación Científica y de Educación Superior de Ensenada (CICESE), Russia); Demetrio Macias (Universite de Technologie de Troyes, France);*
- 11:20 Sumudu Characterization of the Maxwell Eigenvalue Problem  
*Ahmad Alkandari (PAAET, Kuwait); Jamal Madouh (College of Technological Studies, Kuwait); Fethi Bin Muhammad Belgacem (PAAET, Kuwait);*
- 11:40 GL Electromagnetic Modeling Scenery Method in the Industrial Design  
*Jianhua Li (GL Geophysical Laboratory, USA); Ganquan Xie (GL & Hunan Super Computational Sciences Center, China); Qing Xie (Hunan Super Computational Science Center, China); Lee Xie (GL Geophysical Laboratory, USA); Feng Xie (GL Geophysical Laboratory, USA);*
- 12:00 Comparison of Microwave Path Lengths between Temperate and Tropical Region Based on Effects of Rain  
*Ulaganathen Kesavan (Technology University of Malaysia, Malaysia); Tharek Bin Abdul Rahman (University Technology Malaysia (UTM), Malaysia); Md. Rafiqul Islam (Islamic International Malaysia University, Malaysia);*
- 12:20 Estimation of Rain Attenuation at C, Ka, Ku and V Bands for Satellite Links in South Africa  
*Senzo Jerome Malinga (Mangosuthu University of Technology, South Africa); Pius Adewale Owolawi (Mangosuthu University of Technology, South Africa);*
- 09:20 Tunneling of EM Waves in Metamaterials: Gradient Dielectric Nanofilms Vs Plasmonics  
*Alexander Borisovich Shvartsburg (Joint Institute of High Temperatures Russian Academy of Sciences, Russia);*
- 09:40 Quantum Blooming: The Possibility of Passing through the Classically Inaccessible Area without Attenuation  
*A. Kaklyugin (Atmospheric Plasma Instant Technology Corp., France);*
- 10:00 Growth and Investigation of LiNbO<sub>3</sub> Thin Films at Nanoscale by Scanning Force Microscopy  
*Dmitry A. Kiselev (National University of Science and Technology "MISiS", Russia); Roman N. Zhukov (National University of Science and Technology "MISiS", Russia); Alexandr S. Bykov (National University of Science and Technology "MISiS", Russia); Mikhail D. Malinkovich (National University of Science and Technology "MISiS", Russia); Yuriy N. Parkomenko (National University of Science and Technology "MISiS", Russia);*
- 10:20 CRDL Spectrometer for Carbon Dioxide, Nitrogen Oxides, and Methane Monitoring at Technological Medium and Atmosphere Based on Multiwave Optical Resonators with Gradient Mirrors  
*Oleg D. Volpian (Federal State Unitary Enterprise, Russian Federation); Georgiy A. Ermakov (Federal State Unitary Enterprise, Russian Federation); Elena A. Voronina (Federal State Unitary Enterprise, Russian Federation); Alexander G. Marunkov (Scientific-Manufacturing Enterprise "Fotron-Auto Ltd.", Russian Federation); Yuri A. Obod (Scientific-Manufacturing Enterprise "Fotron-Auto Ltd.", Russian Federation);*

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### Session 2A8

#### The Electrodynamics of Inhomogeneous Media and Gradient Metamaterials 2

Tuesday AM, August 21, 2012

#### Room H

Organized by Nikolay S. Erokhin, Alexander Borisovich Shvartsburg

Chaired by Victor G. Veselago, Alexander Borisovich Shvartsburg

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- 09:00 Pulsed EM Propulsion of Unconventional Flying Objects  
*Auguste Meessen (Université Catholique de Louvain, Belgium);*
- 10:40 **Coffee Break**
- 11:00 Computational Design for Gradient Optical Films  
*Oleg D. Volpian (Federal State Unitary Enterprise, Russian Federation); Yuri A. Obod (Scientific-Manufacturing Enterprise "Fotron-Auto Ltd.", Russian Federation); Sergey V. Shkatula (Scientific-Manufacturing Enterprise "Fotron-Auto Ltd.", Russian Federation);*
- 11:20 Surface Induced Refractive Index Variations in Inhomogeneous Slabs  
*Sergey Sukhov (University of Central Florida, USA); Veerachart Kajorndejnkul (University of Central Florida, USA); David Haefner (University of Central Florida, USA); Aristide Dogariu (University of Central Florida, USA);*



- 11:40 Evidence of Very Strong Low Frequency Magnetic Fields  
*Auguste Meessen (Université Catholique de Louvain, Belgium);*
- 12:00 Production of EM Surface Waves by Superconducting Spheres: A New Type of Harmonic Oscillators  
*Auguste Meessen (Université Catholique de Louvain, Belgium);*
- 5 Compact Wideband Strip Monopole Antenna for Wireless USB Application  
*Yung-Lun Chen (National Formosa University, Taiwan, R.O.C.); Wen-Chung Liu (National Formosa University, Taiwan); Chao-Ming Wu (National Formosa University, Taiwan, Republic of China);*
- 6 Research on Capacity Performance of TD-LTE System with Different Antenna Schemes  
*Jiangbo Dong (China Mobile Design Institute, China); Yuan Fang (China Mobile Design Institute, China); Nan Li (China Mobile Design Institute, China); Wei Liu (China Mobile Design Institute, China); Hao Sun (China Mobile Design Institute, China); Yunbo Han (China Mobile Design Institute, China); Yanlei Chen (China Mobile Design Institute, China);*

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**Session 2A9**  
**Poster Session 2**

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**Tuesday AM, August 21, 2012**

**9:30 AM - 12:30 AM**

**Room K**

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- 1 Miniaturized Multi-band Microstrip Antenna Design for Implantable Device Communication  
*S. Suganthi (Shri Angalamman College of Engineering and Technology, India); D. Kumar (Periyar Maniammai University, India); Singaravelu Raghavan (National Institute of Technology, India);*
- 2 An Ultra-wideband Dielectric Resonator Antenna with Reconfigurable Band Rejection  
*Mohamad Y. Abou Shahine (American University of Beirut, Lebanon); Mohammed Al-Husseini (American University of Beirut, Lebanon); Karim Y. Kabalan (American University of Beirut, Lebanon); Ali El-Hajj (American University of Beirut, Lebanon);*
- 3 Symmetrical Slot Loaded Dual Band Elliptical Microstrip Patch Antenna  
*Abdullah Al Noman Ovi (Bangladesh University of Engineering & Technology, Bangladesh); Nandita Saha (American International University of Bangladesh, Bangladesh); Shuvashis Dey (American International University of Bangladesh, Bangladesh); Nuzat Naury Alam (American International University of Bangladesh, Bangladesh);*
- 4 Symmetrical Slot Loading in Elliptical Microstrip Patch Antennas Partially Filled with Mue Negative Metamaterials  
*Abdullah Al Noman Ovi (Bangladesh University of Engineering & Technology, Bangladesh); Nandita Saha (American International University of Bangladesh, Bangladesh); Shuvashis Dey (American International University of Bangladesh, Bangladesh); Nuzat Naury Alam (American International University of Bangladesh, Bangladesh);*
- 7 A Reconfigurable Antenna Based on an Ultrawideband to Narrowband Transformation  
*Mohammed Al-Husseini (American University of Beirut, Lebanon); Ali Halim Ramadan (American University of Beirut, Lebanon); Ali El-Hajj (American University of Beirut, Lebanon); Karim Y. Kabalan (American University of Beirut, Lebanon);*
- 8 Urban Environment Path Loss Modelling by Support Vector Regression Machines on GPU: The Case Study of the City of Reggio Calabria  
*Giovanni Angiulli (University Mediterranea, Italy); Salvatore Calcagno (University Mediterranea of Reggio Calabria, Italy); Domenico De Carlo (University Mediterranea, Italy); A. Sgro (University of Mediterranean, Italy);*
- 9 Multi-band Dual Polarized Indoor Antenna for Diversity and MIMO Applications  
*Feng Gao (China Mobile Group Design Institute, China); Peng Gao (China Mobile Group Design Institute, China); Tong Wu (China National Institute of Metrology, China); Runhong Shan (Copyright Protection Center of China, China);*
- 10 Applicability of DCA in HAPS-based Systems in 5850–7075 MHz Band  
*Mastaneh Mokayef (Universiti Teknologi Malaysia (UTM), Malaysia); Walid A. Hassan (University Technology Malaysia (UTM), Malaysia); Yassir A. Ahmad (University of Diyala, Iraq); Tharek Bin Abdul Rahman (University Technology Malaysia (UTM), Malaysia);*

- 11 Utilizing ATPC Scheme to Facilitate Sharing between HAPS and Terrestrial in 5.7 GHz Band  
*Mastaneh Mokayef (Universiti Teknologi Malaysia (UTM), Malaysia); Walid A. Hassan (University Technology Malaysia (UTM), Malaysia); Yassir A. Ahmad (University of Diyala, Iraq); Tharek Bin Abdul Rahman (University Technology Malaysia (UTM), Malaysia);*
- 12 Enhancement of Coexistence between HAPS and Terrestrial System in 5.8 GHz Band  
*Mastaneh Mokayef (Universiti Teknologi Malaysia (UTM), Malaysia); Walid A. Hassan (University Technology Malaysia (UTM), Malaysia); Yassir A. Ahmad (University of Diyala, Iraq); Tharek Bin Abdul Rahman (University Technology Malaysia (UTM), Malaysia);*
- 13 Proficiency Testing of Radiated Emission Testing Laboratory in China  
*Tong Wu (China National Institute of Metrology, China); Qingfei Shen (China National Institute of Metrology, China); Bin Lin (Shenzhen Academy of Metrology and Quality Inspection, China); Hongyan Yin (Beijing Entry-Exit Inspection and Quarantine Bureau, China);*
- 14 On Performance Analysis of SLNR-based Multistream Transceiver in Multiuser MIMO Downlink Channels  
*Ruikai Mai (Peking University, China); Fengyong Qian (Peking University, China); Yuesheng Zhu (Peking University, China); H. Li (Peking University, China);*
- 15 Comparison of Matrix Synthesis Method and Heuristic Techniques for Waveguide-fed Slot Antenna Array on Circular Cylinder  
*Mikhail B. Manuilov (Southern Federal University, Russia);*
- 16 Design of Novel Monopole Antenna Using Dual Rectangular Ring Patches and L-slots  
*Yongjin Shin (Chungbuk National University, Korea); Seungwoo Lee (Chungbuk National University, Korea); Nam Kim (Chungbuk National University, South Korea);*
- 17 A Multiband Antenna Based on Mushroom Composite Right/Left-handed Transmission Line Structure  
*X. Li (Southwest Jiaotong University, Chengdu); Quanyuan Feng (Southwest Jiaotong University, China); Qian-Yin Xiang (Southwest Jiaotong University, China);*
- 18 New Multiple Loop Antenna Design for 13.56 MHz RFID Reader  
*Cheol Yong Yang (University of Incheon, Republic of Korea); Seong Ha Lee (University of Incheon, Republic of Korea); Woon Geun Yang (University of Incheon, Korea);*
- 19 High Isolation MIMO Antenna Design by Using Ground Slits for Mobile Handset  
*Seong Ha Lee (University of Incheon, Republic of Korea); Cheol Yong Yang (University of Incheon, Republic of Korea); Woon Geun Yang (University of Incheon, Korea);*
- 20 Phase Retrieval Algorithm Combining Iterative and Optimization Technique for Near Field Antenna Measurements  
*Adam Kusiek (Gdansk University of Technology, Poland); Wojciech Marynowski (Gdansk University of Technology, Poland); M. Mazur (Gdansk University of Technology, Poland);*
- 21 Cylindrical Coil with Uniform Magnetic Field Distribution for Planar Wireless Charging System  
*Wang-Sang Lee (Korea Advanced Institute of Science and Technology (KAIST), South Korea); Won-Seok Lee (Korea Advanced Institute of Science and Technology (KAIST), South Korea); Kyoung-Sub Oh (Korea Advanced Institute of Science and Technology (KAIST), South Korea); Jong-Won Yu (Korea Advanced Institute of Science and Technology (KAIST), Korea);*
- 22 Frequency Selective Absorber Surface at the 2.4 GHz Unlicensed ISM Band  
*Mesut Kartal (Istanbul Technical University, Turkey); Bora Doken (Istanbul Technical University, Turkey);*
- 23 Design and Simulation of Different Types of Meander Line Antennas with Improved Efficiency  
*Alireza Jahanbakhshi (Amirkabir University of Technology, Iran); Gholamreza R. Moradi (Amirkabir University of Technology, Iran); Reza Sarraf Shirazi (Amirkabir University of Technology, Iran);*
- 24 Miniaturized MIMO Antenna with Improved Radiation Pattern  
*Se-Hwan Choi (Korea Electronics Technology Institute, Republic of Korea); Jin-Sup Kim (Korea Electronics Technology Institute, Republic of Korea); Jae-Young Lee (Korea Electronics Technology Institute, Korea);*

- 25 Design of Dual Frequency Notched Semicircular Slot Antenna with Semicircular Tuning Stub  
Anwer S. Abd El-Hameed (*Electronic Research Institute, Egypt*); Haythem Hussein Abdullah (*Electronics Research Institute (ERI), Egypt*); Deena A. Salem (*Electronics Research Institute, Egypt*); Esmat Abdel-Fattah Abdallah (*Electronics Research Institute, Egypt*);
- 26 Gradient of Radio Refractivity in Troposphere  
Mindaugas Zilinskas (*Communications Regulatory Authority of the Republic of Lithuania, Lithuania*); Milda Tamosiunaite (*Vilnius University, Lithuania*); Milda Tamosiuniene (*Semiconductor Physics Institute, Lithuania*); Egidijus Valma (*Vilnius University, Lithuania*); Stasys Tamosiunas (*Vilnius University, Lithuania*);
- 27 Reconfigurable Slot Element of Reflectarray  
Andrey Alekseevich Prilutskiy (*JSC "Research-and-production Complex Scientific Research Institute of Long Distance Radiocommunication", Russia*); Sergey V. Bogdanov (*JSC "Research-and-production Complex Scientific-Research Institute of Long Distance Radiocommunication", Russia*); Marat A. Zheksenov (*JSC "Research-and-production Complex Scientific-Research Institute of Long Distance Radiocommunication", Russia*); Sergey N. Potapov (*JSC "Research-and-production Complex Scientific-Research Institute of Long Distance Radiocommunication", Russia*);
- 28 Compact Integrated Broadband Circularly Polarized Diversity Antenna for Wireless Communications  
Don-Jin Lee (*Korea Advanced Institute of Science and Technology (KAIST), Korea*); Wang-Sang Lee (*Korea Advanced Institute of Science and Technology (KAIST), South Korea*); Kyoung-Sub Oh (*Korea Advanced Institute of Science and Technology (KAIST), South Korea*); Jong-Won Yu (*Korea Advanced Institute of Science and Technology (KAIST), Korea*);
- 29 Radiation and Mutual Coupling between Apertures on a Conducting Cylinder  
Rafal Lech (*Gdansk University of Technology, Poland*); Adam Kusiek (*Gdansk University of Technology, Poland*); J. Mazur (*Gdansk University of Technology, Poland*);
- 30 UWB Antennas Fed with Coplanar Three-strip Line  
Wojciech Marynowski (*Gdansk University of Technology, Poland*); Rafal Lech (*Gdansk University of Technology, Poland*); J. Mazur (*Gdansk University of Technology, Poland*);
- 31 A Simple Miniaturized Triple-band Antenna for WLAN/WiMAX Applications  
Hilal El Misilmani (*American University of Beirut, Lebanon*); Mohammed Al-Husseini (*American University of Beirut, Lebanon*); Karim Y. Kabalan (*American University of Beirut, Lebanon*); Ali El-Hajj (*American University of Beirut, Lebanon*);
- 32 An Ultra-wideband Printed Monopole Antenna with a Fractal Based Reduced Ground Plane  
Jawad K. Ali (*University of Technology, Iraq*); Ali J. Salim (*University of Technology, Iraq*); Ali I. Hammoodi (*University of Technology, Iraq*); Hussam Alsaedi (*University of Technology, Iraq*);
- 33 A Printed Fractal Based Slot Antenna for Multi-band Wireless Communication Applications  
Jawad K. Ali (*University of Technology, Iraq*); Mahmood T. Yassen (*University of Technology, Iraq*); Mohammed R. Hussan (*University of Technology, Iraq*); Ali J. Salim (*University of Technology, Iraq*);
- 34 C-band 360° Digitally-controlled Analog Phase Shifter with Low Amplitude Modulation Value  
Michael D. Parnes (*MPA, Israel*); Anton I. Zadorozhny (*Saint Petersburg State Electrotechnical University, Russia*); Orest G. Vendik (*Saint Petersburg State Electrotechnical University, Russia*);
- 35 Wide Band Switched Beam Circular Patch Antenna  
Wazie Mohammed Ahmed Abdulkawi (*King Saud University, Saudi Arabia*); Abdel-Fattah A. Sheta (*King Saud University, Saudi Arabia*); Majeed A. S. Alkanhal (*King Saud University, Saudi Arabia*);
- 36 Propagation Model for Pine Tree Forest Environment at GSM 900/GSM1800/CDMA 2100  
Selçuk Helhel (*Akdeniz University, Turkey*); Murat Bitirgan (*Akdeniz University, Turkey*); Osman Kurnaz (*Akdeniz University, Turkey*); Y. Emre Yoruk (*Akdeniz University, Turkey*); Sami Celik (*Akdeniz University, Turkey*);
- 37 Enhanced Security Technology Using Concealed Electromagnetic Contact Barcode for e-ID  
Won-Seok Lee (*Korea Advanced Institute of Science and Technology (KAIST), South Korea*); Don-Jin Lee (*Korea Advanced Institute of Science and Technology (KAIST), Korea*); Kyoung-Sub Oh (*Korea Advanced Institute of Science and Technology (KAIST), South Korea*); Jong-Won Yu (*Korea Advanced Institute of Science and Technology (KAIST), Korea*);

- 38 A Compact Size Monopole Antenna for WLAN  
*Ho-Jun Lee (Korea Electronics Technology Institute, Korea); Jung-Ho Park (Samkwang Co., Ltd, South Korea); Young-Jun Kim (Microtech Co. Ltd, South Korea);*
- 39 In-mold Antenna Using Mobile Phone Case  
*Ho-Jun Lee (Korea Electronics Technology Institute, Korea); Jung-Ho Park (Samkwang Co., Ltd, South Korea); Young-Jun Kim (Microtech Co. Ltd, South Korea);*
- 40 An Overview of Microwave Imaging towards for Breast Cancer Diagnosis  
*Singaravelu Raghavan (National Institute of Technology, India); M. Ramaraj (National Institute of Technology, India);*
- 41 Elliptical Split Ring Resonator: Mathematical Analysis, HFSS Modeling and Genetic Algorithm Optimization  
*M. Ramaraj (National Institute of Technology, India); Singaravelu Raghavan (National Institute of Technology, India); Sumanta Bose (National Institute of Technology, India); Swadhyaya Kumar (National Institute of Technology, India);*
- 42 Novel Microstrip-fed UWB Antenna with CSRR Slot for Signal Rejection in 5–6 GHz Band  
*Singaravelu Raghavan (National Institute of Technology, India); Akkala Subbarao (National Institute of Technology, India); M. Ramaraj (National Institute of Technology, India);*
- 14:40 Soliton-plasma Interactions I: Experiment  
*John C. Travers (Max Planck Institute for the Science of Light, Germany); Philipp Hölzer (Max Planck Institute for the Science of Light, Germany); K. F. Mak (Max Planck Institute for the Science of Light, Germany); F. Tani (Max Planck Institute for the Science of Light, Germany); Frederick Vinzent (University of Erlangen-Nuremberg, Germany); Wonkeun Chang (Max Planck Institute for the Science of Light, Germany); Nicolas Joly (University of Erlangen-Nuremberg, Germany); Mohammed Saleh (Max Planck Institute for the Science of Light, Germany); Fabio Biancalana (Max Planck Institute, Germany); P. St. J. Russell (Max Planck Institute for the Science of Light, Germany);*
- 15:00 Soliton-plasma Interactions II: Theory and Simulation  
*Wonkeun Chang (Max Planck Institute for the Science of Light, Germany); John C. Travers (Max Planck Institute for the Science of Light, Germany); Mohammed F. Saleh (Max Planck Institute for the Science of Light, Germany); Fabio Biancalana (Max Planck Institute, Germany); Philipp Hölzer (Max Planck Institute for the Science of Light, Germany); K. F. Mak (Max Planck Institute for the Science of Light, Germany); F. Tani (Max Planck Institute for the Science of Light, Germany); Frederick Vinzent (University of Erlangen-Nuremberg, Germany); Nicolas Y. Joly (University of Erlangen-Nuremberg, Germany); P. St. J. Russell (Max Planck Institute for the Science of Light, Germany);*

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### Session 2P1

### Nonlinear Guided Wave Phenomena and Optical Solitons

Tuesday PM, August 21, 2012

#### Room A

Organized by Vladimir N. Serkin

Chaired by Vladimir N. Serkin, Andrei I. Maimistov

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- 14:00 Optical Vortex Beams in Nematic Liquid Crystals  
*Yana V. Izdebskaya (The Australian National University, Australia); Anton S. Desyatnikov (The Australian National University, Australia); Johannes Rebling (University of Applied Sciences, Germany); Gaetano Assanto (University "Roma Tre", Italy); Yuri S. Kivshar (Australian National University, Australia);*
- 14:20 Long Range Filament as Soliton  
*Lubomir Miltchev Kovachev (Institute of Electronics, Bulgarian Academy of Sciences, Bulgaria);*
- 15:20 Third Harmonic Generation in Positive-negative Refractive Media  
*E. I. Ostroukhova (National Nuclear Research University, Russia); Andrei I. Maimistov (National Nuclear Research University, Russia);*
- 15:40 Coffee Break
- 16:00 A Class of Localized Solutions of the Linear and Nonlinear Wave Equations  
*Lubomir Miltchev Kovachev (Institute of Electronics, Bulgarian Academy of Sciences, Bulgaria); D. A. Georgieva (Technical University of Sofia, Bulgaria); K. L. Kovachev (Bulgarian Academy of Sciences, Bulgaria);*
- 16:20 Stable Vortex Modes and Spatial Solitons in  $(2 + 1)$ -dimensional Nonlinear Schrödinger Equation with the Spatially Modulated Nonlinearities  
*Jie-Fang Zhang (Zhejiang University of Media and Communications, China); Chao-Qing Dai (Zhejiang Agriculture and Forestry University, China); Lei Wu (University of Strathclyde, United Kingdom);*

- 16:40 Controllable Rogue Waves  
*Chao-Qing Dai (Zhejiang Agriculture and Forestry University, China); Jie-Fang Zhang (Zhejiang University of Media and Communications, China); Shi-Qun Zhu (Soochow University, China);*
- 17:00 Parametric Resonance for Nonautonomous Solitons  
*Celso Hernandez-Tenorio (Instituto Tecnológico de Toluca, México); R. Peña (Benemerita Universidad Autónoma de Puebla, México);*
- 17:20 Solitonic Analogs of the de Broglie Wavelength and the Ramsauer-townsend Effect  
*Vladimir N. Serkin (Benemerita Universidad Autónoma de Puebla, Mexico); T. L. Belyaeva (Universidad Autónoma del Estado de México, México);*
- 15:00 Double Dirac Cones in Metamaterials  
*Kazuaki Sakoda (National Institute for Materials Science, Japan);*
- 15:20 A Improved Structure for Substrate Integrated Waveguide Composite Right/Left-handed Cell  
*Qingshan Yang (Chinese Academy of Sciences, China); Xiangkun Zhang (Chinese Academy of Sciences, China); Yunhua Zhang (Chinese Academy of Sciences, China);*
- 15:40 **Coffee Break**
- 16:00 A Shunt-capacitance-aided Composite Right/Left-handed Leaky Wave Antenna with Large Scanning-range/Bandwidth Ratio  
*Qingshan Yang (Chinese Academy of Sciences, China); Xiangkun Zhang (Chinese Academy of Sciences, China); Yunhua Zhang (Chinese Academy of Sciences, China);*

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**Session 2P2**

**Progress in Metamaterials Research**

**Tuesday PM, August 21, 2012**

**Room B**

Organized by Sergei A. Tretyakov

Chaired by Sergei A. Tretyakov

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- 14:00 Composites of Dielectric Cylinders and Spheres with Electric and Magnetic First Mie Resonances: A Study of Their Transmittivity as Metamaterials  
*Manuel Nieto-Vesperinas (Instituto de Ciencia de Materiales de Madrid, CSIC, Spain);*
- 14:20 Performance Enhancement of Patch Antenna by Fishnet Metamaterial  
*Anand Kumar (PDPM Indian Institute of Information Technology, Design and Manufacturing, India); Dinesh Kumar Vishwakarma (PDPM Indian Institute of Information Technology, Design & Manufacturing, India);*
- 14:40 Design and Fabrication of THz Index-gradient Metamaterials  
*LinKe Jian (National University of Singapore (NUS), Singapore); J. F. Wu (National University of Singapore (NUS), Singapore); H. O. Moser (Karlsruhe Institute of Technology (KIT), Network of Excellent Retired Scientists (NES) and Institute of Microstructure Technology (IMT), Germany); A. Banas (National University of Singapore (NUS), Singapore); S. M. P. Kalaiselvi (National University of Singapore (NUS), Singapore); S. P. Heussler (National University of Singapore (NUS), Singapore); B. H. Mark Breese (National University of Singapore (NUS), Singapore); Hongsheng Chen (Zhejiang University, China); X. X. Cheng (Zhejiang University, China);*
- 16:20 Electromagnetic Scattering from Electrically Large Simply Shaped Bodies Coated with Metamaterial Absorbers  
*Andrey V. Osipov (Microwaves and Radar Institute, German Aerospace Center (DLR), Germany); A. E. Culhaoglu (Microwaves and Radar Institute, German Aerospace Center (DLR), Germany); Erich Kemptner (Microwaves and Radar Institute, German Aerospace Center (DLR), Germany); S. Thurner (Microwaves and Radar Institute, German Aerospace Center (DLR), Germany);*
- 16:40 The Problem of Dielectric Metamaterial Homogenization for Electromagnetic Cloaking  
*Elena Semouchkina (Michigan Technological University, USA);*
- 17:00 Scattering Properties of Optimal Bi-anisotropic Particles  
*J. Vehmas (Aalto University, Finland); Y. Ra'di (Aalto University, Finland); Antti O. Karilainen (Aalto University, Finland); Sergei A. Tretyakov (Aalto University, Finland);*
- 17:20 Graphene Metramaterials: Electron Density Waves and Carbone Nanotube-graphene-dielectric (CNTGD) Electrodynamic Characteristics  
*Yuriy Grigorievich Rapoport (Taras Shevchenko National University of Kyiv, Ukraine); Volodymyr V. Grimalsky (Autonomous University of State Morelos (UAEM), Mexico); I. S. Nefedov (Helsinki University of Technology, Finland); N. A. Kalinich (Kyiv Taras Shevchenko National University, Ukraine);*

- 17:40 Epsilon Near Zero Based Phenomena in Polaritonic Metamaterials: Total Transmission, Total Reflection and Subwavelength Propagation  
*Alexey A. Basharin (Institute of Electronic Structure and Laser (IESL), Greece); Maria Kafesaki (Institute of Electronic Structure and Laser (IESL), Greece); Eleftherios N. Economou (Institute of Electronic Structure and Laser (IESL), Greece); Costas M. Soukoulis (Institute of Electronic Structure and Laser (IESL), Greece);*
- 18:00 A Near/Far-field RFID Reader Metamaterial-inspired Loop Antenna with Reconfigurable Radiation Pattern and Flat Near  $H$ -field Distribution  
*Victor Sanz (University of Castilla-La Mancha, Spain); J. A. Martínez (University of Castilla-La Mancha, Spain); Angel Belenguer (Universidad de Castilla-La Mancha, Spain); Joaquin Cascon Lopez (Universidad de Castilla-La Mancha, Spain); Alejandro Lucas Borja (Universidad de Castilla-La Mancha, Spain);*
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- Session 2P3**  
**Remote Sensing of Earth Critical Parameters**
- 
- Tuesday PM, August 21, 2012**  
**Room C**  
Organized by Jian-Cheng Shi  
Chaired by Jian-Cheng Shi
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- 14:00 A Multiple Scattering Model of Bicontinuous Medium for Radar Remote Sensing of Snow at X-band and Ku-band  
*Wenmo Chang (University of Washington, USA); Leung Tsang (University of Washington, USA); Xiaolan Xu (University of Washington, USA); Simon H. Yueh (California Institute of Technology, USA); Kung-Hau Ding (Air Force Research Laboratory, Wright-Patterson AFB, USA);*
- 14:20 Airborne Microwave Radiometer Measurements of Snow on Lake Ice  
*Martti Tapani Hallikainen (Aalto University, Finland); Matti Vaaja (Aalto University, Finland); Annakaisa Von Lerber (Aalto University, Finland); Juha Kainulainen (Aalto University, Finland); Jaakko Seppänen (Aalto University, Finland); Juha Lemmetyinen (Finnish Meteorological Institute, Finland);*
- 14:40 Electrical Characteristics Dependence of Monstera Leaf on Moisture Content  
*Osman Kurnaz (Akdeniz University, Turkey); Yunus E. Yoruk (Akdeniz University, Turkey); Selçuk Helhel (Akdeniz University, Turkey);*
- 15:00 Passive Microwave Remote Sensing Using Omega-tau Model with Rough Surface Boundary Conditions from NMM3D  
*Leung Tsang (University of Washington, USA); I. Koh (Inha University, South Korea); Tien-Hao Liao (University of Washington, USA); Shaowu Huang (University of Washington, USA);*
- 15:20 Microwave Vegetation Index from SMOS  
*Jian-Cheng Shi (University of California, USA);*
- 15:40 **Coffee Break**
- 16:20 Resolution Control for SAR Tomography with Optimized Track Distribution  
*Amedeo Capozzoli (Università di Napoli Federico II, Italy); Claudio Curcio (Università di Napoli Federico II, Italy); Angelo Liseno (Università di Napoli Federico II, Italy);*
- 16:40 A Simple Parameterization for Sensible and Latent Heat Fluxes during Unstable Daytime  
*Jing Lu (LSIIT, UdS, CNRS, Bld Sebastien Brant, France); Zhao-Liang Li (University of Strasbourg, France); Hua Wu (Institute of Geographic Sciences and Natural Resources Research, Chinese Academy of Sciences, China); Bohui Tang (Institute of Geographic Sciences and Natural Resources Research, Chinese Academy of Sciences, China); Jelila Labeled (LSIIT, UdS, CNRS, Bld Sebastien Brant, France);*
- 17:00 Estimating Land Surface Variables from Satellite Observations: Chinese GLASS Products  
*Shunlin Liang (University of Maryland, USA); Y. Bai (Beijing Normal University, China); J. Cheng (Beijing Normal University, China); X. Cheng (Beijing Normal University, China); Q. Liu (Beijing Normal University, China); S. Liu (Beijing Normal University, China); H. Ren (Beijing Normal University, China); Y. H. Qu (Beijing Normal University, China); Y. Qu (Beijing Normal University, China); Z. Xiao (Beijing Normal University, China); W. Yuan (Beijing Normal University, China); X. Zhang (Beijing Normal University, China); X. Zhao (Beijing Normal University, China);*
- 17:20 Global Carbon Cycle Research Using Surface Remote Sensing and Atmospheric CO<sub>2</sub> Data  
*Jing M. Chen (University of Toronto, Canada);*

17:40 Estimated Radar Systems Attenuation at Millimetre Wave Using Backscattering Amplitude in Durban  
*Pius Adewale Owolawi (Mangosuthu University of Technology, South Africa);*

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**Session 2P4**

**Near to Mid-range Wireless Power Transfer Technology: Principles and Applications 2**

**Tuesday PM, August 21, 2012**

**Room D**

Organized by Ki Young Kim

Chaired by Ki Young Kim

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- 14:00 Wireless Power Transmission by Scalar Waves  
*Konstantin Meyl (Furtwangen University, Germany);*
- 14:20 Study of Transmission Performance on Strong Coupling Wireless Power Transfer System in Free Position  
*X. L. Huang (Southeast University, China); W. Wang (Southeast University, China); L. L. Tan (Southeast University, China); J. M. Zhao (Southeast University, China); Y. L. Zhou (Southeast University, China);*
- 14:40 Investigation of Characteristics of the Current for the Maximum Power Transfer in Wireless Power Transmission  
*Xueliang Huang (Southeast University, China); Qingjing Ji (Southeast University, China); Linlin Tan (Southeast University, China); Wei Wang (Southeast University, China); Hao Qiang (Southeast University, China);*
- 15:00 The Coil Misalignment Model of Inductively Coupled Wireless Power Transfer System: Mutual Inductance Analysis and Transfer Efficiency Optimization  
*Xueliang Huang (Southeast University, China); Hao Qiang (Southeast University, China); Linlin Tan (Southeast University, China);*
- 15:20 Resonant Frequency Splitting Analysis and Optimization of Wireless Power Transfer System  
*Xueliang Huang (Southeast University, China); Linlin Tan (Southeast University, China); Wei Wang (Southeast University, China); YaLong Zhou (Southeast University, China); Hao Qiang (Southeast University, China);*
- 15:40 **Coffee Break**
- 16:00 Equivalence of Inductive Coupling and Strongly Coupled Magnetic Resonance in Wireless Power Transfer  
*David S. Ricketts (Carnegie Mellon University, USA); A. Hillenius (Carnegie Mellon University, USA);*
- 16:20 A Comparison of Analytical Models for Resonant Inductive Coupling Wireless Power Transfer  
*Elisenda Bou Babust (Technical University of Catalonia UPC BarcelonaTech, Spain); Eduard Alarcon (Technical University of Catalonia, Spain); Jordi Gutierrez (UPC BarcelonaTech, Spain);*
- 16:40 Optimization of Wireless Power Transfer with Intermediate Resonant Coil for Interfacing with the Central Nervous System  
*Lingyao Chen (University of Utah, USA); Masood Tabib-Azar (Case Western Reserve University, USA);*
- 17:00 Undesired Emission from Spiral Resonators for Coupled Resonant Wireless Power Transfer  
*Hiroshi Hirayama (Nagoya Institute of Technology, Japan); K. Komatsu (Nagoya Institute of Technology, Japan); Nobuyoshi Kikuma (Nagoya Institute of Technology, Japan); Kunio Sakakibara (Nagoya Institute of Technology, Japan);*
- 17:20 Magnetostrictive Resonators for Wireless Energy Transfer  
*Alexander Chernokalov (Samsung Moscow Research Center, Russia); Mikhail Makurin (Samsung Moscow Research Center, Russia); Nikolay Olyunin (Samsung Moscow Research Center, Russia); Vladimir Arkhipenkov (Samsung Moscow Research Center, Russia); Ki Young Kim (Samsung Advanced Institute of Technology, Korea); Keum-Su Song (Samsung Advanced Institute of Technology, Korea);*
- 17:40 Resonant Structure Based on Bulk Acoustic Resonator (Metacapacitor)  
*Pavel A. Turalchuk (Saint Petersburg Electrotechnical University, Russia); Orest G. Vendik (Saint Petersburg State Electrotechnical University, Russia); Irina B. Vendik (St. Petersburg Electrotechnical University, Russia); Dmitry V. Kholodnyak (Saint-Petersburg Electrotechnical University, Russia); Ki Young Kim (Samsung Advanced Institute of Technology, Korea); Keum-Su Song (Samsung Advanced Institute of Technology, Korea);*
- 18:00 Adaptive Impedance Matching for Magnetically Coupled Resonators  
*Benjamin H. Waters (University of Washington, USA); Alanson P. Sample (University of Washington, USA); Joshua R. Smith (University of Washington, USA);*

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**Session 2P5**
**Computational Electromagnetics**


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**Tuesday PM, August 21, 2012**
**Room E**

Organized by Alexander B. Samokhin

 Chaired by Alexander B. Samokhin

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- 13:40 **Fractal Labyrinths: Physics and Fractional Operators**  
*Alexander A. Potapov (Kotel'nikov Institute of Radio Engineering and Electronics, Russian Academy of Sciences, Russia); Vladimir I. Grachev (Kotel'nikov Institute of Radio Engineering and Electronics, Russian Academy of Sciences, Russia);*
- 14:00 **Analysis of Double Negative Meta-material Asymmetric Planar Slab Waveguide by Transmission Equivalent T-circuit Model**  
*Sanjeev Kumar Raghuvanshi (Indian School of Mines, India); Santosh Kumar (Indian School of Mines, India); Radha Raman Pandey (Institute of Engineering & Industrial Technology, India);*
- 14:20 **Reduction of the Staircasing Error in Finite Methods by Using Transformation Media**  
*Mustafa Kuzuoglu (Middle East Technical University, Turkey); Ozlem Ozgun (Middle East Technical University Northern Cyprus Campus, Turkey);*
- 14:40 **A Thin Wire Method of Moments Scheme Employing King's Green Functions and Sinusoidal Basis Functions**  
*"Omer Zor (Uludag University, Turkey); Burak Polat (Trakya University, Turkey);*
- 15:00 **A Monte-Carlo MPSTD Analysis of Electromagnetic Scattering of Objects Buried below a Random Rough Surface**  
*Yueyang Dai (Clemson University, USA); Wei Liu (Clemson University, USA); Xiao-Bang Xu (Clemson University, USA);*
- 15:20 **Fast Algorithms for Numerical Solution of Volume Singular Integral Equations of Electromagnetics**  
*Alexander B. Samokhin (Moscow State Institute of Radio Engineering, Electronics and Automatics, Russia);*
- 15:40 **Coffee Break**
- 16:00 **A Novel Multi-physics and Circuit Co-simulation Algorithm for the Electro-thermal Analysis of Semiconductors and Circuits**  
*Junquan Chen (Sichuan University, China); Xing Chen (Sichuan University, China);*
- 16:20 **Analysis of Light-emitting Diode with Patterned Contact by Conformal Mapping Technique**  
*Ju. Kholopova (IMT, RAS, Russia); A. Konishi (University of Aizu, Japan); R. Yamase (University of Aizu, Japan); A. Kovalchuk (IMT, RAS, Russia); E. Polushkin (IMT, RAS, Russia); V. Zemlyakov (R&D Corporation "Istok", Russia); S. Shapoval (IMT, RAS, Russia); Irina Khmyrova (The University of Aizu, Japan);*
- 16:40 **Propagation Study of Y-branch Having Inbuilt Optical Splitters and Combiner Using Beam Propagation Method**  
*Sanjeev Kumar Raghuvanshi (Indian School of Mines, India); Santosh Kumar (Indian School of Mines, India); V. Kumar (Indian School of Mines, India); Devendra Chack (BT-Kumaon Institute of Technology, India);*
- 17:00 **An Efficient Hybrid KA-MoM for Backscattering RCS from Combined Objects by Adaptively Truncating the Size of the Rough Surface**  
*Xiao-Yan Zhang (Beijing Institute of Technology, China); Zi Li (East China Jiaotong University, China); Zhi-Wei Liu (Nanjing University of Science and Technology, China);*
- 17:20 **Adaptive Compressed Sampling Method for Fast Computation of Monostatic Scattering**  
*Zhi-Wei Liu (Nanjing University of Science and Technology, China); Yueyuan Zhang (East China Jiaotong University, China); Xiao-Yan Zhang (Beijing Institute of Technology, China);*
- 17:40 **Calculating the Physical Optics Integral on the Realistic Object by an Efficient Numerical Steepest Path Method**  
*Yumao Wu (The University of Hong Kong, China); Lijun Jiang (University of Hong Kong, China); Weng Cho Chew (University of Illinois, USA);*
- 18:00 **Modeling of the Cell Membrane Response to Ultra Short and High Voltage Electric Pulses**  
*Jaime Arturo Ramirez (Universidade Federal de Minas Gerais, Brazil); Joao Francisco C. Vale (Universidade Federal de Minas Gerais, Brazil); David A. Lowther (McGill University, Canada);*
- 18:20 **Design of a Wideband RF Front End Based on Multilayer Technology**  
*Christos I. Kolitsidas (Democritus University of Thrace, Greece); Christos S. Lavranos (Democritus University of Thrace, Greece); George A. Kyriacou (Democritus University of Thrace, Greece);*
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- 18:40 The Casimir Force for Arbitrary Three-dimensional Objects with Low Frequency Methods  
*Phillip R. Atkins (University of Illinois, USA); Weng Cho Chew (University of Illinois, USA); Q. I. Dai (University of Hong Kong, China); Wei E. I. Sha (University of Hong Kong, China);*

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**Session 2P6**

**Medical Electromagnetics, RF Biological Effect**

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**Tuesday PM, August 21, 2012**

**Room F**

Chaired by Victoria Ramos, Jan Vrba

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- 14:00 Impact of Realistic Human Body Interaction in Indoor Wireless System Evaluation  
*Erik Aguirre (Universidad Pública de Navarra, Spain); Javier Arpon (Universidad Pública de Navarra, Spain); Leire Azpilicueta (Public University of Navarre, Spain); Silvia De Miguel (Health Institute Carlos III, Spain); Victoria Ramos (Health Institute Carlos III, Spain); Francisco J. Falcone (Universidad Pública de Navarra, Spain);*
- 14:20 Radio Frequency Identification Devices (RFID) in Prevention of Medication Errors: A Review  
*Maria Dolores Marcos García (Agency "Lain Entralgo" for Education and Health Research, Spain); Silvia De Miguel Bilbao (Health Institute Carlos III, Spain); Victoria Ramos (Health Institute Carlos III, Spain);*
- 14:40 Assessment on Electromagnetic Spectrum within Large Enclosed Vehicles  
*Javier Arpon (Universidad Pública de Navarra, Spain); Erik Aguirre (Universidad Pública de Navarra, Spain); Leire Azpilicueta (Public University of Navarre, Spain); Silvia De Miguel Bilbao (Health Institute Carlos III, Spain); Victoria Ramos (Health Institute Carlos III, Spain); Francisco J. Falcone (Universidad Pública de Navarra, Spain);*
- 15:00 Analysis of Electromagnetic Compatibility of Wireless Ambient Assisted Living Devices  
*Silvia De Miguel Bilbao (Health Institute Carlos III, Spain); Jorge García (Health Institute Carlos III, Spain); Victoria Ramos (Health Institute Carlos III, Spain); David Rubio (Electromagnetic Compatibility Services, Spain); Oscar Javier Suarez (Electromagnetic Compatibility Services, Spain);*
- 15:40 **Coffee Break**

- 16:00 Centurion System for Pulsed Electromagnetic Field Therapy  
*Wayne Kraushar (Centurion Systems, Canada); Marko S. Markov (Research International, USA);*
- 16:20 A Thorough Analysis of SAR Evaluation in Human Head Models  
*Ana Oliveira Rodrigues (Universidade Federal de Minas Gerais, Brazil); Jaime Arturo Ramirez (Universidade Federal de Minas Gerais, Brazil);*
- 16:40 Influence of Gold Nanodiscs on Light Absorption in Thin-film Amorphous Silicon Solar Cell  
*Vasily V. Klimov (Lebedev Physical Institute, Russian Academy of Sciences, Russia); I. V. Zabkov (Lebedev Physical Institute, Russia);*
- 17:00 An *in vitro* Study of Apoptosis in Pancreatic Cancer Cells by High-intensity Nanosecond Pulses  
*Nonthalee Pausawasdi (Mahidol University, Thailand); Vorapan Sirivatanauksorn (Mahidol University, Thailand); Chatchawan Srisawat (Mahidol University, Thailand); Phumin Kurawanich (Mahidol University, Thailand);*

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**Session 2P7**

**Transport and Localization in Periodic and Disordered Media**

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**Tuesday PM, August 21, 2012**

**Room G**

Organized by Valentin D. Freilikher, Nykolay M. Makarov

Chaired by Nykolay M. Makarov

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- 14:00 Generation of a Localized Wave in a Waveguide System with an Imperfection Core  
*Akira Komiyama (Osaka Electro-Communication University, Japan);*
- 14:20 Single Channel Transport in Disordered Systems  
*Abe Peña (University of Texas at San Antonio, USA); Adrian Girschik (Vienna University of Technology, Austria); Florian Libisch (Vienna University of Technology, Austria); Stefan Rotter (Vienna University of Technology, Austria); Andrey Chabanov (University of Texas at San Antonio, USA);*
- 14:40 Surface Disordered Waveguide: How to Separate Distinct Mechanisms of Scattering in Different Frequency Bands  
*Nykolay M. Makarov (Benemerita Universidad Autonoma de Puebla, Mexico); M. Rendon (Universidad Autonoma de Puebla, Mexico);*

- 15:00 Non-conventional Anderson Localization in Array of Matched and Balanced Bilayers  
*Nykolay M. Makarov (Benemerita Universidad Autonoma de Puebla, Mexico); E. J. Torres-Herrera (Universidad Autonoma de Puebla, Mexico); Felix M. Izrailev (Universidad Autonoma de Puebla, Mexico);*
- 15:40 **Coffee Break**
- 16:00 Anisotropic Voigt Effect and Other Magneto-optical Phenomena in Metamaterials with Periodic Microstructures  
*Yakov M. Strel'niker (Bar-Ilan University, Israel); David J. Bergman (Tel Aviv University, Israel); Anna O. Voznesenskaya (National Research University of Information Technologies, Mechanics and Optics, Russian Federation); Alexey P. Vinogradov (Institute for Theoretical and Applied Electromagnetics of the Russian Academy of Sciences, Russia);*
- 16:20 Controlling the Movement of Plasmonic Nanoparticles with Fast Electron Beams  
*Alejandro Reyes-Coronado (Universidad Nacional Autonoma de Mexico, Mexico); P. E. Batson (Rutgers University, USA); Ruben Gerardo Barrera (Universidad Nacional Autonoma de Mexico, Mexico); A. Rivacoba (University of the Basque Country UPV/EHU, Spain); A. Howie (Cavendish Laboratory, United Kingdom); Pedro M. Echenique (University of the Basque Country UPV/EHU, Spain); Javier Aizpuru (Donostia International Physics Center (DIPC) and Centro Mixto de Física de Materiales (CSIC-UPV/EHU), Spain);*
- 16:40 Reflection of Electromagnetic Waves at a Half-space Filled with a Turbid Colloid: An Effective-medium Approach  
*E. Gutiérrez-Reyes (Universidad Nacional Autónoma de México, México); Augusto Garcia-Valenzuela (Universidad Nacional Autonoma de Mexico, Mexico); Ruben Gerardo Barrera (Universidad Nacional Autonoma de Mexico, Mexico);*
- 17:00 Enhanced Microwave Transmission and Magnetophotonic Response in One-Dimensional Magnetophotonic Crystals  
*Kyle Smith (University of Texas at San Antonio, USA); Andrey Chabanov (University of Texas at San Antonio, USA);*
- 17:20 Damping Effects in the Metamaterial Response of Periodic Metallic Nanostructures  
*Jorge Antonio Reyes-Avendaño (Tecnologico de Monterrey, Mexico); Vitaliy Ivanovich Mezhujev (Berdiansk State Pedagogical University, Ukraine); Felipe Perez-Rodriguez (Benemerita Universidad Autonoma de Puebla, Mexico);*
- 17:40 Scattering of Waves: Imperfect Coupling and Absorption or Amplification  
*Rafael A. Méndez (Universidad Nacional Autonoma de Mexico, Mexico); Angel M. Martinez-Arguello (Universidad Nacional Autonoma de Mexico, Mexico); G. Baez (Universidad Autonoma Metropolitana Azcapotzalco, Mexico); M. Martinez-Mares (Universidad Autonoma Metropolitana-Iztapalapa, Mexico);*
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- Session 2P8**  
**Mobile Antennas, Printed Antennas, and Array Antennas**
- 
- Tuesday PM, August 21, 2012**  
**Room H**  
Chaired by Salah Ismael Yahya Al-Mously,  
Alexander Sergeevich Kondratiev
- 
- 14:00 A Method for Reduction of the Negative Impact of the Instrument Leakage during Measurements of the Amplitude and Phase Characteristics of Array Elements on the Depth of the Nulls Synthesized in the Array Radiation Pattern  
*Alexander Olegovich Manichev (JSC "ALMAZ-ANTEY" MSDB", Russia); Boris Vladimirovich Levkin (JSC "ALMAZ-ANTEY" MSDB", Russia);*
- 14:20 Design of Experiments and Data Processing for Diagnostics of Phased Array Antenna Elements with the Use of Reflected Signals  
*Alexander Olegovich Manichev (JSC "ALMAZ-ANTEY" MSDB", Russia); Vladimir Alekseevich Balagurovskii (ALTAIR Naval Radio Electronics Scientific Research Institute, Russia);*
- 14:40 Accurate Recovering of the Amplitude and Phase Distribution of a Phased Array Antenna with Interacting Elements with the Help of the Switching Method  
*Vladimir Alekseevich Balagurovskii (JSC "ALMAZ-ANTEY" MSDB", Russia); Alexander Sergeevich Kondratiev (JSC "ALMAZ-ANTEY" MSDB", Russia); Alexander Olegovich Manichev (JSC "ALMAZ-ANTEY" MSDB", Russia); Nina Petrovna Polishchuk (JSC "ALMAZ-ANTEY" MSDB", Russia);*

- 15:00 Synthesis Methods for Reactively Loaded Antenna Arrays  
*Alexander Sergeevich Kondratiev (ALTAIR Naval Radio Electronics Scientific Research Institute, Russia);*
- 15:20 A Novel Retrodirective Array by Removing Band Pass Filter  
*Shahrokh Jam (Shiraz University of Technology, Iran); Mohsen Kalantari (Shiraz University of Technology, Iran);*
- 15:40 **Coffee Break**
- 16:00 Design of Compact Dual-band Circularly Polarized Microstrip Antenna Based on Metamaterials  
*Ying Li (University of Science and Technology of China, China); Qi Zhu (University of Science and Technology of China, China); Shanjia Xu (University of Science and Technology of China, China);*
- 16:20 Effect of Human Posture on Antenna Performance of Push-to-talk Transceiver in VHF and UHF Bands  
*Naoto Kogo (NHK, Japan); Tetsuomi Ikeda (NHK, Japan);*
- 16:40 A Novel Compact High-gain Dual-band Circularly Polarized Antenna for Base-station Application  
*Hossein Sarbandi Farahani (Khajeh Nasir Toosi University of Technology, Iran); R. A. Sadeghzadeh (K. N. Toosi University of Technology, Iran);*
- 17:00 Efficient Shape Optimization of Broadband Microstrip Antenna Design by Means of Genetic Algorithm and Finite Element Method  
*Bilal El Jaafari (Universidad Politécnica de Madrid, Spain); Miguel Angel Gonzalez (Universidad Politécnica de Madrid, Spain); Jesus Garcia-Jimenez (Universidad Politecnica de Madrid, Spain); Juan Zapata Ferrer (Universidad Politecnica de Madrid, Spain);*
- 17:20 A Method for Determination of the Coordinates of a Low-altitude Target  
*Vladimir Alekseevich Balagurovskii (ALTAIR Naval Radio Electronics Scientific Research Institute, Russia); Alexander Sergeevich Kondratiev (ALTAIR Naval Radio Electronics Scientific Research Institute, Russia); Nina Petrovna Polishchuk (JSC "ALMAZ-ANTEY" MSDB, Russia);*
- 17:40 Mobile Phone EMC Deterioration Due to Different Realistic Usage Patterns  
*Salah Ismaeel Yahya Al-Mously (Koya University, Iraq);*
- 18:20 A Parametric Study and Design of the Balanced Antipodal Vivaldi Antenna (BAVA)  
*Alireza R. Bayat (Imam Khomeini International University (IKIU), Iran); Reza Mirzakhani (Imam Khomeini international University (IKIU), Iran);*
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- Session 2P9**  
**Poster Session 3**
- 
- Tuesday PM, August 21, 2012**  
**14:30 PM - 17:30 PM**  
**Room K**
- 
- 1 Study of Performance Improvement on the Design of Compact SRR Embedded Microstrip Low Pass Filter  
*Sellakkutti Suganthi (Shri Angalamman College of Engineering and Technology, India); Singaravelu Raghavan (National Institute of Technology, India); Durai Kumar (Periyar Maniammai University, India);*
- 2 Optimized Design of Microstrip Low Pass Filter with ANN for Performance Improvement  
*S. Suganthi (Shri Angalamman College of Engineering and Technology, India); Singaravelu Raghavan (National Institute of Technology, India); D. Kumar (Periyar Maniammai University, India);*
- 3 Millimeter-wave Rat-race Balun in a CMOS 65nm Technology with Slow-wave Transmission Lines and Innovative Topology  
*François Burdin (University of Grenoble, France); Florence Podevin (Grenoble-INP (Grenoble-Institut National Polytechnique), France); Benjamin Blampey (University of Grenoble, France); Nicolas Corrao (University of Grenoble, France); Emmanuel Pistono (Université de Savoie, France); Philippe Ferrari (University of Grenoble, France);*
- 4 Parametric Design of Stop Band Pass Filter Based on RF Metamaterials in LTCC Technology  
*Marta Morata (Escuela Universitaria Salesiana de Sarriá, Spain); Ignacio Gil (Universitat Politècnica de Catalunya (UPC)-Barcelona Tech, Spain); Raul Fernández-García (Universitat Politècnica de Catalunya, Spain);*
- 5 Radiofrequency Interference Filters Design Based on Complementary Split Rings Resonators  
*D. Pérez (Universitat Politècnica de Catalunya (UPC)-Barcelona Tech, Spain); Ignacio Gil (Universitat Politècnica de Catalunya (UPC)-Barcelona Tech, Spain); Raul Fernández-García (Universitat Politècnica de Catalunya, Spain);*

- 6 Occupational Exposure to Extremely Low Frequency Electric Fields in Office Work  
*Rauno Pääkkönen (Finnish Institute of Occupational Health, Finland); Hiroo Tarao (Tampere University of Technology, Finland); Fabriziomaria Gobba (University of Modena and Reggio Emilia, Italy); Leena Korpinen (Tampere University of Technology, Finland);*
- 7 Analysis, Design and Implementation of a Useful Broadband Coaxial-to-microstrip Transition  
*Gholamreza Askari (Isfahan University of Technology (IUT), Iran); Hoda Fadakar (Isfahan University of Technology, Iran); Hamid Mirmohammad Sadeghi (Isfahan University of Technology (IUT), Iran);*
- 8 Radar Absorbing Structure with Periodic Pattern Surface for Wind Blade  
*Jin-Bong Kim (Korea Institute of Materials Science, South Korea);*
- 9 Metastructure to Achieving of Voltage Tunable Magnetic Resonance in a Single Longitudinal Cut-wire  
*Galina A. Kraftmakher (Kotelnikov Institute of Radioengineering & Electronics RAS, Russia); Valery Butylkin (Kotelnikov Institute of Radioengineering & Electronics RAS, Russia); Yury Kazantsev (Kotelnikov Institute of Radioengineering & Electronics RAS, Russia);*
- 10 Radar Coverage Predictions in Coastal Areas — Case Studies Issued from PREDEM Campaigns Analysis  
*Jacques Clavierie (CREC St-Cyr/LESTP & IETR, France); Y. Hurtaud (DGA MI/CGN2/SDO, France);*
- 11 A Full-band High Linearity CMOS T/R Switch for UWB Systems  
*Ro-Min Weng (National Dong Hwa University, Taiwan, R.O.C.); Yun-Chih Lu (National Dong Hwa University, Taiwan, R.O.C.); Huo-Ying Chang (National Dong Hwa University, Taiwan, R.O.C.);*
- 12 A Novel Defected Microstrip Structure (DMS) Coupled Line Band Pass Filter in C Band  
*Seyyed Reza Hosseini (Amirkabir University of Technology, Iran); R. Sarraf Shirazi (Amirkabir University of Technology, Iran); Gholamreza R. Moradi (Amirkabir University of Technology, Iran);*
- 13 Optimized Rat-race Coupler with Different Shapes of Defected Ground Structure  
*Mahmoud Shirazi (Amirkabir University of Technology, Iran); R. Sarraf Shirazi (Amirkabir University of Technology, Iran); Gholamreza R. Moradi (Amirkabir University of Technology, Iran);*
- 14 New Wilkinson Power Dividers Using Dual and T-shaped Transmission Lines  
*Sung-Yen Juang (National University of Kaohsiung, Taiwan); Li-Chi Dai (National University of Kaohsiung, Taiwan); Yu-Ta Chen (National University of Kaohsiung, Taiwan); Wen-Chian Lai (National University of Kaohsiung, Taiwan); Pu-Hua Deng (National University of Kaohsiung, Taiwan);*
- 15 Design of Bandpass Filter with Transmission Zeros Using Zeroth-order Resonator and U-shaped Resonator  
*Xiao-Guo Huang (Southwest Jiaotong University, China); Quanyuan Feng (Southwest Jiaotong University, China); Qian-Yin Xiang (Southwest Jiaotong University, China); D.-H. Jia (Southwest Jiaotong University, China);*
- 16 Substrate Integrated Waveguide (SIW) Filters and Its Application to Switchable Filters  
*Qian-Yin Xiang (Southwest Jiaotong University, China); Quanyuan Feng (Southwest Jiaotong University, China); Xiao-Guo Huang (Southwest Jiaotong University, China); D.-H. Jia (Southwest Jiaotong University, China);*
- 17 Four-port Circulator Utilizing Longitudinally Magnetized Cylindrical Ferrite Coupled Line Junction  
*Adam Kusiek (Gdansk University of Technology, Poland); Wojciech Marynowski (Gdansk University of Technology, Poland); J. Mazur (Gdansk University of Technology, Poland);*
- 18 A Wide-stopband Bandpass Filter Using Wide Gap CPW  
*Jin-Sup Kim (Korea Electronics Technology Institute, Republic of Korea); Se-Hwan Choi (Korea Electronics Technology Institute, Republic of Korea);*
- 19 Electromagnetic Properties of Natural and Synthetic Ilmenite Materials in Millimeter Waveband  
*Yu. I. Ryabkov (Institute of Chemistry Ural Branch of Russian Academy of Sciences, Russia); Anatoly B. Rinkevich (Institute of Metal Physics, Russia); D. V. Perov (Institute of Metal Physics Ural Division of Russian Academy of Sciences, Russia);*

- 20 High Power Autonomous Pulse-train UWB Source  
*V. E. Fortov (Joint Institute for High Temperatures of RAS (JIHT RAS), Russia); Yu. I. Isaenkov (Joint Institute for High Temperatures of RAS (JIHT RAS), Russia); V. M. Mikhailov (Joint Institute for High Temperatures of RAS (JIHT RAS), Russia); Evgeni V. Nesterov (Joint Institute for High Temperatures of RAS (JIHT RAS), Russia); Vladimir E. Ostashev (Institute for High Energy Densities of JIHT of RAS, Russia); Yu. V. Semenov (Joint Institute for High Temperatures of RAS (JIHT RAS), Russia); V. A. Stroganov (Joint Institute for High Temperatures of RAS (JIHT RAS), Russia);*
- 21 Modelization of the Coupling of Mini-resonators for Microwaves Photonics Applications  
*Patrice Salzenstein (CNRS, UMR 6174, Laboratoire Associe au Laboratoire National de Metrologie et d'essais (LNE), France); Taron Makaryan (Yerevan State University, Armenia);*
- 22 Dependence of Avalanche Response Time on Photon Flux Incident on DDR Silicon IMPATT Devices  
*Aritra Acharyya (University of Calcutta, India); J. P. Banerjee (University of Calcutta, India);*
- 23 Compact Wide-band 90° Differential Phase Shifters  
*Wojciech Marynowski (Gdansk University of Technology, Poland); Rafal Lech (Gdansk University of Technology, Poland); J. Mazur (Gdansk University of Technology, Poland);*
- 24 Compact and Broadband Integrated Magic-T Configuration  
*Wojciech Marynowski (Gdansk University of Technology, Poland); J. Mazur (Gdansk University of Technology, Poland);*
- 25 ARC Filters Parameters Comparison Regarding to Possible Use in MRI Applications  
*Lubomír Frohlich (Brno University of Technology, Czech Republic); Martin Friedl (Brno University of Technology, Czech Republic); Jirí Sedláček (Brno University of Technology, Czech Republic); Eva Gescheidtová (Brno University of Technology, Czech Republic);*
- 26 Analysis of Displacement Current in Coplanar and Microstrip Lines  
*Wojciech Marynowski (Gdansk University of Technology, Poland); Piotr Kowalczyk (Gdansk University of Technology, Poland);*
- 27 Accurate Calculation of Propagation Losses in Arbitrarily Shaped Waveguide Based Components Using Perturbation of Boundary Condition  
*Stephan Marini (Universidad de Alicante, Spain); Sergio Bleda Pérez (University of Alicante, Spain); Michael Mattes (Ecole Polytechnique Fédérale de Lausanne, Switzerland); Benito Gimeno Martinez (Universidad de Valencia, Spain); Vicente E. Boria (Universidad Politecnica de Valencia, Spain);*
- 28 Universal Filters for Processing of NMR Signals  
*Lubomír Frohlich (Brno University of Technology, Czech Republic); Jirí Sedláček (Brno University of Technology, Czech Republic); Martin Friedl (Brno University of Technology, Czech Republic); Radim Kadlec (Brno University of Technology, Czech Republic);*
- 29 Design of an Effective Architecture for the Envelope Tracking Power Amplifier for LTE Applications  
*Sang-Ho Kam (Pohang University of Science and Technology, South Korea); O. S. Kwon (Pohang University of Science and Technology, Korea); Yoon-Ha Jeong (Pohang University of Science and Technology, South Korea);*
- 30 A Dual Band (WLAN & WiMAX) Filter with Koch Fractal Shaped Using the Imperialist Competitive Algorithm  
*Shahrokh Jam (Shiraz University of Technology, Iran); B. Hoda Khabir (Shiraz University of Technology, Iran);*
- 31 UWB Wilkinson Power Divider Using Tapered Transmission Lines  
*Faroq Razzaz Hamood Kasim (King Saud University, Kingdom of Saudi Arabia); Majeed A. S. Alkanhal (King Saud University, Saudi Arabia); Abdel-Fattah A. Sheta (King Saud University, Saudi Arabia);*
- 32 A 0.6 V Concurrent Dual-band Low Noise Amplifier for Portable Biomedical Receivers  
*Ro-Min Weng (National Dong Hwa University, Taiwan, R.O.C.); Shan-Rong Chen (National Dong Hwa University, Taiwan, R.O.C.);*
- 33 Nonreciprocal Magnetolectric Microwave Attenuator  
*Darya Valerievna Lavrentieva (Novgorod State University, Russia); Mirza Imamovich Bichurin (Novgorod State University, Russia); Alexander S. Tatarenko (Novgorod State University, Russia);*

- 34 A Peano Fractal-based Dual-mode Microstrip Bandpass Filters for Wireless Communication Systems  
*Jawad K. Ali (University of Technology, Iraq); Husam Alsaedi (University of Technology, Iraq); Mohammed F. Hasan (University of Technology, Iraq); Hussain A. Hammam (University of Technology, Iraq);*
- 35 Piezoelectric Multilayer Transformer  
*Alexander Nikolaevich Soloviev (Novgorod State University, Russia); Mirza Imamovich Bichurin (Novgorod State University, Russia); Denis V. Kovalenko (Novgorod State University, Russia);*
- 36 EMC Pre-compliance Test of RFIC and RF Systems Using a Laboratory GTEM Chamber  
*Humberto Xavier De Araújo (University of Campinas — UNICAMP, Brazil); Luiz Carlos Kretly (University of Campinas — UNICAMP, Brazil);*
- 37 Application of the Generalized Integrator in Parallel Hybrid Active Power Filter  
*Zhengrong Jiang (North China University of Technology, China); Haichang Ding (Beijing Variable Frequency Technologies Research Center, China); Zhengxi Li (North China University of Technology, China); Ke Wang (Tsinghua University, China);*
- 38 Problem of Generating of Periodic Structure in EHD Model of Charged Jet Flow  
*Oleg V. Kravchenko (Bauman Moscow State Technical University, Russian Federation);*
- 39 Discontinuous Solutions in EHD Model of Charged Jet Flow  
*Oleg V. Kravchenko (Bauman Moscow State Technical University, Russian Federation);*
- 40 Bayesian Estimation of Tumours in Breasts Using Microwave Imaging  
*Elham Khosrowshahli (McMaster University, Canada); Aleksandar Jeremic (McMaster University, Canada);*
- 41 Puzzles of the “Nonlinear” Ehrenfest Theorem for Solitons  
*Tatyana L. Belyaeva (Universidad Autónoma del Estado de México, México); C. A. Ramírez-Medina (Universidad Autónoma del Estado de México, México); Vladimir N. Serkin (Benemerita Universidad Autónoma de Puebla, Mexico);*
- 42 Dynamics of “Dancing” Gray and Dark Solitons in Time-dependent Harmonic Oscillator Potential  
*Celso Hernandez-Tenorio (Instituto Tecnológico de Toluca, México); Tatyana L. Belyaeva (Universidad Autónoma del Estado de México, México); Vladimir N. Serkin (Benemerita Universidad Autónoma de Puebla, Mexico);*
- 43 Design of High Isolation Electronically Switchable Bandpass Filter  
*Shih-Fong Chao (National Kaohsiung Marine University, Taiwan); Ming-Wei Shih (National Kaohsiung Marine University, Taiwan);*

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**Session 3A1**
**Fiber Lasers and Fiber Micro/Nano-Photonic Components**


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**Wednesday AM, August 22, 2012**
**Room A**

Organized by Nan-Kuang Chen, Mikhail E. Likhachev

 Chaired by Nan-Kuang Chen, Hsiang-Chen Chui
 

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- 09:00 All-Fiber Cladding Pumped at 976 nm Er-doped Fiber Laser and Amplifier  
*Mikhail E. Likhachev (Fiber Optics Research Center, Russian Academy of Sciences, Russia); Leonid V. Kottov (Fiber Optics Research Center of RAS, Russia); Mikhail M. Bubnov (Fiber Optics Research Center of RAS, Russia); Oleg I. Medvedkov (Fiber Optics Research Center of RAS, Russia); Denis S. Lipatov (Institute of Chemistry of High Purity Substances of RAS, Russia); Nikolaj N. Vechkanov (Institute of Chemistry of High Purity Substances of RAS, Russia); Alexej N. Guryanov (Institute of Chemistry of High Purity Substances of RAS, Russia);*
- 09:20 Polarizing Very-large-mode-area Bragg fiber  
*Mikhail E. Likhachev (Fiber Optics Research Center, Russian Academy of Sciences, Russia); S. S. Aleshkina (Fiber Optics Research Center of the Russian Academy of Sciences, Russia); A. D. Pryamikov (Fiber Optics Research Center of the Russian Academy of Sciences, Russia); Dmitry A. Gaponov (University of Limoges, France); A. N. Denisov (Fiber Optics Research Center of the Russian Academy of Sciences, Russia); Mikhail M. Bubnov (Fiber Optics Research Center of the Russian Academy of Sciences, Russia); M. Yu. Salganskii (Fiber Optics Research Center, Russia); Alexej N. Guryanov (Institute of Chemistry of High Purity Substances of RAS, Russia); Yu. A. Uspenskii (P. N. Lebedev Physical Institute of RAS, Russia); Sebastien Fevrier (University of Limoges, France);*

09:40 Tapered Fiber-optic LSPR Sensor with Metal Nanoparticle Layers

*Hsiang-Ying Lin (National Cheng Kung University, Taiwan, R.O.C.); Chen-Han Huang (National Cheng Kung University, Taiwan, R.O.C.); Chia-Ling Cheng (National United University, Taiwan); Nan-Kuang Chen (National United University, Taiwan); Hsiang-Chen Chui (National Cheng Kung University, Taiwan);*

10:00 A Method of High Repetition Rate Femtosecond Optical Pulse Generation by Using Bi-stable Optical Micro-ring Resonators

*Sanjeev Kumar Raghuwanshi (Indian School of Mines, India); Ajay Kumar (Indian School of Mines, India); Santosh Kumar (Indian School of Mines, India);*

10:20 Micro Air-bubble in Hollow-core Optical Fiber for Ultracompact Sagnac Loop Interferometer

*Yu-Hsin Hsieh (National United University, Taiwan); Jheng-Jyun Wang (National United University, Taiwan); Nan-Kuang Chen (National United University, Taiwan);*

10:40 **Coffee Break**

11:00 All-optical Gain-dependent Phase Modulation in Micro Abrupt-tapered Mach-Zehnder Interferometers for High Efficiency Wavelength Conversion

*Zhao-Ying Chen (National United University, Taiwan); Nan-Kuang Chen (National United University, Taiwan); Zhi-Zheng Feng (National United University, Taiwan, R.O.C.); S.-K. Liaw (National Taiwan University of Science and Technology, Taiwan);*

11:20 Multistage Intra-cavity Short-pass Edge Filters for High Efficiency Femtosecond Pulsewidth Stretching in Mode-locked Erbium Fiber Lasers

*Feng-Chou Liu (National United University, Taiwan, R.O.C.); Yi-Kun Lee (National United University, Taiwan); Nan-Kuang Chen (National United University, Taiwan, R.O.C.); S.-K. Liaw (National Taiwan University of Science and Technology, Taiwan);*

11:40 Influence of Index Profile Dispersion on Cutoff Slope for Short-pass Edge Filters

*Yi-Kun Lee (National United University, Taiwan); Nan-Kuang Chen (National United University, Taiwan);*

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### Session 3A2

#### Microwave and Millimeter Wave Circuits and Measurements

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Wednesday AM, August 22, 2012

#### Room B

Organized by Kang-Chun Peng

Chaired by Kang-Chun Peng, Jian-Ming Wu

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09:00 Optimization of Phase Noise in a 2.3 ~ 3.5 GHz Voltage-controlled Oscillator Using the Impedance Locus

*Kang-Chun Peng (National Kaohsiung First University of Science and Technology, Taiwan); Tzzy-Sheng Horng (National Sun Yat-Sen University, Taiwan);*

09:20 Solenoid Magnet for Gun-collector Module of 42 GHz 200 kW Gyrotron

*Sudeep Sharan (FH Frankfurt, University of Applied Sciences, Germany); Deepak Srivastav (CSIR-Central Electronics Engineering Research Institute, India); Anil Kumar (Central Electronics Engineering Research Institute, Council of Scientific and Industrial Research (CSIR), India); Udaybir Singh (Central Electronics Engineering Research Institute (CEERI), Council of Scientific and Industrial Research (CSIR), India); Hasina Khatun (Central Electronics Engineering Research Institute, Council of Scientific and Industrial Research (CSIR), India); Gernot Zimmer (University of Applied Sciences, Germany); Ashok Kumar Sinha (Central Electronics Engineering Research Institute, Council of Scientific and Industrial Research (CSIR), India);*

09:40 New Measuring Instrument for the Characteristics of the Two-phase Flow of the Particulate Material Based on the Microwaves and Digital Processing of the Signals. Constructional Design Issues

*Novikov Vladilen Philippovich (Novosibirsk State Technical University, Russia);*

10:00 A SiGe Voltage-controlled Oscillator for 4G LTE Applications

*Jian-Ming Wu (National Kaohsiung Normal University, Taiwan, R.O.C.); Stephen Chou (T&C Technologies Inc., Taiwan); Zong-Cheng Hong (National Kaohsiung Normal University, Taiwan, R.O.C.);*

10:20 Planar Heterojunction Diode for Millimeter Waves Detection

*Algirdas Sužiedėlis (Center for Physical Sciences and Technology, Lithuania); Steponas Asmontas (Semiconductor Physics Institute, Lithuania); Algis Jurgis Kundrotas (Semiconductor Physics Institute, Center for Physical Sciences and Technology, Lithuania); Jonas Gradauskas (Center for Physical Sciences and Technology, Lithuania); Aurimas Čerškus (Center for Physical Sciences and Technology, Lithuania); Viktorija Nargelienė (Center for Physical Sciences and Technology, Lithuania); Tomas Anbindeis (Elmika Ltd., Lithuania);*

10:40 **Coffee Break**

11:00 Temperature Compensated Bulk Acoustic Wave Resonator Using Doped Silicon Dioxide

*Hosoo Park (Samsung Advanced Institute of Technology, Korea); In Sang Song (Samsung Advanced Institute of Technology, Korea); Sang Uk Son (Samsung Advanced Institute of Technology, Korea); Jeon-Shik Shin (Samsung Advanced Institute of Technology, Korea); Moon-Chul Lee (Samsung Advanced Institute of Technology, Korea); Chul-Soo Kim (Samsung Advanced Institute of Technology, Korea); Duck-Hwan Kim (Samsung Advanced Institute of Technology, Korea); Jing Cui (Samsung Advanced Institute of Technology, Korea); Keum-Su Song (Samsung Advanced Institute of Technology, Korea); Ki Young Kim (Samsung Advanced Institute of Technology, Korea);*

11:20 Plasma Relativistic Microwave Amplifier

*P. S. Strelkov (Prohorov General Physics Institute, Russia); E. I. Ivanov (Prohorov General Physics Institute, Russia); D. V. Shumeiko (Prohorov General Physics Institute, Russia);*

11:40 SOI CMOS Miniaturized Tunable Bandpass Filter with Two Transmission Zeros for High Power Applications

*Do-Kyung Im (Korea Advanced Institute of Science and Technology, Korea); Donggu Im (Korea Advanced Institute of Science and Technology, Korea); Kwiyro Lee (Korea Advanced Institute of Science and Technology, South Korea);*

12:00 A Continues 360° CMOS Phase Shifter for 60 GHz Phased Array Applications

*Hanieh Aliakbari (Amirkabir University of Technology, Iran); Abdolali Abdipour (Amirkabir University of Technology, Iran); Abbas Mohammadi (Amirkabir University of Technology, Iran); Rashid Mirzavand (Amirkabir University of Technology (Tehran Polytechnic), Iran);*

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### Session 3A3

#### Remote Sensing, Imaging and Detection

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Wednesday AM, August 22, 2012

Room C

Chaired by Dara Entekhabi, Boris L. Sheikman

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09:00 Online Geomagnetic Field Monitoring System Using Mobile Devices

*Jimmy Alexander Cortés Osorio (Technological University of Pereira, Colombia); F. A. Medina (Universidad Tecnológica de Pereira, Colombia); A. M. Knott (Universidad Tecnológica de Pereira, Colombia); Iván Darío Arellano Ramírez (Technological University of Pereira, Colombia);*

09:20 Variability of GPS-derived Zenith Tropospheric Delay and Some Result of Its Assimilation into Numeric Atmosphere Model

*Olga G. Khutorova (Kazan Federal University, Russia); G. M. Teptin (Kazan Federal University, Russia); Vladislav E. Khutorov (Kazan Federal University, Russia); V. V. Kalinnikov (Kazan Federal University, Russia); T. R. Kurbangaliev (Kazan Federal University, Russia);*

09:40 Horizontal Structural Functions in Troposphere for Radio Waves Refractivity Index by Use of Ground Set of GPS-GLONASS Receivers

*Vladislav E. Khutorov (Kazan Federal University, Russia); A. A. Jurravlev (Kazan Federal University, Russia); G. M. Teptin (Kazan Federal University, Russia);*

10:00 Remote Sensing for Estimating Cultivated and Arable Land Areas on Slopes

*Yolanda Fernandez-Ordóñez (Colegio de Postgraduados, Mexico); Jesus Soria-Ruiz (National Institute of Research for Forestry, Agriculture and Livestock (INIFAP), Mexico); M. Mauricio Vázquez-Rivera (Instituto Nacional de Investigaciones Forestales y Agropecuarias (INIFAP), Mexico);*

10:20 Extraction of Laver Cultivation Area Using SAR Dual Polarization Data

*Mitsunobu Sugimoto (National Defense Academy, Japan); Kazuo Ouchi (National Defense Academy, Japan);*

10:40 **Coffee Break**



- 11:00 Estimation of Parameters for a Combined Active-passive Surface Soil Moisture Retrieval Algorithm Based on Satellite and Airborne L-band Radar and Radiometer Measurements  
*Maria Piles (Universitat Politècnica de Catalunya, Spain); Kaighin McColl (Massachusetts Institute of Technology, USA); Dara Entekhabi (Massachusetts Institute of Technology, USA); Narendra Das (NASA, USA); Rajat Bindlish (USDA ARS Hydrology and Remote Sensing Laboratory, USA); Iliana Mladenova (USDA ARS Hydrology and Remote Sensing Laboratory, USA); Thomas J. Jackson (USDA ARS Hydrology and Remote Sensing Laboratory, USA);*
- 11:20 A Novel Proximity Measurement System Using Microwave Antennas  
*Yongjae Lee (General Electric Corporation— Global Research Center, USA); Boris L. Sheikman (General Electric Corporation — Measurement and Controls Business, USA); Steven Y. Go (General Electric Corporation — Global Research Center, USA);*
- 11:40 Modelling the GNSS Reflectometry Signal over Bare and Vegetated Land  
*Nazzareno Pierdicca (Sapienza University of Rome, Italy); Leila Guerriero (Tor Vergata University of Rome, Italy); Marco Brogioni (Consiglio Nazionale delle Ricerche, Italy); Alejandro Egido (STARLAB, Spain);*
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- Session 3A4**  
**Antenna Technologies for Broadband and High-speed Wireless Systems**
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- Wednesday AM, August 22, 2012**  
**Room D**  
Organized by Takeshi Fukusako  
Chaired by Takeshi Fukusako, Hisashi Morishita
- 
- 09:00 Metrics of Compactness and Bandwidth for Multiport Communications Antennas  
*Rodney G. Vaughan (Simon Fraser University, Canada); Jane Xing Yun (Norsat International, Canada);*
- 09:20 Half Loop Antenna with Ultra-wide Bandwidth  
*Tae-Hwan Jeong (Chungnam National University, Korea); Jong Myung Woo (Chungnam National University, South Korea);*
- 09:40 Wideband Linear Antenna with H-shaped Parasitic Element  
*Ryuichi Suzuki (National Defense Academy, Japan); Hisashi Morishita (National Defense Academy, Japan); Fumiko Sakuma (Sakuma Antenna Co.,Ltd., Japan);*
- 10:00 Reduction of Cross Polarization in Circularly Polarized Broadband Waveguide Antenna Using an L-shaped Probe  
*Shingo Yamaura (Kumamoto University, Japan); Takeshi Fukusako (Kumamoto University, Japan);*
- 10:20 A Compact Tapered Slot Antenna for UWB Applications with Improved Characteristics  
*Abdelelah Maged Amin Alzahed (Arab Academy for Science & Technology and Maritime Transport, Egypt); Dalia Mohammed Nashaat Elsheakh (Hawaii Center for Advanced Communication, USA); Hazem H. Ali (Arab Academy for Science & Technology and Maritime Transport, Egypt); Es-mat Abdel-Fattah Abdallah (Electronics Research Institute, Egypt);*
- 10:40 **Coffee Break**
- 11:00 Design of Ultra-wideband MIMO Antenna for Mobile Handset Applications  
*Hong-Kyun Ryu (Chungnam National University, Korea); Jong Myung Woo (Chungnam National University, South Korea);*
- 11:20 Circularly Polarized Leaky Wave Antenna Using Composite Right/left-handed Transmission Line  
*Masahiko Ishii (Kumamoto University, Japan); Takeshi Fukusako (Kumamoto University, Japan);*
- 11:40 Beam Steering Microstrip Array Antenna Using Orthogonal Excitation  
*Yu Ushijima (Saga University, Japan); Takeshi Kondo (Saga University, Japan); Nishiyama Eisuke (Saga University, Japan); Ichihiko Toyoda (Saga University, Japan);*
- 12:00 Dielectric Rod Antenna Array with SIW Feed Network for Radar Imaging System  
*Robab Kazemi (K. N. Toosi University of Technology, Iran); Ramezan Ali Sadeghzadeh (K. N. Toosi University of Technology, Iran);*

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**Session 3A5**  
**Computational Techniques**

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**Wednesday AM, August 22, 2012**

**Room E**

Organized by Tsuneki Yamasaki, Yoichi Okuno

Chaired by Tsuneki Yamasaki

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- 09:00 Designing Transformation-based Metamaterials for Numerical Modeling of Low Frequency Electromagnetic Scattering  
*Ozlem Ozgun (Middle East Technical University Northern Cyprus Campus, Turkey); Mustafa Kuzuoglu (Middle East Technical University, Turkey);*
- 09:20 Study on Spectral-domain Analysis of Imperfectly Periodic Structures  
*Koki Watanabe (Fukuoka Institute of Technology, Japan); Yoshimasa Nakatake (Fukuoka Institute of Technology, Japan);*
- 09:40 An Inverse Scattering Approach for Cylindrical Objects without Using the Knowledge of Incident Fields  
*Takashi Takenaka (Nagasaki University, Japan); Toshifumi Moriyama (Nagasaki University, Japan);*
- 10:00 A Genetic Algorithm Enhanced by SVM and DPE  
*Zhi Zheng (Sichuan University, China); Xing Chen (Sichuan University, China);*
- 10:20 Propagation Characteristics of Dielectric Waveguides with Arbitrary Inhomogeneous Media Along the Middle Layer (Part III)  
*Ryosuke Ozaki (Nihon University, Japan); Tsuneki Yamasaki (Nihon University, Japan);*
- 10:40 **Coffee Break**
- 11:00 Non-uniform FFTs in Near-field/Far-field Transformations  
*Amedeo Capozzoli (Università di Napoli Federico II, Italy); Claudio Curcio (Università di Napoli Federico II, Italy); Angelo Liseno (Università di Napoli Federico II, Italy);*
- 11:20 Image Restoration of the Objects with Superresolution on the Basis of Spline — Interpolation  
*Boris A. Lagovsky (Moscow State Institute of Radio Engineering and Automation (Technical University), Russia);*
- 11:40 Superresolution: Simultaneous Orthogonalization of Function Systems Describing the Received Signal and its Source  
*Boris A. Lagovsky (Moscow State Institute of Radio Engineering and Automation (Technical University), Russia);*

- 12:00 Effects of Boundary Conditions on Maxwell Eigenvalue Problem  
*Ahmad Alkandari (PAAET, Kuwait); Fethi Bin Muhammad Belgacem (PAAET, Kuwait);*

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**Session 3A6**  
**Applications of EM Field in Medicine**

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**Wednesday AM, August 22, 2012**

**Room F**

Organized by Jan Vrba

Chaired by Jan Vrba

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- 09:00 Microwave Multiple Frequency Applicator for SAR Homogeneity Augmentation  
*Tomas Vydra (Czech Technical University in Prague, Czech Republic); Daniel Havelka (Czech Technical University, Czech Republic); Jan Vrba (Czech Technical University in Prague, Czech Republic);*
- 09:20 Exposure System with Well Defined Dosimetry  
*Jan Vrba (Czech Technical University in Prague, Czech Republic); Lukas Visek (Czech Technical University in Prague, Czech Republic); Ladislav Oppl (Czech Technical University in Prague, Czech Republic);*
- 09:40 Environment Protecting Industrial Technologies Based on EM Field  
*Jan Vrba (Czech Technical University in Prague, Czech Republic); Tomas Vydra (Czech Technical University in Prague, Czech Republic); Jan Vrba, Jr. (RWTH Aachen University, Germany); Marika Pourova (Czech Technical University in Prague, Czech Republic);*
- 10:00 New Microwave Technologies for Thermotherapy Applicators  
*David Vrba (Czech Technical University in Prague, Czech Republic); Barbora Vrbova (Czech Technical University in Prague, Czech Republic); Jan Vrba (Czech Technical University in Prague, Czech Republic);*
- 10:20 Microwave Thermotherapy: Study of Hot-spots Induced by Electromagnetic Surface Waves  
*Barbora Vrbova (Czech Technical University in Prague, Czech Republic); Jan Vrba (Czech Technical University in Prague, Czech Republic);*
- 10:40 **Coffee Break**

- 11:00 Electric Model of Mitotic Spindle  
*Daniel Havelka (Czech Technical University, Czech Republic); Tomas Vydra (Czech Technical University in Prague, Czech Republic); Michal Cifra (Institute of Photonics and Electronics, Academy of Sciences of the Czech Republic, Czech Republic); Jan Vrba (Czech Technical University in Prague, Czech Republic);*
- 11:20 Design of Slot Applicator for Local Thermotherapy  
*Jaroslav Vorlíček (Czech Technical University, Czech Republic); Jaroslav Kosík (Czech Technical University, Czech Republic); Jan Vrba (Czech Technical University in Prague, Czech Republic);*
- 11:40 Complex Permittivity Measurement of Biological Tissue for Hyperthermia Treatment Planning  
*Jaroslav Vorlíček (Czech Technical University, Czech Republic); Tomáš Jindra (Czech Technical University, Czech Republic); Ladislav Oppl (Czech Technical University in Prague, Czech Republic); Jan Vrba (Czech Technical University in Prague, Czech Republic);*
- 12:00 Cellular Communication by Magnetic Scalar Waves  
*Konstantin Meyl (Furtwangen University, Germany);*
- 10:20 A Local Ether Lens Path Integral Model of Electromagnetic Wave Reception by Wires  
*Michael James Underhill (Underhill Research, UK);*
- 10:40 **Coffee Break**
- 11:00 Antenna Pattern Formation in the Near Field Local Ether  
*Michael James Underhill (Underhill Research Ltd., UK);*
- 11:20 Calculation of an Equivalent Electrical Conductivity Tensor for Multidirectional Carbon Fiber Reinforced Materials  
*Nikos C. Athanasopoulos (Technological Educational Institution of Athens, Greece); V. Kostopoulos (University of Patras, Greece);*
- 11:40 Spherical Wave Representation of the Dyadic Green's Function for a Spherical Impedance Boss at the Edge of a Perfectly Conducting Wedge  
*Behnam Ghassemiparvin (Bilkent University, Turkey); Ayhan Altintas (Bilkent University, Turkey);*
- 12:00 Electromagnetic Sources and Observers in Motion VII — Medium Support for a New Relativity Theory  
*Selwyn E. Wright (ECASS Technologies Ltd., UK);*
- 12:20 Electromagnetic Sources and Observers in Motion VIII — New Relativity Theory Establishes Einstein's Ether-less Aspect of Relativity as Irrational  
*Selwyn E. Wright (ECASS Technologies Ltd., UK);*

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**Session 3A7**  
**Electromagnetic Theory**

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**Wednesday AM, August 22, 2012**

**Room G**

Chaired by Taner Sengor, Michael James Underhill

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- 09:00 The Interaction of Electromagnetic Waves from Sheets of Spherical Nano-elements Meshed on Concentric Spherical Shells  
*Taner Sengor (Yildiz Technical University, Turkey);*
- 09:20 Quantum Electrodynamical Interaction Mechanisms in Simple Atoms  
*Taner Sengor (Yildiz Technical University, Turkey);*
- 09:40 Analytical Formulation for the Magnetic Shielding Effectiveness of Enclosures with Apertures  
*Ibrahim Bahadir Basyigit (Akdeniz University, Turkey); Sükrü Özen (Akdeniz University, Turkey); Selçuk Helhel (Akdeniz University, Turkey);*
- 10:00 The Theoretical Rationale of the Existence of Electric and Magnetic Fields Spreading Instantaneously  
*Andrew Chubykalo (Universidad Autónoma de Zacatecas, Mexico); Augusto Espinoza (Universidad Autónoma de Zacatecas, Mexico); R. Ivanov (Universidad Autónoma de Zacatecas, México);*

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**Session 3A8**  
**Magnetism, Magnetic and Multiferroic Materials, Structures and Devices**

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**Wednesday AM, August 22, 2012**

**Room H**

Organized by Alexander S. Sigov, Galina S. Makeeva  
Chaired by Anatoly B. Rinkevich

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- 08:40 Integrated Ferroelectrics: New Trends of Modern Information Technologies  
*Alexander S. Sigov (Moscow Institute for Radioengineering, Electronics and Automation, Russia);*
- 09:00 Design of Stripline Structure for Electromagnetic Characterization at Microwave Frequency  
*Ellen Yoshie Sudo Lutif (CTA, Brazil); Anderson Kenji Hirata (Institute for Advanced Studies — Applied Physics Division, Brazil); Alberto Jose de Faro Orlando (CTA, Brazil); Antonio Carlos da Cunha Migliano (CTA, Brazil);*

- 09:20 Nonlinear Dynamical Electromagnetic Relaxation in Lanthanum Manganite Toroid  
A. P. Nosov (*Institute of Metal Physics Ural Branch of Russian Academy of Sciences, Russia*); Anatoly B. Rinkevich (*Institute of Metal Physics Ural Division of Russian Academy of Sciences, Russia*);
- 09:40 Experimental Evidence for the Magneto-kinematic Effect  
Vladimir A. Leus (*Sobolev Institute of Mathematics, Russia*); Stephen Taylor (*University of Liverpool, UK*);
- 10:00 Investigation of Resonance Interactions of Microwaves with 3D Magnetic Nanocomposites Using the Probabilistic Model  
Galina S. Makeeva (*Penza State University, Russia*); Oleg A. Golovanov (*Penza State University, Russia*); Anatoly B. Rinkevich (*Institute of Metal Physics, Russia*);
- 10:20 Measured Permeability of Saturated Ferromagnetic Films: Deviations from Kittel's Equations  
Alexey V. Osipov (*Institute for Theoretical and Applied Electromagnetics, Russia*); I. T. Iakubov (*Institute for Theoretical and Applied Electromagnetics, Russia*); 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*); I. A. Ryzhikov (*Institute for Theoretical and Applied Electromagnetics (ITAE RAS), Russia*);
- 10:40 **Coffee Break**
- 11:00 Spin and Electric Polarization Waves in Dielectric Systems of Different Dimensions  
Pavel Aleksandrovich Andreev (*Moscow State University, Russian Federation*); L. S. Kuzmenkov (*Moscow State University, Russian Federation*);
- 11:20 Evidence of Strain-induced Ferroelectric Phase Transitions in Thin Films by Microwave Dielectric Resonator Technique  
Viktor Bovtun (*Institute of Physics ASCR, Czech Republic*); Valery Pashkov (*NTUU "Kyiv Polytechnic Institute", Ukraine*); Martin Kempa (*Institute of Physics ASCR, Czech Republic*); Stanislav Kamba (*Institute of Physics ASCR, Czech Republic*); Jan Petzelt (*Institute of Physics ASCR, Czech Republic*);
- 11:40 Shear Vibrations of Magnetostrictive-piezoelectric Film Structure  
Ksenia Valerievna Lavrentieva (*Novgorod State University, Russia*); Vladimir M. Petrov (*Novgorod State University, Russia*); R. V. Petrov (*Novgorod State University, Russia*);
- 12:00 Winter Magnons in Circular and Triangular Vortex State Permalloy Dots  
A. Lara (*Universidad Autónoma de Madrid, Spain*); Ahmad A. Awad (*Universidad Autónoma de Madrid, Spain*); Farkhad G. Aliev (*Universidad Autónoma de Madrid, Spain*); Konstantin Yu Guslienko (*Universidad del País Vasco, Spain*); V. Metlushko (*University of Illinois, USA*);
- 12:20 A Calibration Technique for Single-port Permeability Measurements at Microwaves  
Sergey N. Starostenko (*Institute for Theoretical and Applied Electromagnetics RAS, Russia*); Konstantin N. Rozanov (*Institute for Theoretical and Applied Electromagnetics, RAS, Russia*);
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- Session 3A9**  
**Poster Session 4**
- 
- Wednesday AM, August 22, 2012**  
**9:30 AM - 12:30 AM**  
**Room K**
- 
- 1 Impact of Temperature on the Electromagnetic Susceptibility of Operational Amplifiers  
Raul Fernández-García (*Universitat Politècnica de Catalunya, Spain*); Ignacio Gil (*Universitat Politècnica de Catalunya (UPC)-Barcelona Tech, Spain*);
- 2 A Theoretical Analysis of the Optical Feedback Noise Based on Multimode Model of Semiconductor Lasers  
Sazzad M. S. Imran (*Kanazawa University, Japan*); Minoru Yamada (*Kanazawa University, Japan*); Yuji Kuwamura (*Kanazawa University, Japan*);
- 3 Vacuum Ultraviolet Emission from Cubic Boron Nitride Single Crystals in Extremely Non-uniform Electric Field  
Gang Jia (*Jilin University, China*); Shuang Wang (*Jilin University, China*); Xiuhuan Liu (*Jilin University, China*); Feng Yang (*Jilin University, China*); Yanjun Gao (*Jilin University, China*); Zhanguo Chen (*Jilin University, China*);

- 4 Design of Failure-rate Test Method for Chip-type EMI Filter  
*Soon-Mi Hwang (Korea Electronics Technology Institute (KETI), Korea); Kwan-Hun Lee (Korea Electronics Technology Institute (KETI), Korea);*
- 5 Control of Coherence and Polarization of an Electromagnetic Beam by Means of Liquid Crystal Spatial Light Modulators  
*Carolina Rickenstorff-Parrao (Benemérita Universidad Autónoma de Puebla, México); Elías Flores-Cruz (Benemérita Universidad Autónoma de Puebla, México); Andrey S. Ostrovsky (Universidad Autónoma de Puebla, México);*
- 6 Simple Technique for Generating a Secondary Electromagnetic Source with Desired Degrees of Coherence and Polarization  
*Miguel A. Olvera-Santamaría (Benemérita Universidad Autónoma de Puebla, México); Andrey S. Ostrovsky (Universidad Autónoma de Puebla, México);*
- 7 Fast Algorithm for Computer Simulation of Optical Systems with Partially Coherent and Partially Polarized Illumination  
*Andrey S. Ostrovsky (Universidad Autónoma de Puebla, México); Paulo C. Romero-Soria (Universidad Autónoma de Puebla, México); Esteban Vélez-Juárez (Universidad Autónoma de Puebla, México);*
- 8 Self-assembled Monolayer with Hemispherical Structure for Terahertz (THz) Antireflection Technique  
*Dae-Sun Kim (Gwangju Institute of Science and Technology, South Korea); Dong-Hyun Kim (Gwangju Institute of Science and Technology, Korea); Se-hyun Hwang (Gwangju Institute of Science and Technology, Korea); Jeong-Min Woo (Gwangju Institute of Science and Technology, Korea); Jae-Hyung Jang (Gwangju Institute of Science and Technology (GIST), South Korea);*
- 9 Investigation of Electricity Quality in Ship Integrated Power System  
*N. F. Djararov (Technical University of Varna, Bulgaria); S. Z. Zlatev (Technical University of Varna, Bulgaria); M. B. Bonev (Technical University of Varna, Bulgaria); Z. G. Grozdev (Technical University of Varna, Bulgaria);*
- 10 The All-optical Logic Gates Based on Mach-Zehnder Interferometer Photonic Crystal Waveguides  
*Yaw-Dong Wu (National Kaohsiung University of Applied Sciences, Taiwan); Teng-Huei Zou (National Kaohsiung University of Applied Sciences, Taiwan, R.O.C.); Jian-Jang Lee (National Kaohsiung University of Applied Sciences, Taiwan); Tien-Tsorng Shih (National Kaohsiung University of Applied Sciences, Taiwan);*
- 11 Proposal for Large Mode Area Photonic Crystal Fibers  
*Yaw-Dong Wu (National Kaohsiung University of Applied Sciences, Taiwan); Jian-Jang Lee (National Kaohsiung University of Applied Sciences, Taiwan); Tien-Tsorng Shih (National Kaohsiung University of Applied Sciences, Taiwan);*
- 12 Broadband Terahertz Surface Relief Structure on Flexible Substrate  
*Dong-Hyun Kim (Gwangju Institute of Science and Technology, Korea); Dae-Sun Kim (Gwangju Institute of Science and Technology, South Korea); Se-hyun Hwang (Gwangju Institute of Science and Technology, Korea); Dae-Myeong Geum (Gwangju Institute of Science and Technology, South Korea); Jae-Hyung Jang (Gwangju Institute of Science and Technology (GIST), South Korea);*
- 13 Cantor Dust Zone Plates  
*Walter D. Furlan (Universitat de València, Spain); V. Ferrando (Universitat de València, Spain); Arnau Calatayud (Universidad Politècnica de València, Spain); F. Giménez (Universidad Politècnica de València, Spain); Juan A. Monsoriu (Universidad Politècnica de València, Spain);*
- 14 Analysis and Design of a UHF-band Harmonic Meter  
*Ahmad Reza Naserialiabadi (Amirkabir University of Technology, Iran); Gholamreza R. Moradi (Amirkabir University of Technology, Iran); A. Kheirdoost (Amirkabir University of Technology, Iran); Jalil-Agha Rashed-Mohassel (University of Tehran, Iran); R. Sarraf Shirazi (Amirkabir University of Technology, Iran);*
- 15 Design and Fabrication of RAS Using CNT Added Glass Fiber Composite Prepreg  
*Jae-Hwan Shin (KAIST, Republic of Korea); Hong-Kyu Jang (KAIST, Republic of Korea); Chun-Gon Kim (KAIST, Korea); Woo-Yong Lee (Agency for Defense Development, Republic of Korea); Yoon-Jong Shin (Shinsung Basic Materials, Republic of Korea);*
- 16 Nano Technology in Space and Spacedevices  
*Diyar Bajalan (Student, Austria);*

- 17 Nanotechnology and Health Future  
*Diyar Bajalan (Student, Austria);*
- 18 Nano Materials and Devices and Physical Property  
*Diyar Bajalan (Student, Austria);*
- 19 A Fiber Optic Sensor Integrated with Fuzzy Similarity Analysis to Evaluate Hydrocarbon Pollutant in Water  
*Isabella Palamara (University Mediterranea of Reggio Calabria, Italy); Diego Pellicano (University Mediterranea of Reggio Calabria, Italy); Mario Versaci (University Mediterranea of Reggio Calabria, Italy);*
- 20 High Performance Computation of Electrostatic and Magnetostatic fields in the KATRIN Experiment  
*Thomas Joseph Corona (University of North Carolina at Chapel Hill, USA); Joseph A. Formaggio (Massachusetts Institute of Technology, USA); Ferenc Gluck (Karlsruhe Institute of Technology, IEKP, Germany); John F. Wilkerson (University of North Carolina at Chapel Hill, USA);*
- 21 The Effect of over Voltages Generated by GIS on Nearby Transformers  
*Ibrahim Rida (University of Hail, Saudi Arabia); Mohamad Rahal (University of Hail, Saudi Arabia);*
- 22 Uncertainty Calculation for Phase Noise Optoelectronic Metrology Systems  
*Patrice Salzenstein (CNRS, UMR 6174, Laboratoire Associe au Laboratoire National de Metrologie et d'essais (LNE), France); Ekaterina Pavlyuchenko (CNRS, UMR 6174, Laboratoire Associe au Laboratoire National de Metrologie et d'essais (LNE), France);*
- 23 Electrophysical Investigation of the Ferroelectric Conductivity in BTO/LCMO Multilayers  
*A. M. Buryakov (Moscow State Technical University of Radioengineering, Electronics and Automation (MSTU-MIREA), Russia); M. S. Ivanov (Moscow State Technical University of Radioengineering, Electronics and Automation (MSTU-MIREA), Russia); Elena D. Mishina (Moscow State Technical University of Radioengineering, Electronics and Automation (MSTU-MIREA), Russia); V. T. Moshnyaga (Universitaet Goettingen, Germany);*
- 24 Enhanced Magnetization and Second Harmonic Generation in Multiferroic BST/NBFO Superstructures  
*K. A. Brekhov (Moscow State Technical University of Radioengineering, Electronics and Automation (MSTU-MIREA), Russia); M. S. Ivanov (Moscow State Technical University of Radioengineering, Electronics and Automation (MSTU-MIREA), Russia); N. E. Sherstyuk (Moscow State Institute of Radioengineering, Electronics and Automation (MSTU-MIREA), Russia); E. D. Mishina (Moscow State Technical University of Radioengineering, Electronics and Automation (MSTU-MIREA), Russia); V. M. Mukhortov (South Center RAS, Russia); V. T. Moshnyaga (Universitaet Goettingen, Germany);*
- 25 Plasmonic Effect on Metallic Nano Particles for the Efficiency Improvement of Amorphous Silicon Solar Cells  
*Jean Philippe Blondeau (University of Orleans, France);*
- 26 Broadband Emission from Diode-laser-pumped Ti:sapphire Crystal Fibers  
*K. Y. Hsu (National Taiwan University, Taiwan); S. C. Wang (National Taiwan University, Taiwan); D. Y. Jheng (National Taiwan University, Taiwan); T. S. Ho (National Taiwan University, Taiwan); C. C. Lai (National Taiwan University, Taiwan); Sheng-Lung Huang (National Taiwan University, Taiwan); P. S. Yeh (National Taiwan University of Science and Technology, Taiwan);*
- 27 Two Dimensional Nano Photonic Crystals with Metallic Rod and Dielectric Clad in Metallic Background  
*Abdolrasoul Gharaati (Payame Noor University (PNU), Iran); Zahra Roozitalab (Payame Noor University, Iran);*
- 28 The Study of Two Dimensional Photonic Crystal Made of Two Concentric Cylindrical Nano-layers of Dielectric with Negative Refraction Index  
*Abdolrasoul Gharaati (Payame Noor University (PNU), Iran); Leila Mohamad Ebrahimi (Payame Noor University (PNU), Iran);*
- 29 Investigation of Defect Modes on One-dimensional Ternary Metallic-dielectric Nano Photonic Crystal with Metallic Defect Layer  
*Abdolrasoul Gharaati (Payame Noor University (PNU), Iran); Hadis Azarshab (Payame Noor University (PNU), Iran);*

- 30 Modal Decomposition with Digital Holograms  
*Igor A. Litvin (CSIR National Laser Centre, South Africa); Angela Dudley (CSIR National Laser Centre, South Africa); Filippus S. Rou (CSIR National Laser Centre, South Africa); Andrew Forbes (CSIR, South Africa);*
- 31 Optimum Parameters for an Undersampled Digitally Heterodyned SFGPR  
*Doroteo Adirosi (Thales Alenia Space Italia, Italy); Giovanni Alberti (Consortium for Research on Advanced Remote Sensing Systems — CO.R.I.S.T.A., Italy); Giovanni Galiero (Consortium for Research on Advanced Remote Sensing Systems — CO.R.I.S.T.A., Italy);*
- 32 Switch Matrix Logic Implementation for Electrical Impedance Tomography Systems  
*Mohamad Rahal (University of Hail, Saudi Arabia); Ibrahim Rida (University of Hail, Saudi Arabia); Muhammad Usman (University of Hail, Kingdom of Saudi Arabia);*
- 33 Prediction of a New Superconductivity-like Effect in Galilean Reference Systems (Part II)  
*Namik Yener (Kocaeli University, Turkey);*
- 34 Allocation of Cognitive Radio Sensing Times Using Distributed Q-learning  
*Olivier Van den Biggelaar (Université Libre de Bruxelles (ULB), Belgium); Jean Michel Dricot (Université Libre de Bruxelles (ULB), Belgium); Philippe De Doncker (Université Libre de Bruxelles (ULB), Belgium); Francois Horlin (Université Libre de Bruxelles (ULB), Belgium);*
- 35 Dynamics of a Non-autonomous Bright and Dark Soliton in a Generalized Nonlinear Schrödinger Equation  
*Zhanying Yang (Northwest University, China); Lichen Zhao (Institute of Applied Physics and Computational Mathematics, China); Tao Zhang (Northwest University, China); Ruihong Yue (Ningbo University, China);*
- 36 Bright Chirp-free and Chirped Nonautonomous Solitons under Dispersion and Nonlinearity Management  
*Ruihong Yue (Ningbo University, China); Zhanying Yang (Northwest University, China); Lichen Zhao (Institute of Applied Physics and Computational Mathematics, China); Tao Zhang (Northwest University, China);*
- 37 Remote Sensing and Simulation Model for Crop Management  
*Jesus Soria-Ruiz (National Institute of Research for Forestry, Agriculture and Livestock (INIFAP), Mexico); A. Quijano-Carranza (National Institute of Research for Forestry, Agriculture and Livestock (INIFAP), Mexico); J. Macias-Cervantes (National Institute of Research for Forestry, Agriculture and Livestock (INIFAP), Mexico); P. Saucedo (National Institute of Research for Forestry, Agriculture and Livestock (INIFAP), Mexico); D. Gonzalez (National Institute of Research for Forestry, Agriculture and Livestock (INIFAP), Mexico); J. Quintana (National Institute of Research for Forestry, Agriculture and Livestock (INIFAP), Mexico); Yolanda Fernandez-Ordoñez (Colegio de Postgraduados, Mexico);*

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**Session 3P1**
**Advanced Photonics-based Devices and Equipment**


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**Wednesday PM, August 22, 2012**
**Room A**

Organized by Mikhail E. Belkin, Gefeson Mendes Pacheco

 Chaired by Vladimir L. Velichansky, Mikhail E. Belkin
 

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- 14:00 A Microwave Optoelectronic Oscillator: Mach-Zehnder Modulator or VCSEL Based Layout Comparison  
*Mikhail E. Belkin (Moscow State Technical University of Radio-Engineering, Electronics and Automation, Russian Federation); Alexey V. Loparev (Moscow State Technical University of Radio-Engineering, Electronics and Automation, Russian Federation);*
- 14:20 Passive Components Based on Two-dimensional Photonic Crystals  
*Tatiana N. Bakhvalova (Moscow State Institute of Radioengineering, Electronics and Automation (Technical University), Russia); I. V. Khmelitsky (Moscow State Institute of Radioengineering, Electronics and Automation (Technical University), Russia);*

- 14:40 Photonic-crystal Light Emitters with Quantum-wire Active Medium  
*Kirill A. Atlasov (Ecole Polytech Fed Lausanne, Switzerland); Pascal Gallo (Ecole Polytechnique Fédérale de Lausanne (EPFL), Switzerland); Milan Calic (Ecole Polytechnique Fédérale de Lausanne (EPFL), Switzerland); Marco Felici (Ecole Polytechnique Fédérale de Lausanne (EPFL), Switzerland); Karl Fredrik Karlsson (Ecole Polytechnique Fédérale de Lausanne (EPFL), Switzerland); Alok Rudra (Ecole Polytechnique Fédérale de Lausanne (EPFL), Switzerland); Benjamin Dwir (Ecole Polytechnique Fédérale de Lausanne (EPFL), Switzerland); Eli Kapon (Ecole Polytechnique Fédérale de Lausanne (EPFL), Switzerland);*
- 15:00 Deterministic Quantum Nano-photonics with Ordered Systems of Quantum Dots  
*Eli Kapon (Ecole Polytechnique Fédérale de Lausanne (EPFL), Switzerland);*
- 15:20 Characteristics of a Sub-terahertz Continuous Wave Generated by Photonics  
*Sungil Kim (Electronics and Telecommunications Research Institute, Korea);*
- 15:40 **Coffee Break**
- 16:00 Low-phase Noise Photonic Millimeter Wave Generation Using a Nonlinear MZM and Four-wave Mixing in Ultra Long SOAs  
*André Luiz De Souza Garcia (Universität Duisburg-Essen, Germany); Vitaly Rymanov (Universität Duisburg-Essen, Germany); Andreas Stöhr (Universität Duisburg-Essen, Germany);*
- 16:20 Extended Cavity Diode Lasers. Development and State-of-the-art  
*Vitaly V. Vassiliev (Lebedev Physical Institute, RAS, Russia); S. A. Zibrov (Lebedev Physical Institute, RAS, Russia); V. D. Kurnosov (POLYUS Research & Development Institute, Russia);*
- 16:40 Physical Package for Miniature Microwave Atomic Clock  
*Alexandr V. Sivak (National Research Nuclear University "MEPhI", Russia); Vitaly V. Vassiliev (Lebedev Physical Institute, RAS, Russia); S. A. Zibrov (Lebedev Physical Institute, RAS, Russia); V. I. Yudin (Siberian Branch of RAS, Russia); A. V. Taichenachev (Siberian Branch of RAS, Russia);*
- 17:00 Contrast and Quality Factor Enhancement of Dark Resonances for Miniature Microwave Atomic Clocks  
*A. V. Taichenachev (Siberian Branch of RAS, Russia); V. I. Yudin (Siberian Branch of RAS, Russia); D. I. Sevostianov (National Research Nuclear University "MEPhI", Russia); A. A. Zibrov (Harvard University, USA); A. S. Zibrov (Novosibirsk State University, Russia); Sergei A. Zibrov (Lebedev Physical Institute, RAS, Russia);*
- 17:20 Laser-pumped Cs Quantum Magnetometer  
*A. N. Kozlov (Pushkov Institute of Terrestrial Magnetism, Ionosphere and Radio Waves Propagation, Russia); Vitaly V. Shutov (National Research Nuclear University "MEPhI", Russia); V. L. Velichansky (National Research Nuclear University "MEPhI", Russia); V. I. Yudin (Siberian Branch of RAS, Russia); A. V. Taichenachev (Siberian Branch of RAS, Russia); E. V. Zhivun (University of California, USA);*
- 17:40 Transients of Absorption Spectra of Alkali Atoms in Coated Cells for Microwave Standards and Quantum Magnetometers  
*D. I. Sevostianov (National Research Nuclear University "MEPhI", Russia); A. N. Kozlov (Pushkov Institute of Terrestrial Magnetism, Ionosphere and Radio Waves Propagation, Russia); V. L. Velichansky (National Research Nuclear University "MEPhI", Russia); V. P. Yakovlev (National Research Nuclear University "MEPhI", Russia);*
- 18:00 Noise in Radiation of Single Mode Diode Laser in the Range from Audio to Microwave Frequencies. Transformation in Resonance Media  
*Dmitry I. Sevostianov (National Research Nuclear University "MEPhI", Russia); Vladimir L. Velichansky (National Research Nuclear University "MEPhI", Russia); A. N. Kozlov (Pushkov Institute of Terrestrial Magnetism, Ionosphere and Radio Waves Propagation, Russia); V. P. Yakovlev (National Research Nuclear University "MEPhI", Russia);*
- 18:20 Analytic Solution in Refractive Index Optimization Problem for Multichannel Fiber Bragg Grating  
*Anton V. Nemykin (Russian Academy of Sciences, Russia); David A. Shapiro (Russian Academy of Sciences, Russia);*



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**Session 3P2**
**Optics and Nanoplasmonics, Nano Scale  
Electromagnetics**


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**Wednesday PM, August 22, 2012**
**Room B**

 Chaired by Raphael Tsu, Sergei Popov
 

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- 14:00 Nanoplasmonics Turns on Inherent Linear Birefringence  
*Srinivasan Iyer (Royal Institute of Technology (KTH), Sweden); Sergei Popov (Royal Institute of Technology (KTH), Sweden); Ari T. Friberg (Royal Institute of Technology, Sweden);*
- 14:20 Single Atom Trapping of Light  
*Raphael Tsu (University of North Carolina at Charlotte, USA); Michael Anthony Fiddy (University of North Carolina, USA);*
- 14:40 Shaping the Fluorescent Emission by Localised and Propagating Plasmons in Hybrid Plasmonic-Photonic Crystals  
*Boyang Ding (Johannes Kepler University Linz, Austria); Nikita Arnold (Johannes Kepler University Linz, Austria); Klaus Piglmayer (Johannes Kepler University Linz, Austria); Calin Hrelescu (Johannes Kepler University Linz, Austria); Thomas A. Klar (Johannes Kepler University Linz, Austria);*
- 15:00 Nanostructuring under Ultrashort Pulse Laser Irradiation  
*Yasuhiko Shimotsuma (Kyoto University, Japan); Miki Nakabayashi (Kyoto University, Japan); Taiga Asai (Kyoto University, Japan); Yuya Yamada (Kyoto University, Japan); Masaaki Sakakura (Kyoto University, Japan); Kiyotaka Miura (Kyoto University, Japan);*
- 15:20 Fabrication of Metal Waveguides with High Aspect Ratios Using Highly Ordered Anodic Porous Alumina  
*Hideki Masuda (Tokyo Metropolitan University, Japan); Kazuyuki Nishio (Tokyo Metropolitan University, Japan); Toshiaki Kondo (Kanagawa Academy of Science and Technology, Japan);*
- 15:40 **Coffee Break**
- 16:00 Deeper to Nanoscale Via Fs Laser-matter Interaction and SPP Excitation  
*Vladimir Sergeevich Makin (Research Institute for Complex Testing of Opto-Electron Devices and Systems, Russia); R. S. Makin (Research Institute for Complex Testing of Opto-Electron Devices and Systems, Russia);*

- 16:20 Micro- and Nanostructures Via TEA CO<sub>2</sub> Laser Radiation Interaction with Semiconductors  
*Vladimir Sergeevich Makin (Research Institute for Complex Testing of Opto-Electron Devices and Systems, Russia); Yu. I. Pestov (Research Institute for Complex Testing of Opto-Electron Devices and Systems, Russia); V. E. Privalov (Research Institute for Complex Testing of Opto-Electron Devices and Systems, Russia);*
- 16:40 Gold Nanoparticles Chain Waveguide with Enhanced Transmission Method and Spectral Coding  
*C. Cinar (Yildiz Technical University, Turkey); Taner Sengor (Yildiz Technical University, Turkey);*
- 17:00 Inflective Nano-antenna  
*Taner Sengor (Yildiz Technical University, Turkey);*

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**Session 3P3**
**Electromagnetic Probing of Atmosphere and  
Ionosphere**


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**Wednesday PM, August 22, 2012**
**Room C**

Organized by Viacheslav Evgenievich Kunitsyn

 Chaired by Viacheslav Evgenievich Kunitsyn
 

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- 13:40 Using GNSS-signals and Radio-interferometry Technique for Study Wave Disturbances in the Ionosphere  
*Victor Ivanovich Zakharov (Lomonosov Moscow State University, Russia); Viacheslav Evgenievich Kunitsyn (M. V. Lomonosov Moscow State University, Russia); Maria Alexandrovna Titova (Lomonosov Moscow State University, Russia);*
- 14:00 Spatial Processing of Phase Measurements in Diffraction Tomography  
*Sergei I. Knizhin (Irkutsk State University, Russia); Yu. A. Kravtsov (Maritime University of Szczecin, Poland); M. V. Tinin (Irkutsk State University, Russia);*
- 14:20 Turbulent Parameters Estimation through the Phase Decomposition into the Zernike Polynomials  
*Victor Alexeevich Kulikov (A. M. Obukhov Institute of Atmospheric Physics Russian Academy of Sciences, Russia); M. S. Andreeva (M. V. Lomonosov Moscow State University, Russia); V. I. Shmalhausen (M. V. Lomonosov Moscow State University, Russia);*

- 14:40 Possibility of  $O^+/H^+$  Transition Level Determination from Irkutsk Incoherent Scatter Data and GPS Total Electron Content  
*B. G. Shpynev (Institute of Solar-Terrestrial Physics, Russia); K. D. Sergeevich (Institute of Solar-Terrestrial Physics, Russia);*
- 15:00 Radiosounding of Ionospheric Disturbances Generated by Exhaust Streams of the Transport Spacecraft "Progress" Engines  
*Vitaliy Victorovich Khakhinov (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); Valentin P. Lebedev (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); S. S. Alsatkin (Institute of Solar-Terrestrial Physics SB RAS, Russia); Denis Sergeevich Khabituev (Institute of Solar-Terrestrial Physics, Russia);*
- 15:20 Spatial Structure of Wave-like Disturbances in Mid-latitude Ionosphere Induced by HF-heating  
*Viacheslav Evgenievich Kunitsyn (M. V. Lomonosov Moscow State University, Russia); E. S. Andreeva (M. V. Lomonosov Moscow State University, Russia); M. O. Nazarenko (M. V. Lomonosov Moscow State University, Russia); Artem M. Padokhin (M. V. Lomonosov Moscow State University, Russia); M. A. Annenkov (M. V. Lomonosov Moscow State University, Russia); Vladimir L. Frolov (Radiophysical Research Institute, Russia); Georgy P. Komrakov (Radiophysical Research Institute, Russia); I. A. Bolotin (Radiophysical Research Institute, Russia);*
- 15:40 **Coffee Break**
- 16:00 Model Considerations of E-region Critical Frequency Data (foE) over Cyprus  
*Haris Haralambous (Frederick University, Cyprus);*
- 16:20 Investigation of Ionospheric Slab Thickness and Plasmaspheric TEC Using Satellite Measurements  
*Photos Vryonides (Frederick University, Cyprus); Christos Tomouzos (Frederick University, Cyprus); Giannis Pelopida (Frederick University, Cyprus); Haris Haralambous (Frederick University, Cyprus);*
- 16:40 Critical Frequencies Comparison of Ionosondes Data and High-orbital Radio Tomography Data in North America and Europe Regions  
*Viacheslav Evgenievich Kunitsyn (Moscow State University, Russia); I. A. Nesterov (M. V. Lomonosov Moscow State University, Russia); Yulia S. Tumanova (Moscow State University, Russia); Yuri N. Fedyunin (US Merchant Marine Academy, USA);*
- 17:00 Plasmas Excited by Extremely Non-uniform Electric Field Using Cubic Boron Nitride Single Crystals in the Atmosphere  
*Gang Jia (Jilin University, China); Shuang Wang (Jilin University, China); Zhanguo Chen (Jilin University, China); Feng Yang (Jilin University, China); Yanjun Gao (Jilin University, China); Xiuhuan Liu (Jilin University, China);*
- 17:20 The Doppler Effect at the Propagation of the Signal through the Multipath Radio Channel in HF Wave Band  
*Nikolay V. Ilyin (Institute of Solar-Terrestrial Physics of Siberian Branch of Russian Academy of Sciences, Russia); Maksim Sergeevich Penzin (Institute of Solar-Terrestrial Physics of the Siberian Branch of the RAS, Russia);*
- 17:40 The Real-time Forecast of HF Radio Channel on the Base of Ionosphere Sounding Data  
*Sergey N. Ponomarchuk (Institute of Solar-Terrestrial Physics SB RAS, Russia); V. P. Grozov (Institute of Solar-Terrestrial Physics SB RAS, Russia); M. S. Penzin (Institute of Solar-Terrestrial Physics SB RAS, Russia); G. V. Kotovich (Institute of Solar-Terrestrial Physics SB RAS, Russia);*

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**Session 3P4**
**Antenna Theory and Radiation**


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**Wednesday PM, August 22, 2012**
**Room D**

Organized by Feng Gao

 Chaired by Feng Gao
 

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- 14:00 A Novel Microstrip-fed Dielectric ROD Antenna Array with High Gain  
*Yufeng Liu (Sichuan University, China); Xing Chen (Sichuan University, China);*

- 14:20 On the Velocities of Motion of the Electromagnetic Field in the Near Zone of Elementary Radiators  
*O. V. Missevich (Institute of Nuclear Problems, Belarus); A. L. Kholmertskii (Belarus State University, Belarus); Valery A. Permyakov (Moscow Power Engineering Institute (Technical University), Russia); D. V. Sorokovik (Moscow Power Engineering Institute (Technical University), Russia);*
- 14:40 Design of Array Synthesis Horn Antenna for High Power Microwave Applications  
*Jae-Min Lee (Chungnam National University, Korea); Jong Myung Woo (Chungnam National University, South Korea);*
- 15:00 A Symmetrical Theory of Electromagnetism  
*Patricio E. Munhoz-Rojas (LACTEC — Instituto de Tecnologia para o Desenvolvimento, Brazil);*
- 15:20 A Method of PCI Planning in LTE Based on Genetic Algorithm  
*Hao Sun (China Mobile Design Institute, China); Nan Li (China Mobile Design Institute, China); Yanlei Chen (China Mobile Design Institute, China); Jiangbo Dong (China Mobile Design Institute, China); Na Liu (China Mobile Design Institute, China); Yunbo Han (China Mobile Design Institute, China); Wei Liu (China Mobile Design Institute, China);*
- 15:40 **Coffee Break**
- 16:00 Investigation of Adaptive Multi-antenna Switching Strategy in TD-LTE Systems  
*Wei Liu (China Mobile Design Institute, China); Kaikai Liu (China Mobile Group Design Institute Co. Ltd., China); Nan Li (China Mobile Design Institute, China); Jiangbo Dong (China Mobile Design Institute, China); Na Liu (China Mobile Design Institute, China); Yanlei Chen (China Mobile Design Institute, China); Hao Sun (China Mobile Design Institute, China); Yunbo Han (China Mobile Design Institute, China);*
- 16:20 A Circularly Polarized Printed Antenna with Modified Slots for RFID Reader  
*Eng. Ehab Mohamed Ghanem (Arab Academy for Science and Technology and Maritime Transport, Egypt); Esmat Abdel-Fattah Abdallah (Electronics Research Institute, Egypt); Mohamed Aboul El-Dahab (Arab Academy for Science and Technology and Maritime Transport, Egypt);*
- 16:40 A Novel Way for Designing Bifocal Reflector Antennas  
*A. N. Plastikov (National Research University “Moscow Power Engineering Institute”, Russia); B. L. Kogan (National Research University “Moscow Power Engineering Institute”, Russia);*
- 17:00 The Effects of the Tube Characteristics on the Performance of a Plasma Monopole Antenna  
*Fatemeh Sadeghikia (Iran University of Science and Technology, Iran); F. Hodjat-Kashani (Iran University of Science and Technology, Iran); Jalil-Agha Rashed-Mohassel (University of Tehran, Iran); S. J. Ghayoomeh-Bozorgi (Iran University of Science and Technology, Iran);*
- 17:20 Characteristics of Plasma Antennas under Radial and Axial Density Variations  
*Fatemeh Sadeghikia (Iran University of Science and Technology, Iran); Farrokh Hojat Kashani (Iran University of Science and Technology (IUST), Iran); Jalil-Agha Rashed-Mohassel (University of Tehran, Iran); S. J. Ghayoomeh-Bozorgi (Iran University of Science and Technology, Iran);*
- 17:40 New Bandwidth Limits for Dipoles  
*Rodney G. Vaughan (Simon Fraser University, Canada); Maryam Dehghani Estarki (Simon Fraser University, Canada);*
- 18:00 Circular Array of Inverted F Antennas  
*Fatemeh Sadeghikia (Iran University of Science and Technology, Iran); H. H. Mehne (Aerospace Research Institute, Iran); M. Ebrahimi (Aerospace Research Institute, Iran);*
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- Session 3P5a**  
**Asymptotic and Hybrid Methods in Electromagnetics**
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- Wednesday PM, August 22, 2012**  
**Room E**  
Organized by Frederic Molinet  
Chaired by Frederic Molinet, Thierry George
- 
- 14:00 Some Recent Extensions of the Exact Line Integral Representation of the Physical Optics Scattered Field  
*Frédéric Molinet (MOTHESIM, France);*
- 14:20 Diffraction by a Sharp Edge for an Electromagnetic Field Described by Summation of Gaussian Beams: The Ufimtsev Way  
*Jean-Marc Darras (CELUM, France); Thierry George (CELUM, France); Philippe Pouliguen (DGA/DS/MRIS, France);*
- 14:40 The Kirchhoff-type Formulas for the Time-dependent Electromagnetic Field in a Conducting Medium  
*Anatoly Serafimovich Ilinskiy (Lomonosov Moscow State University, Russia); Irina Germanovna Efimova (Moscow State University, Russia);*

15:00 High Frequency Diffraction by an Impedance Rectangle for Grazing Incidence  
*Anthony D. Rawlins (Brunel University, UK);*

15:40 **Coffee Break**

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**Session 3P5b**

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

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**Wednesday PM, August 22, 2012**

**Room E**

Organized by Victor Filippovich Kravchenko

Chaired by Victor Filippovich Kravchenko

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16:00 The Self-consistent Problem of Scattering and Generation of Oscillations by a Nonlinear Layer Taking into Account the Influence of Weak Fields at Multiple Frequencies

*L. Angermann (Institute of Mathematics, Germany); Vasyl V. Yatsyk (Usikov Institute of Radiophysics and Electronics of the National Academy of Sciences of Ukraine (IRE NASU), Ukraine); M. V. Yatsyk (Kharkov National University of Radio Electronics, Ukraine);*

16:20 Mathematical Modeling of Plane Chiral Waveguide Using Mixed Finite Elements

*Aleksandr Nikolaevich Bogolyubov (Moscow State University, Russia); Yulia V. Mukhartova (Moscow State University, Russia); Jiexing Gao (Moscow State University, Russia); N. A. Bogolyubov (Moscow State University, Russia);*

16:40 Avoiding Diffraction Order Singularity in Scattering Matrix Approach Used for Grating Modelling

*Andrey Petukhov (Moscow State University, Russia); M. K. Trubetskoy (Moscow State University, Russia); Aleksandr Nikolaevich Bogolyubov (Moscow State University, Russia);*

17:00 Projective Methods in Problems of Waveguide with Singularity

*Aleksandr Nikolaevich Bogolyubov (Moscow State University, Russia); Alexander Igorevich Erokhin (M.V. Lomonosov Moscow State University, Russia); I. E. Mogilevsky (M.V. Lomonosov Moscow State University, Russia);*

17:20 Wavelet Approximation of Discontinuous Solutions in EHD Model of Charged Jet Flow

*Oleg V. Kravchenko (Bauman Moscow State Technical University, Russian Federation); Dmitry V. Churikov (Kotel'nikov Institute of Radio Engineering and Electronics, Russian Academy of Sciences, Russian Federation);*

17:40 The Scanning Reflective Antenna with an Impedance Conformal Reflector in the Form of Laminated Structure the Semiconductor-dielectric-metal with Photonic Control

*Andrey Alekseevich Prilutskiy (JSC "Research-and-production Complex Scientific Research Institute of Long Distance Radiocommunication", Russia);*

18:00 Mathematical Models of Wave Diffraction Problems and the Numerical Method of Discrete Singularities

*Yuriy V. Gandel (Karazin Kharkov National University, Ukraine); Lutz Angermann (TU Clausthal, Germany);*

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**Session 3P6**

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

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**Wednesday PM, August 22, 2012**

**Room F**

Chaired by Makoto Tsutsumi, Mikhail I. Fuks

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13:40 A New Type of Wilkinson Power Divider with Triple-band Response Based on Dual Transmission Line

*Pu-Hua Deng (National University of Kaohsiung, Taiwan); Wen-Chian Lai (National University of Kaohsiung, Taiwan); Li-Chi Dai (National University of Kaohsiung, Taiwan); Yu-Ta Chen (National University of Kaohsiung, Taiwan); Sung-Yen Juang (National University of Kaohsiung, Taiwan);*

14:00 Nonlinear Phenomena in the Left-handed Ferrite Waveguides

*Makoto Tsutsumi (Fukui University of Technology, Japan); Kensuke Okubo (Okayama Prefectural University, Japan);*

14:20 Equivalent Network Extraction of a Coplanar Waveguide

*Rizwan Masood (National Engineering and Scientific Commission, Pakistan); Syed Ali Mohsin (The University of Faisalabad, Pakistan);*

- 14:40 Grounded CPW-WR12 Transition Design for 1.55  $\mu\text{m}$  Photodiode Based E-band Transmitter  
Merih Palandöken (*Technische Universität Berlin, Germany*); Sascha Lutzmann (*Technische Universität Berlin, Germany*); Vitaly Rymanov (*Universität Duisburg-Essen, Germany*); Andreas Stöhr (*Universität Duisburg-Essen, Germany*); Tolga Tekin (*Technische Universität Berlin, Germany*);
- 15:00 Integrating Equal-split Wilkinson Power Dividers and Coupled-line Bandpass Filters  
Pu-Hua Deng (*National University of Kaohsiung, Taiwan*); Li-Chi Dai (*National University of Kaohsiung, Taiwan*); Yu-Ta Chen (*National University of Kaohsiung, Taiwan*);
- 15:20 Wideband Microstrip Line Diplexer by Bandpass Filters Using Resonators Based on Coupled Line and Transmission Line with Ground  
Kosei Tanii (*The University of Electro-Communications, Japan*); Kouji Wada (*The University of Electro-Communications, Japan*);
- 15:40 **Coffee Break**
- 16:00 Analyse, Design and Development of 1–26.5 GHz TRL Microstrip Calibration Kit  
Ebrahim Feizi Barnaji (*Amirkabir University of Technology, Iran*); Gholamreza R. Moradi (*Amirkabir University of Technology, Iran*); Abdolali Abdipour (*Amirkabir University of Technology, Iran*);
- 16:20 Functional Digital Materials for Electromagnetic Structures and Circuits  
Nadya Peek (*MIT Center for Bits and Atoms, USA*); E. Rehmi Post (*MIT Center for Bits and Atoms, USA*); Neil Gershenfeld (*Massachusetts Institute of Technology, USA*);
- 16:40 Full-wave Modeling of Open Subwavelength Resonator with Metamaterial  
A. P. Smirnov (*Lomonosov Moscow State University, Russia*); A. N. Semenov (*Lomonosov Moscow State University, Russia*); D. O. Ignatyeva (*Lomonosov Moscow State University, Russia*); A. P. Sukhorukov (*Lomonosov Moscow State University, Russia*);
- 17:00 Multidimensional  $S$ -parameters: Modeling, Measurement, Identification and Computer-aided Design of Nonlinear Microwave Circuits  
Sergey Michailovich Nikulin (*Alekseev's Nizhny Novgorod State Technical University, Russia*); Andrey Aleksandrovich Terentyev (*Alekseev's Nizhny Novgorod State Technical University, Russia*); Irina Pavlovna Shishkina (*Alekseev's Nizhny Novgorod State Technical University, Russia*);
- 17:40 Phase Locking and Phase Control in Oscillators Using a Short External Signal  
Mikhail I. Fuks (*University of New Mexico, USA*); Edl Schamiloglu (*University of New Mexico, USA*); Michael I. Petelin (*Institute of Applied Physics, Russia*);
- 18:00 Characteristics of Nano-oscillators Loaded by Metamaterials  
Ansar Safin (*National Research University "Moscow Power Engineering Institute", Russia*); Fedor Kovalev (*National Research University "Moscow Power Engineering Institute", Russia*); Alexey Andreevich Basharin (*Institute of Electronic Structure and Laser (IESL), Greece*);
- 18:20 Analysis of Embedded-silicon-substrate Impact on CiSP Design  
Jang-Hoon Lee (*Soongsil University, Korea*); Jinho Song (*Soongsil University, Korea*); Jae-Kyung Wee (*Soongsil University, Korea*); In-Chae Song (*Soongsil University, Korea*);
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- Session 3P7a**  
**Smart Functional Materials for**  
**Non-destructive Control and Stress**  
**Monitoring**
- 
- Wednesday PM, August 22, 2012**  
**Room G**  
Organized by Arkady P. Zhukov, Larissa V. Panina  
Chaired by Arkady P. Zhukov
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- 14:00 A MEG Measurement Using Pico-Tesla Sensitivity Amorphous Wire Magneto-impedance Sensor for Brain Activity Evaluation  
Tsuyoshi Uchiyama (*Nagoya University, Japan*); Kaneko Mohri (*Nagoya Industrial Science Research Institute (NISRI), Japan*); Shinsuke Nakayama (*Nagoya University, Japan*);

- 14:20 **Ferromagnetic Microwire Usage for Magnetic Tags**  
*Sergey Gudoshnikov (Pushkov Institute of Terrestrial Magnetism, Ionosphere and Radio Wave Propagation, Russian Academy of Sciences (IZMIRAN), Russia); Nikolai A. Usov (Ionosphere and Radio Wave Propagation, Russian Academy of Sciences, (IZMIRAN), Russia); Andrey Ignatov (National University of Science and Technology "MISiS", Russia); Vadim Tarasov (National University of Science and Technology "MISiS", Russia); Arkady P. Zhukov (Universidad del Pais Vasco, Spain); Valentina Zhukova (Universidad del Pais Vasco, Spain);*
- 14:40 **GMI Effect in Co-based Amorphous Ribbons Obtained under the Action of a Magnetic Field**  
*L. González (Universidad de Oviedo, Spain); T. Sánchez (Universidad de Oviedo, Spain); J. D. Santos (Universidad de Oviedo, Spain); M. L. Sánchez (Universidad de Oviedo, Spain); B. Hernando (Universidad de Oviedo, Spain); A. Chizhik (Universidad del País Vasco, Spain); L. Domínguez (Universidad del País Vasco, Spain); J. M. Blanco (Universidad del Pais Vasco, Spain); Valentina Zhukova (Universidad del Pais Vasco, Spain); Mihail Ipatov (Universidad del Pais Vasco, Spain); Arkady P. Zhukov (Universidad del Pais Vasco, Spain); Julian Gonzalez (Universidad del Pais Vasco, Spain);*
- 15:00 **Tailoring of Frequency and Magnetic Field Dependence of Giant Magnetoimpedance Effect in Thin Wires**  
*Arcady P. Zhukov (Universidad del Pais Vasco, Spain); Mihail Ipatov (Universidad del Pais Vasco, Spain); Valentina Zhukova (Universidad del Pais Vasco, Spain);*
- 15:20 **Recent Interest in Magnetolectric/Multiferroic Hexagonal Ferrites**  
*Robert C. Pullar (Universidade de Aveiro, Portugal); Marco Pinheiro De Oliveira (Universidade de Aveiro, Portugal); João Amaral (Universidade de Aveiro, Portugal);*
- 15:40 **Coffee Break**

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**Session 3P7b**  
**Various Models for Electrodynamics and Applications to Moving Media**

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**Wednesday PM, August 22, 2012**

**Room G**

Organized by Dan Censor, Burak Polat

Chaired by Dan Censor, Burak Polat

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- 16:00 **EM Wave Scattering by Objects Moving on Bowditch-Lissajous Trajectories**  
*Dan Censor (Ben-Gurion University of the Negev, Israel);*
- 16:20 **Relativistic Longitudinal Green's Function in the Presence of a Moving Planar Dielectric-Magnetic Discontinuity**  
*Tatiana Danov (Ben-Gurion University of the Negev, Israel); Timor Melamed (Ben-Gurion University of the Negev, Israel);*
- 16:40 **Scattering of Gaussian-beams and Pulsed-beams from a Fast Moving Planar Dielectric Magnetic Half-space**  
*Coby Maron (Ben-Gurion University of the Negev, Israel); Timor Melamed (Ben-Gurion University of the Negev, Israel);*
- 17:00 **The Model of Wave Propagation in Classical Physics**  
*Siwei Luo (Southern Illinois University, USA);*
- 17:20 **Prediction of a New Superconductivity-like Effect in Galilean Reference Systems (Part I)**  
*Namik Yener (Kocaeli University, Turkey);*
- 17:40 **Hertzian Electrodynamics. Historical Aspects, New Theoretical Developments and Applications to Canonical Bodies in Euclidean Motion**  
*Burak Polat (Trakya University, Turkey);*

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**Session 3P9**  
**Poster Session 5**

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**Wednesday PM, August 22, 2012**

**14:30 PM - 17:30 PM**

**Room K**

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- 1 **Satellite Monitoring for Energy Transfer Process of Tsunamiogenic Earthquake**  
*Shigehisa Nakamura (Kyoto University, Japan);*
- 2 **Monitoring for Geomagnetic Reversal of the Planet Earth**  
*Shigehisa Nakamura (Kyoto University, Japan);*

- 3 Monitoring for Inclination Stability of the Planet Magnetic Axis Normal to the Solar Equatorial Plane  
*Shigehisa Nakamura (Kyoto University, Japan);*
- 4 Electromagnetic Nondestructive Testing in Cracked Defects of Oil-gas Casing Based on Ant Colony Neural Network  
*Wei Zhang (University of Electronic Science and Technology of China, China); Yibing Shi (University of Electronic Science and Technology of China, China); Yanjun Li (University of Electronic Science and Technology of China, China); Zhigang Wang (University of Electronic Science and Technology of China, China);*
- 5 Superresolution: Data Mining  
*Boris A. Lagovsky (Moscow State Institute of Radio Engineering and Automation (Technical University), Russia);*
- 6 Focusing GPR Images Collected from Archaeological Investigations along the “Basilian Monks’ Path of Faith” (Aspromonte National Park — Southern Calabria, Italy): Analysis of the Performances of Different Strategies  
*Giovanni Angiulli (University Mediterranea, Italy); Vincenzo Barrile (University Mediterranea of Reggio Calabria, Italy); Domenico De Carlo (University Mediterranea, Italy); Tommaso Isernia (Mediterranea University of Reggio Calabria, Italy); Annalisa Sgro (University of Mediterranea, Italy);*
- 7 Nested BiCGSTAB to Solve Complex Linear Systems Arising from Discretization of EFIE  
*Giovanni Angiulli (University Mediterranea, Italy); Salvatore Calcagno (University Mediterranea of Reggio Calabria, Italy); Domenico De Carlo (University Mediterranea, Italy); A. Sgro (University Mediterranea, Italy);*
- 8 Comparison of Different Metaheuristic Optimization Methods’ Capability in Two Dimensional Inverse Scattering  
*Maysam Haghparast (K. N. Toosi University of Technology, Iran); Seyed Abdollah Mirtaheri (K. N. Toosi University of Technology, Iran); Mohammad Sadegh Abrishamian (K. N. Toosi University of Technology, Iran);*
- 9 Localization and Electrical Parameters Estimation of a 2D Mass Using a 2 Step Method Using FDTD  
*Maysam Haghparast (K. N. Toosi University of Technology, Iran); Seyed Abdollah Mirtaheri (K. N. Toosi University of Technology, Iran); Mohammad Sadegh Abrishamian (K. N. Toosi University of Technology, Iran);*
- 10 Reconstruction of 1-D Dielectric Scatterer with Cosine and Spline Expansions Using Differential Evolution and Particle Swarm Optimization  
*Maysam Haghparast (K. N. Toosi University of Technology, Iran); Seyed Abdollah Mirtaheri (K. N. Toosi University of Technology, Iran); Mohammad Sadegh Abrishamian (K. N. Toosi University of Technology, Iran);*
- 11 GOSAT Data Processing for Space-based Carbon Dioxide Retrievals with PPDF-based Method to Account for Atmospheric Light Scattering  
*Sergey L. Oshchepkov (National Institute for Environmental Studies, Japan); Andrey I. Bril (National Institute for Environmental Studies, Japan); Tatsuya Yokota (National Institute for Environmental Studies, Japan); Yukio Yoshida (National Institute for Environmental Studies, Japan); Isamu Morino (National Institute for Environmental Studies, Japan); T. Matsunaga (National Institute for Environmental Studies, Japan); D. Wunch (California Institute of Technology, USA); G. Toon (California Institute of Technology, USA); C. O’Dell (Colorado State University, USA); A. Butz (Karlsruhe Institute of Technology, Germany); H. Boesch (University of Leicester, UK); N. Eguchi (Kyushu University, Japan); Vladimir P. Budak (Moscow Power-Engineering Institute (MPEI), Russia); Alexander Lukyanov (Central Aerological Observatory, Russia); A. Ganshin (Central Aerological Observatory, Russia); Ruslan Zhuravlev (Central Aerological Observatory, Russia); The TCCON Team (, );*
- 12 Airship Radar System Modeling and Simulation  
*Li Zhang (Beihang University, China); Jingwen Li (Beihang University, China);*
- 13 Absorption Dependencies of Dipolar Glass Cylindrical Waveguide Coated by SiC on Temperatures and Coated Layer Thicknesses  
*Liudmila Nickelson (Center for Physical Sciences and Technology, Lithuania); A. Bubnelis (Center for Physical Sciences and Technology, Lithuania); Steponas Asmontas (Semiconductor Physics Institute, Lithuania);*
- 14 Dispersion Characteristics of Circular Layered Zero-index Anisotropic Metamaterial — Semiconductor Waveguides  
*Steponas Asmontas (Semiconductor Physics Institute, Lithuania); A. Bubnelis (Center for Physical Sciences and Technology, Lithuania); Liudmila Nickelson (Center for Physical Sciences and Technology, Lithuania);*

- 15 Image Formation and Coregistration via Non-uniform FFTs in SAR Interferometry  
*Amedeo Capozzoli (Università di Napoli Federico II, Italy); Claudio Curcio (Università di Napoli Federico II, Italy); Angelo Liseno (Università di Napoli Federico II, Italy);*
- 16 Hybrid Method for Analysis of Conformal Ferrite Guides  
*Adam Kusiek (Gdansk University of Technology, Poland); Wojciech Marynowski (Gdansk University of Technology, Poland); Jerzy Mazur (Gdansk University of Technology, Poland);*
- 17 Optimized Geometry Wedge Absorbers  
*Sedef Kent (Istanbul Technical University, Turkey); Ibrahim Catalkaya (Istanbul Technical University, Turkey);*
- 18 GMI Effect in Glass-coated Microwires with Nanocrystalline Structure  
*Valentina Zhukova (Universidad del Pais Vasco, Spain); A. Talaat (UPV/EHU, Spain); L. González (Universidad de Oviedo, Spain); S. Kaloshkin (National University of Science and Technology "MISIS", Russia); M. Churyukanova (National University of Science and Technology "MISIS", Russia); B. Hernandez (Universidad de Oviedo, Spain); A. Zhukov (UPV/EHU, Spain);*
- 19 Two-dimensional Sensor Design for Vehicular Navigation Applications  
*George Dekoulis (Frederick University, Cyprus); Haris Haralambous (Frederick University, Cyprus);*
- 20 Defects Characterization in CFRP Materials Industrial and Civil Applications  
*Diego Pellican (University Mediterranea of Reggio Calabria, Italy); Isabella Palamara (University Mediterranea of Reggio Calabria, Italy); Mario Versaci (University Mediterranea of Reggio Calabria, Italy);*
- 21 Ferroelectric Polarization Switching in BST/NBFO Planar Structures Studied by Scanning Near-field Optical Microscopy  
*K. A. Brekhov (Moscow State Technical University of Radioengineering, Electronics and Automation (MSTU-MIREA), Russia); S. D. Lavrov (Moscow State Technical University of Radioengineering, Electronics and Automation (MSTU-MIREA), Russia); N. E. Sherstyuk (Moscow State Institute of Radioengineering, Electronics and Automation (MSTU-MIREA), Russia); E. D. Mishina (Moscow State Technical University of Radioengineering, Electronics and Automation (MSTU-MIREA), Russia); V. Muhortov (South Center of Russian Academy of Science, Russia);*
- 22 Coupling Matrix Synthesis by Optimization with Cost Function Based on Daubechies D4 Wavelet Transform  
*Jerzy Julian Michalski (Telemobile Electronics Ltd., Poland); Jacek Gulgowski (Telemobile Electronics Ltd., Poland); Tomasz Kacmajor (Telemobile Electronics Ltd., Poland); Mike Piatek (Telemobile Electronics Ltd., Poland);*
- 23 Analysis of Electromagnetic Wave Scattering from the Surface of Double Periodic Arrangements of Metalodielectric Cylinders  
*Rafal Lech (Gdansk University of Technology, Poland); Adam Kusiek (Gdansk University of Technology, Poland); J. Mazur (Gdansk University of Technology, Poland);*
- 24 Analysis of Periodically Loaded Rectangular Waveguide  
*Rafal Lech (Gdansk University of Technology, Poland); Adam Kusiek (Gdansk University of Technology, Poland); J. Mazur (Gdansk University of Technology, Poland);*
- 25 A Quaternion Widely Linear One-stage Prediction Algorithm  
*Rosa María Fernandez-Alcala (University of Jaen, Spain); Jesus Navarro-Moreno (University of Jaen, Spain); Juan C. Ruiz-Molina (University of Jaen, Spain); Cyrus Jahanchahi (Imperial College London, UK); Dahir H. Dini (Imperial College London, UK);*
- 26 Efficient Root Tracing Method Employing Simplex Chain Vertices Searching Procedure  
*Piotr Kowalczyk (Gdansk University of Technology, Poland);*
- 27 Raindrop Size Model Using Method of Moment and Its Applications in Radio Systems  
*Pius Adewale Owolawi (Mangosuthu University of Technology, South Africa);*



- 28 Application of the Extended Bi-characteristic System Method at Radio-wave Propagation Modeling in the Ionosphere of the Earth  
*Kseniya S. Kiryanova (Moscow Physico-Technical Institute, Russia); Andrew S. Kryukovsky (MIPT, Russia); Dmitry S. Lukin (Moscow Physico-Technical Institute, Russia); Dmitry V. Rastyagaev (MIPT, Russia);*
- 29 Magnetoelectric Magnetic Field Sensors  
*Ivan N. Soloviev (Novgorod State University, Russia); Mirza Imamovich Bichurin (Novgorod State University, Russia); R. V. Petrov (Novgorod State University, Russia);*
- 30 Satellite Remote Sensing of Carbon Monoxide  
*Jane J. Liu (Nanjing University, China); Aijun Ding (Nanjing University, China); Ke Ding (Nanjing University, China); Yong Han (Nanjing University, China); Jian-Cheng Shi (Institute of Remote Sensing Applications, Chinese Academy Of Sciences, China); Liangfu Chen (Institute of Remote Sensing Applications, Chinese Academy Of Sciences, China); Tianliang Zhao (Nanjing University of Information Science & Technology, China);*
- 31 The Theory of Wave Propagation Problems in Propagation, Focusing and Diffraction of Radio Waves in Inhomogeneous Media  
*Andrew S. Kryukovsky (MIPT, Russia); Dmitry S. Lukin (Moscow Physico-Technical Institute, Russia); Dmitry V. Rastyagaev (MIPT, Russia);*
- 32 Anomalous Light Scattering by Plasmonic Nanoclusters  
*Michael I. Tribelsky (M. V. Lomonosov Moscow State University, Russia); Boris S. Luk'yanchuk (Data Storage Institute, Singapore);*
- 33 Peculiarities of the Fano Resonances in Light Scattering by Obstacles  
*Michael I. Tribelsky (M. V. Lomonosov Moscow State University, Russia); S. Flach (Max-Planck-Institut für Physik komplexer Systeme, Germany); Andrey E. Miroshnichenko (Australian National University, Australia); Yuri S. Kivshar (Australian National University, Australia);*
- 34 The Field Finite-difference Approach and Applications in Computational Electrostatics  
*Dusan Z. Djurdjevic (University of Pristina, Serbia);*
- 35 Electromagnetic Sensing of Partial Discharge in Air-insulated Medium Voltage Switchgear  
*Bo Zheng (RMIT University, Australia); Alexe Bojouschi (RMIT University, Australia);*
- 36 Anderson Localization of Light and Disorder-enhanced Transport  
*Mordechai Segev (Technion — Israel Institute of Technology, Israel); Liad Levi (Technion — Israel Institute of Technology, Israel); Mikael Rechtsman (Technion — Israel Institute of Technology, Israel);*
- 37 Optimal Amplification of Nonautonomous Solitons  
*R. Peña (Benemerita Universidad Autónoma de Puebla, México); Celso Hernandez-Tenorio (Instituto Tecnológico de Toluca, México);*
- 38 Transformations of Field Equations in Octonion Spaces  
*Zi-Hua Weng (Xiamen University, China);*
- 39 Electromagnetic and Gravitational Fields in the Curved Octonion Spaces  
*Zi-Hua Weng (Xiamen University, China);*
- 40 On-body Textile Monopole Antenna Characterisation for Body-centric Wireless Communications  
*Hasliza A. Rahim (Universiti Malaysia Perlis (UniMAP), Malaysia); Mohd Fareq Bin Abdul Malek (University Malaysia Perlis (UniMAP), Malaysia); Ismahayati Adam (Universiti Malaysia Perlis (UniMAP), Malaysia); Sahadah Ahmad (Universiti Malaysia Perlis (UniMAP), Malaysia); Nur Baya M. Hashim (Universiti Malaysia Perlis (UniMAP), Malaysia); Peter S. Hall (University of Birmingham, UK);*
- 41 Design and Simulation of a Wearable Textile Monopole Antenna for Body Centric Wireless Communications  
*Hasliza A. Rahim (Universiti Malaysia Perlis (UniMAP), Malaysia); Mohd Fareq Bin Abdul Malek (University Malaysia Perlis (UniMAP), Malaysia); Ismahayati Adam (Universiti Malaysia Perlis (UniMAP), Malaysia); Sahadah Ahmad (Universiti Malaysia Perlis (UniMAP), Malaysia); Nur Baya M. Hashim (Universiti Malaysia Perlis (UniMAP), Malaysia); Peter S. Hall (University of Birmingham, UK);*
- 42 An Interpretation of a Classical Diffraction Problem of Electromagnetism with a Fractional Derivative  
*Patrick Vaudon (University of Limoges, France);*

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**Session 4A1**
**Electromagnetic Theory and Design on the Optical Dispersive Materials, Invisible Cloak and Photonic Crystals**


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**Thursday AM, August 23, 2012**
**Room A**

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

 Chaired by Yao-Huang Kao
 

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- 09:00 Gradient Index Metamaterial with Arbitrary Loss Factors in RHM and LHM Media: The Case of Constant Impedance throughout the Structure  
*Mariana Dalarsson (Royal Institute of Technology, Sweden); Martin Karl Norgren (Royal Institute of Technology, Sweden); Tatjana Asenov (University of Niš, Serbia); Nebojsa Doncov (University of Niš, Serbia);*
- 09:20 Finite Element Method Can Not be Used for Full Wave Simulation in GL Cloak  
*Ganquan Xie (GL & Hunan Super Computational Sciences Center, China); Jianhua Li (GL Geophysical Laboratory, USA); Qing Xie (Hunan Super Computational Science Center, China);*
- 09:40 A Dual Band Planar Metamaterial Based on Hybrid Structures in Terahertz Regime  
*Sajid Hussain (Gwangju Institute of Science and Technology, South Korea); Jae-Yeong Lee (Gwangju Institute of Science and Technology (GIST), Korea); Jae-Hyung Jang (Gwangju Institute of Science and Technology (GIST), South Korea);*
- 10:00 Effect of Random Variations of Both the Composition and Thickness on Photonic Band Gap of One-dimensional Plasma Photonic Crystal  
*Vladimir V. Romyantsev (Donetsk Institute for Physics and Engineering, National Academy of Sciences, Ukraine); S. A. Fedorov (Donetsk Institute for Physics and Engineering, National Academy of Sciences, Ukraine);*
- 10:20 Resonant-cascoded Micro-strip Lines Analog to Electromagnetic Induced Transparency  
*Teh-Chau Liao (Chung Hua University, Taiwan, R.O.C.); Yao-Huang Kao (Chung-Hua University, Taiwan, R.O.C.); Tzong-Jer Yang (Chung-Hua University, Taiwan, R.O.C.);*
- 10:40 **Coffee Break**

- 11:00 A Kind of Band Pass Filter Based on Low Frequency Spoof Surface Plasmon Polaritons  
*Yao-Huang Kao (Chung-Hua University, Taiwan, R.O.C.); Ing-Jar Hsieh (Chung Hua University, Taiwan, R.O.C.); D. J. Hou (Chung Hua University, Taiwan); T. J. Yang (Chung Hua University, Taiwan, R.O.C.); J. J. Wu (Chung Hua University, Taiwan);*
- 11:20 Chinese Poet Shi Su Had Earliest Relativist Idea in the History and in the World  
*Ganquan Xie (GL & Hunan Super Computational Sciences Center, China); Jianhua Li (GL Geophysical Laboratory, USA); Feng Xie (GL Geophysical Laboratory, USA); Lee Xie (GL Geophysical Laboratory, USA);*
- 11:40 GL EM Inversion Method For MRI Imaging  
*Jianhua Li (GL Geophysical Laboratory, USA); Ganquan Xie (GL & Hunan Super Computational Sciences Center, China); Feng Xie (GL Geophysical Laboratory, USA); Lee Xie (GL Geophysical Laboratory, USA);*
- 12:00 The GL Electromagnetic Modeling and Electromagnetic Education  
*Ganquan Xie (GL & Hunan Super Computational Sciences Center, China); Jianhua Li (GL Geophysical Laboratory, USA); Qing Xie (Hunan Super Computational Science Center, China); Lee Xie (GL Geophysical Laboratory, USA); Feng Xie (GL Geophysical Laboratory, USA); Hong Jun Li (Wang Cheng Second High School, China);*

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**Session 4A2a**
**Present and Future of TeraHertz Science & Technology including Application in Remote Sensing, Imaging, and Communications**


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**Thursday AM, August 23, 2012**
**Room B**

Organized by Rachid Talhi

 Chaired by Rachid Talhi
 

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- 09:00 Plasma Effects in Graphene-based Electro-optical Modulators  
*Maxim Ryzhii (The University of Aizu, Japan); Taiichi Otsuji (Tohoku University, Japan); S. Yurchenko (Bauman Moscow State Technical University, Russia); N. Ryabova (Bauman Moscow State Technical University, Moscow); Victor Ryzhii (The University of Aizu, Japan); Michael S. Shur (Rensselaer Polytechnic Institute, USA);*

- 09:20 Terahertz Spectral Analysis and Detection Based on High- $T_c$  Josephson Junctions  
*V. N. Gubankov (Kotel'nikov Institute of Radio Engineering and Electronics of Russian Academy of Sciences, Russian Federation); M. Lyatti (Kotel'nikov Institute of Radio Engineering and Electronics of Russian Academy of Sciences, Russian Federation); Yuriy Y. Divin (Kotel'nikov Institute of Radio Engineering and Electronics of Russian Academy of Sciences, Russian Federation); K. Urban (Peter Gruenberg Institute, Research Centre Juelich, Germany);*
- 09:40 Novel Terahertz Applications: From Imaging to Waveguiding  
*Roberto Morandotti (Institute National de la Recherche Scientifique, Canada); M. Clerici (Institute National de la Recherche Scientifique, Canada); M. Shalaby (Institute National de la Recherche Scientifique, Canada); M. Peccianti (INRS-EMT, Canada); G. Sharma (Institute National de la Recherche Scientifique, Canada); Ibraheem Al-Naib (INRS-EMT, Canada); P. Tannouri (Institute National de la Recherche Scientifique, Canada); P.-L. Lavert (Institute National de la Recherche Scientifique, Canada); F. Vidal (INRS-EMT, Canada); T. Ozaki (INRS-EMT, Canada);*
- 10:00 PCB Inspection Using Terahertz Scanning Probe Microscopy  
*Harun Cetinkaya (TUBITAK-MRC, Turkey); Mustafa Tekbas (TUBITAK-MRC, Turkey); Alexey A. Vertiy (TUBITAK-MRC, Turkey);*
- 10:20 Detected Low Contrast Objects with Passive Radiometric Imaging System  
*Alexey A. Vertiy (TUBITAK-MRC, Turkey); A. Pavlyuchenko (TUBITAK-MRC, Turkey);*
- 10:40 **Coffee Break**
- 11:20 Procedure of Near Ground Propagation Model Development for Pine Tree Forest Environment  
*Osman Kurnaz (Akdeniz University, Turkey); Murat Bitirgan (Akdeniz University, Turkey); Selçuk Helhel (Akdeniz University, Turkey);*
- 11:40 Normalized Differenzial Spectral Attenuation among Co-rotating LEO Satellites: Performance Analysis for Estimating the Tropospheric Water Vapor  
*Fabrizio Cuccoli (Università di Firenze, Italy); Luca Facheris (Università di Firenze, Italy); Fabrizio Argenti (Università di Firenze, Italy);*
- 12:00 The Earthquake-related Disturbances in Ionosphere and the First Seismo-electromagnetism Satellite in China  
*Xuhui Shen (China Earthquake Administration, China); Xuemin Zhang (China Earthquake Administration, China); Lanwei Wang (China Earthquake Administration, China); Huaran Chen (China Earthquake Administration, China); Yun Wu (Earthquake Administration of Hubei Province, China); Shigeng Yuan (DFH Satellite Co. Ltd., China); Junfeng Shen (Chinese University of Geosciences, China); Shufan Zhao (Chinese Academy of Sciences, China); Jiadong Qian (China Earthquake Administration, China); Jianhai Ding (China Earthquake Administration, China);*

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**Session 4A3**
**Modern Aspects of Wave Multiple Scattering in Dense Random and Ordered Media**


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**Thursday AM, August 23, 2012**
**Room C**

Organized by Yuru Nicolaevich Barabanenkov

Chaired by Yuru Nicolaevich Barabanenkov

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**Session 4A2b**
**Earth Electromagnetic Environment and Radiowave Propagation & Scattering: Modelling, Observation and Measurements**


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**Thursday AM, August 23, 2012**
**Room B**

Organized by Rachid Talhi

Chaired by Rachid Talhi

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- 11:00 Review of Man-made Waves Observed in the Ionosphere  
*Michel Parrot (LPC2E/CNRS, France); Rachid Talhi (University of Tours, France);*
- 09:00 Dyson Equation Technique for Homogenized Electromagnetic Crystals with Unit Cell formed by not Small Coupled Nonmagnetic Scatterers  
*Yuru Nicolaevich Barabanenkov (V. A. Kotel'nikov Institute of Radio Engineering and Electronics, Russian Academy of Sciences, Russia); Mikhail Yurievitch Barabanenkov (Institute of Microelectronics Technology and High Purity Materials, Russian Academy of Sciences, Russia); Ivan V. Lisenkov (Kotel'nikov Institute of Radio Engineering and Electronics of RAS, Russia);*

- 09:20 Dyson Self-consistent Exact Equations for Averaged Wave Electric Field and Its Local Version inside Dense Random Medium of Dielectric Nonmagnetic Particles  
*Yuru Nicolaevich Barabanenkov (V. A. Kotelnikov Institute of Radio Engineering and Electronics, Russian Academy of Sciences, Russia); Mikhail Yurievitch Barabanenkov (Institute of Microelectronics Technology and High Purity Materials, Russian Academy of Sciences, Russia);*
- 09:40 Magnetic Response of Random Ensemble of Small Non-magnetic Particles in Theory of Electromagnetic Wave Multiple Scattering  
*Mikhail Yurievitch Barabanenkov (Institute of Microelectronics Technology and High Purity Materials, Russian Academy of Sciences, Russia);*
- 10:00 On a Solution of Spread Boundary Problem of Bulk Artificial Optical Materials by Riccati Equation Method  
*Mikhail Yurievitch Barabanenkov (Institute of Microelectronics Technology and High Purity Materials, Russian Academy of Sciences, Russia);*
- 10:20 Magnetostatic Waves Multiple Scattering Band Structure Calculation for Locally Resonant Magnonic Crystals  
*Ivan V. Lisenkov (Kotel'nikov Institute of Radio Engineering and Electronics of RAS, Russia); Sergey A. Nikitov (Kotel'nikov Institute of Radio Engineering and Electronics, Russian Academy of Sciences, Russia);*
- 10:40 **Coffee Break**
- 11:00 Analytic Model for Near-Field Interference 3D Radiothermography of Biological Tissue Local Temperature Variation at Radiation Receiving on Coupled Linear Wire Antennas  
*Yuru Nicolaevich Barabanenkov (V. A. Kotelnikov Institute of Radio Engineering and Electronics, Russian Academy of Sciences, Russia); Mikhail Yurievitch Barabanenkov (Institute of Microelectronics Technology and High Purity Materials, Russian Academy of Sciences, Russia); Vladimir Alekseevich Cherepenin (Institute of Radio Engineering and Electronics, Russian Academy of Sciences, Russia);*
- 11:20 Boundary Problem Formulation for Field in Non-uniform Periodical Media  
*Sergey E. Bankov (Institute of Radio Engineering and Electronics of Russian Academy of Science, Russia); Sergey Nikitov (Institute of Radio-engineering and Electronics of Russian Academy of Science (IRE RAS), Russia); Ivan V. Lisenkov (Kotel'nikov Institute of Radio Engineering and Electronics of RAS, Russia);*
- 11:40 Acoustothermometrical Control of Laser Hyperthermia of Biological Tissues  
*A. A. Anosov (Institute of Radio Engineering and Electronics, Russian Academy of Sciences, Russia); Yuru Nicolaevich Barabanenkov (V. A. Kotelnikov 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);*
- 12:00 Radiometric Methods of Measurement of the Total Reflectivity, the Total Transmissivity and the Coherent Transmissivity of a Weakly Absorbing Random Discrete Medium Layer in the Millimeter Wavelengths Range  
*V. A. Golunov (V. A. Kotelnikov Institute of Radio Engineering and Electronics of RAS, Russia); Yuru Nicolaevich Barabanenkov (V. A. Kotelnikov Institute of Radio Engineering and Electronics, Russian Academy of Sciences, Russia);*

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**Session 4A4**
**Antennas, Shielding and EMC Measurement**


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**Thursday AM, August 23, 2012**
**Room D**

Organized by Rafal Przesmycki, Leszek Nowosielski

Chaired by Leszek Nowosielski, Marek Bugaj

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- 09:00 Analysis of the Radiated Emissions of IT Equipment  
*Rafal Przesmycki (Military University of Technology, Poland); Marian Tadeusz Wnuk (Military University of Technology, Poland); Leszek Nowosielski (Military University of Technology, Poland); Kazimierz Piwowarczyk (Military University of Technology, Poland); Marek Bugaj (Military University of Technology, Poland);*

- 09:20 Antenna Gain Measurement by Comparative Method Using an Anechoic Chamber  
Rafal Przesmycki (*Military University of Technology, Poland*); Marian Tadeusz Wnuk (*Military University of Technology, Poland*); Leszek Nowosielski (*Military University of Technology, Poland*); Kazimierz Piwowarczyk (*Military University of Technology, Poland*); Marek Bugaj (*Military University of Technology, Poland*);
- 09:40 Multilayer Microstrip Antennas Array Operating in Dual Bands  
Marek Bugaj (*Military University of Technology, Poland*); Rafal Przesmycki (*Military University of Technology, Poland*); Leszek Nowosielski (*Military University of Technology, Poland*); Kazimierz Piwowarczyk (*Military University of Technology, Poland*); Marian Tadeusz Wnuk (*Military University of Technology, Poland*);
- 10:00 Dual Band Microstrip Antenna Working in the Frequency Bands 2.4 GHz and 5.8 GHz  
Marek Bugaj (*Military University of Technology, Poland*); Rafal Przesmycki (*Military University of Technology, Poland*); Leszek Nowosielski (*Military University of Technology, Poland*); Kazimierz Piwowarczyk (*Military University of Technology, Poland*); Marian Tadeusz Wnuk (*Military University of Technology, Poland*);
- 10:20 Methods of Measuring Shielding Effectiveness of Small Shielded Chambers  
Leszek Nowosielski (*Military University of Technology, Poland*); Marian Tadeusz Wnuk (*Military University of Technology, Poland*); Rafal Przesmycki (*Military University of Technology, Poland*); Kazimierz Piwowarczyk (*Military University of Technology, Poland*); Marek Bugaj (*Military University of Technology, Poland*);
- 10:40 **Coffee Break**
- 11:00 Ambient Electromagnetic Noise Environment Measurement  
Leszek Nowosielski (*Military University of Technology, Poland*); Borys Bogdan (*KenBIT Sp.j., Poland*); Marian Tadeusz Wnuk (*Military University of Technology, Poland*); Rafal Przesmycki (*Military University of Technology, Poland*); Kazimierz Piwowarczyk (*Military University of Technology, Poland*); Marek Bugaj (*Military University of Technology, Poland*);
- 11:20 The Shielding Effectiveness Measurement Using High Voltage Pulse Generator  
Kazimierz Piwowarczyk (*Military University of Technology, Poland*); Marian Tadeusz Wnuk (*Military University of Technology, Poland*); Leszek Nowosielski (*Military University of Technology, Poland*); Rafal Przesmycki (*Military University of Technology, Poland*); Marek Bugaj (*Military University of Technology, Poland*);
- 11:40 The Algorithm of Design Multi-layer Microstrip Antenna  
Kazimierz Piwowarczyk (*Military University of Technology, Poland*); Marian Tadeusz Wnuk (*Military University of Technology, Poland*); Leszek Nowosielski (*Military University of Technology, Poland*); Rafal Przesmycki (*Military University of Technology, Poland*); Marek Bugaj (*Military University of Technology, Poland*);
- 12:00 Tuning Fork UWB Antenna with Unsymmetrical Feed Line  
A. H. M. Zahirul Alam (*International Islamic University Malaysia (IIUM), Malaysia*); Md. Rafiqul Islam (*Islamic International Malaysia University, Malaysia*); Sheraz Khan (*International Islamic University Malaysia, Malaysia*);
- 12:20 High Power Radiators for Ultra-wideband Electromagnetic Impulses  
Vladimir M. Fedorov (*Institute for High Energy Densities of JIHT of RAS, Russia*); Eugene F. Lebedev (*Institute for High Energy Densities of JIHT of RAS, Russia*); Vasily Ye. Ostashev (*Institute for High Energy Densities of JIHT of RAS, Russia*); Vladimir P. Tarakanov (*Institute for High Energy Densities of JIHT of RAS, Russia*); Aleksander V. Ul'yanov (*Institute for High Energy Densities of JIHT of RAS, Russia*);
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- Session 4A5**  
**Optical Linear and Non-linear Near-field and Confocal Microscopy**
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- Thursday AM, August 23, 2012**  
**Room E**  
Organized by Elena D. Mishina, Alexander A. Ezhov  
Chaired by Elena D. Mishina
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- 09:00 Two-photon Confocal and Near-field Optics of Bio-inspired Peptide Nanostructures  
*A. Kudryavtsev (Moscow State Institute of Radioengineering, Electronics and Automation, Russia); Elena Mishina (Moscow State Institute of Radioengineering, Electronics and Automation (Technical University), Russia); S. Lavrov (Moscow State Institute of Radioengineering, Electronics and Automation, Russia); A. Handelman (Tel Aviv University, Israel); Gil Rosenman (Tel Aviv University, Israel);*
- 09:20 Local Nonlinearities of ZnO Nanostructures  
*Kirill Shvirkov (Moscow State Technical University MIREA, Russia); A. Kedryavtsev (Moscow State Technical University MIREA, Russia); Sergey D. Lavrov (Moscow State Institute of Radioengineering, Electronics and Automation, Russia); N. E. Sherstyuk (Moscow State Institute of Radioengineering, Electronics and Automation (MSTU-MIREA), Russia); Elena D. Mishina (Moscow State Technical University of Radioengineering, Electronics and Automation (MSTU-MIREA), Russia); E. Rusu (Academy of Sciences of Moldova, Republic of Moldova); L. Kulyuk (Institute of Applied Physics, Moldova);*
- 09:40 Human In-vivo Blood Flow Image Velocimetry Using the High Speed Confocal Laser Scanning Microscope  
*S. H. Choi (Kyungpook National University, Korea); Ho Lee (Kyungpook National University, Korea);*
- 10:00 Nonlinear-optical and SNOM Investigations of Ferroelectric Polarization Switching in BST/NBFO Multi-layer Structures  
*Kirill A. Brekhov (Moscow State Technical University of Radioengineering, Electronics and Automation (MSTU-MIREA), Russia); S. D. Lavrov (Moscow State Technical University of Radioengineering, Electronics and Automation (MSTU-MIREA), Russia); N. E. Sherstyuk (Moscow State Institute of Radioengineering, Electronics and Automation (MSTU-MIREA), Russia); V. M. Muhortov (South Center of Russian Academy of Science, Russia); E. D. Mishina (Moscow State Technical University of Radioengineering, Electronics and Automation (MSTU-MIREA), Russia);*
- 10:20 Femtosecond Infrared Laser Annealing of Ferroelectric PZT Films on a Metal Substrate: Confocal and Near-field Optical Studies  
*Natalia Yu. Firsova (Moscow State Technical University of Radioengineering, Electronics and Automation (MSTU-MIREA), Russia); Elena D. Mishina (Moscow State Technical University of Radioengineering, Electronics and Automation (MSTU-MIREA), Russia); S. V. Senkevich (Ioffe Physical-Technical Institute of the Russian, Russia); I. P. Pronin (Ioffe Physical-Technical Institute of the Russian Academy of Sciences, Russia);*
- 10:40 **Coffee Break**
- 11:00 Optical Properties of Fotonokristallicheskih Structures Based on Single-crystal GaAs  
*Alexey Yu. Dobritsky (Moscow State Technical University MIREA, Russia); N. A. Ilyin (Moscow State Technical University MIREA, Russia); T. V. Nikonorov (Moscow State Institute of Radio-Engineering, Electronics and Automation, Russia); N. E. Sherstyuk (Moscow State Institute of Radioengineering, Electronics and Automation (MSTU-MIREA), Russia); Elena D. Mishina (Moscow State Technical University of Radioengineering, Electronics and Automation (MSTU-MIREA), Russia);*

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**Session 4A6**
**Wireless Network and Applications**


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**Thursday AM, August 23, 2012**
**Room F**

Organized by Soon Yim Tan, Chee Kiat Seow

Chaired by Chee Kiat Seow

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- 09:00 Novel Bow-tie Bandpass Filter Design Using Multiple Radial Stubs  
*Ziyang Fu (SIM University, Singapore); K. M. Lum (SIM University, Singapore); Wei Tze Koh (SIM University, Singapore);*
- 09:20 Ultra-wideband Bandpass Filter Using Symmetrical Step-impedance Resonators  
*Chin Ghee Tan (SIM University, Singapore); K. M. Lum (SIM University, Singapore);*
- 09:40 Dual-band Bandpass Filter Design Using Stub-loaded Resonators  
*Wei Tze Koh (SIM University, Singapore); K. M. Lum (SIM University, Singapore);*

- 10:00 Microwave Bandpass Filter Using Cascaded Bow-tie Resonators  
*Sng Swee Beng (SIM University, Singapore); K. M. Lum (SIM University, Singapore); Li Fen Lim (SIM University, Singapore);*
- 10:20 Bandstop Filter Design Using Cascaded Step-impedance Resonators with Defected Ground Structure  
*Li Fen Lim (SIM University, Singapore); K. M. Lum (SIM University, Singapore);*
- 10:40 **Coffee Break**
- 11:00 Extraction of Distance-dependent Rain Rate Distributions for Satellite Links Calculation  
*See Chuan Leong (Defence Science & Technology Agency, Singapore);*
- 11:20 IDMA System Based on Permutation Polynomial Interleaver over Integer Rings  
*Mohamed Fathy Abo Sree (Arab Academy for Science, Technology and Maritime Transport, Egypt); Esam A. A. A. Hagrass (Arab Academy for Science & Technology and Maritime Transport, Egypt); Mohamed S. El Mahallawy (Arab Academy for Science, Technology and Maritime Transport, Egypt); Mohamed Aboul El-Dahab (Arab Academy for Science and Technology and Maritime Transport, Egypt);*
- 11:40 Performance Evaluation of Clipped ML IDMA Communication System  
*Mohamed Fathy Abo Sree (Arab Academy for Science, Technology and Maritime Transport, Egypt); Esam A. A. A. Hagrass (Arab Academy for Science & Technology and Maritime Transport, Egypt); Mohamed S. El Mahallawy (Arab Academy for Science, Technology and Maritime Transport, Egypt); Mohamed Aboul El-Dahab (Arab Academy for Science and Technology and Maritime Transport, Egypt);*
- 12:00 Concept of Image Based Non-line-of-sight (NLOS) Localization in Multipath Environments  
*Siwen Chen (Nanyang Technological University, Singapore); Chee Kiat Seow (Nanyang Technological University of Singapore, Singapore); Kai Wen (Nanyang Technological University of Singapore, Singapore);*
- 12:20 Study of Channel Measurement Parameter Estimation for Precise Mobile Localization Applications  
*Chee Kiat Seow (Nanyang Technological University of Singapore, Singapore); Soon Yim Tan (Nanyang Technological University of Singapore, Singapore); Kai Wen (Nanyang Technological University of Singapore, Singapore);*

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**Session 4A7****Eigenfunction Expansion Based Analysis of Electromagnetic Structures**

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**Thursday AM, August 23, 2012****Room G**

Organized by Alexander V. Kudrin, George A. Kyriacou

Chaired by Alexander V. Kudrin, George A. Kyriacou

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- 09:00 An Eigenvalue Hybrid FEM Formulation for Three Dimensional Open Cavities  
*Constantinos L. Zekios (Democritus University of Thrace, Greece); Peter C. Allilomes (Democritus University of Thrace, Greece); Alexander V. Kudrin (University of Nizhny Novgorod, Russia); George A. Kyriacou (Democritus University of Thrace, Greece);*
- 09:20 Controlling Nanoparticle Plasmon Resonances by Faceting  
*Maxim V. Gorkunov (A. V. Shubnikov Institute of Crystallography, Russian Academy of Sciences, Russia); B. I. Sturman (Institute of Automation and Electrometry, Russian Academy of Sciences, Russia); E. V. Podivilov (Institute of Automation and Electrometry, Siberian Branch, Russian Academy of Sciences, Russia);*
- 09:40 A Mode Matching Methodology for the Analysis of Circular Waveguides Loaded with Infinite and Finite Periodic Structures  
*Dimitrios Makris (Democritus University of Thrace, Greece); Spyros Lavdas (Democritus University of Thrace, Greece); Christos S. Lavranos (Democritus University of Thrace, Greece); George A. Kyriacou (Democritus University of Thrace, Greece);*
- 10:00 Using the Eigenfunction Expansion Technique for Analysis of the Electrodynamical Characteristics of a Loop Antenna Located on the Surface of a Magnetized Plasma Column  
*Alexander V. Kudrin (University of Nizhny Novgorod, Russia); A. S. Zaitseva (University of Nizhny Novgorod, Russia); T. M. Zaboronkova (Technical University of Nizhny Novgorod, Russia);*
- 10:20 A Characteristic Mode Eigenanalysis Exploiting FEM Features  
*Ronis Maximidis (Democritus University of Thrace, Greece); Constantinos L. Zekios (Democritus University of Thrace, Greece); Peter C. Allilomes (Democritus University of Thrace, Greece); Alexander V. Kudrin (University of Nizhny Novgorod, Russia); George A. Kyriacou (Democritus University of Thrace, Greece);*

10:40 **Coffee Break**

11:00 Computational Efficient Solution of Maxwell's Equations for Lamellar Gratings

*Igor Semenikhin (Institute of Physics and Technology RAS, Russia); Mauro Zanucoli (University of Bologna and IUNET, Italy); Vladimir Vyurkov (Institute of Physics and Technology RAS, Russia); Enrico Sangiorgi (University of Bologna and IUNET, Italy); Claudio Fiegna (University of Bologna and IUNET, Italy);*

11:20 Analytical Study of Surface and Leaky Waves on a Grounded Magnetized Plasma Slab

*Xenofon M. Mitsalis (Democritus University of Thrace, Greece); Alexander V. Kudrin (University of Nizhny Novgorod, Russia); George A. Kyriacou (Democritus University of Thrace, Greece);*

11:40 Radiation Efficiency of a Circular Loop Antenna with Pulsed Excitation in a Magnetoplasma Containing a Cylindrical Density Nonuniformity

*Alexander V. Kudrin (University of Nizhny Novgorod, Russia); N. M. Shmeleva (University of Nizhny Novgorod, Russia); N. V. Yurasova (University of Nizhny Novgorod, Russia); T. M. Zaboronkova (Technical University of Nizhny Novgorod, Russia);*

12:00 Eigenanalysis for Lossy or Open Periodic Structures Incorporating the Floquet Field Expansion

*Spyros J. Lavidas (Democritus University of Thrace, Greece); Panagiotis Tsompanis (Democritus University of Thrace, Greece); Christos S. Lavranos (Democritus University of Thrace, Greece); George A. Kyriacou (Democritus University of Thrace, Greece);*



## PIERS SURVEY

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

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A1. For the next PIERS to be held on 25–28 March, 2013 in Taipei, TAIWAN,

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

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| ( ) 4th PIERS1994 in Noordwijk     | ( ) 5th PIERS1995 in Seattle    | ( ) 6th PIERS1996 in Innsbruck  |
| ( ) 7th PIERS1997 in Hong Kong     | ( ) 8th PIERS1997 in Cambridge  | ( ) 9th PIERS1998 in Nantes     |
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| ( ) 13th PIERS2002 in Cambridge    | ( ) 14th PIERS2003 in Singapore | ( ) 15th PIERS2003 in Honolulu  |
| ( ) 16th PIERS2004 in Pisa         | ( ) 17th PIERS2004 in Nanjing   | ( ) 18th PIERS2005 in Hangzhou  |
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| ( ) 25th PIERS2009 in Beijing      | ( ) 26th PIERS2009 in Moscow    | ( ) 27th PIERS2010 in Xi'an     |
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C. I have the following comments about PIERS:

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# PIERS 2013 in Taipei

## Progress in Electromagnetics Research Symposium

### 25 – 28 March, 2013

Taipei, TAIWAN

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## CALL FOR PAPERS

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| 5 Transmission lines and waveguide discontinuities   | 6 Resonators, filters, interconnects, packaging, MMIC          |
| 7 Antenna theory and radiation                       | 8 Microstrip and printed antennas, phase array antennas        |
| 9 RF and wireless communication, multipath           | 10 Mobile antennas, conformal and smart skin antennas          |
| 11 Power electronics, superconducting devices        | 12 Systems and components, electromagnetic compatibility       |
| 13 Nano scale electromagnetics, MEMS                 | 14 Magnetic levitation, transportation and collision avoidance |
| 15 Precision airport landing systems, GPS            | 16 Radar sounding of atmosphere, ionospheric propagation       |
| 17 Microwave remote sensing and polarimetry, SAR     | 18 Subsurface imaging and detection technology, GPR            |
| 19 Active and passive remote sensing systems         | 20 Electromagnetic signal processing, wavelets, neural network |
| 21 Rough surface scattering and volume scattering    | 22 Remote sensing of the earth, ocean, and atmosphere          |
| 23 Scattering, diffraction, and inverse scattering   | 24 Microwave and millimeter wave circuits and devices, CAD     |
| 25 Optics and photonics, gyrotrons, THz technology   | 26 Quantum well devices, microwave photonic systems, PBG       |
| 27 Medical electromagnetics, biological effects, MRI | 28 Fiber optics, optical sensors, quantum computing            |
| 29 Biological media, composite and random media      | 30 Plasmas, nonlinear media, fractal, chiral media, LHM        |
| 31 Constitutive relations and bianisotropic media    | 32 Moving media, relativity, field quantization, and others    |

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## PAPER SUBMISSION MUST BE RECEIVED BY 20 October 2012

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

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## PRESENTING AUTHORS MUST PRE-REGISTER BY 20 DECEMBER 2012

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Each presenting author is limited to presenting no more than three papers in oral and poster sessions, and must pre-register by paying a **non-refundable** fee of **US\$570** before **20 December 2012**. For students with valid identification, the non-refundable pre-registration fee is **US\$300**. Registration fee will be raised to **\$680** and **\$400** for students after **20 December 2012**. Only pre-registered articles will be scheduled in the final Technical Program. Inclusion of the article in the Technical Program and PIERS Proceedings is guaranteed only after the registration of the presenting author is completed. Registration fee include admission to all technical sessions, break areas, and a copy of the draft proceedings in CD-ROM.

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	<b>MONDAY AM</b> <b>8:40 August 20</b>		<b>MONDAY PM</b> <b>13:40 August 20</b>	<b>TUESDAY AM</b> <b>8:40 August 21</b>	<b>TUESDAY PM</b> <b>13:40 August 21</b>
<b>ROOM A</b>	1A1 - Fiber, Optics and Photonics, Laser		1P1a - Modelling of Electromagnetic Structures: Application to Electrical Machines	2A1 - Advancements in Phase-space Representations	2P1 - Nonlinear Guided Wave Phenomena and Optical Solitons
<b>ROOM B</b>	1A2 - Active Metamaterials		1P2a - Microwave Processing of Materials --- Recent Advances in Modeling and Experimentation	2A2 - Microwave Photonics Techniques, Technology & Applications	2P2 - Progress in Metamaterials Research
<b>ROOM C</b>	1A3 - Theory and Methods of Digital Signal and Image Processing 1		1P3a - Theory and Methods of Digital Signal and Image Processing 2	2A3 - Inverse Problems	2P3 - Remote Sensing of Earth Critical Parameters
<b>ROOM D</b>	1A4 - Patch Antenna and Array		1P4a - Small Size Antenna	2A4 - Near to Mid-range Wireless Power Transfer Technology: Principles and Applications 1	2P4 - Near to Mid-range Wireless Power Transfer Technology: Principles and Applications 2
<b>ROOM E</b>	1A5 - Novel Mathematical Methods in Electromagnetics 1		1P5a - Novel Mathematical Methods in Electromagnetics 2	2A5 - Advanced Mathematical and Computational Methods in Electromagnetic Theory and Their Applications	2P5 - Computational Electromagnetics
<b>ROOM F</b>	1A6a - Nonlinear Electromagnetic Problems	1A6b - Scattering, Diffraction, and Inverse Scattering	1P6a - Nano Scale Electromagnetics, MEMS 2	2A6 - Medical Electromagnetics, Biological Effects, MRI	2P6 - Medical Electromagnetics, RF Biological Effect
<b>ROOM G</b>	1A7 - Extended/Unconventional Electromagnetic Theory, EHD/EMHD, and Electro-biology 1		1P7a - Extended/Unconventional Electromagnetic Theory, EHD/EMHD, and Electro-biology 2	2A7 - Electromagnetic Modeling, Inversion and Applications	2P7 - Transport and Localization in Periodic and Disordered Media
<b>ROOM H</b>			1P8a - The Electrodynamics of Inhomogeneous Media and Gradient Metamaterials 1	2A8 - The Electrodynamics of Inhomogeneous Media and Gradient Metamaterials 2	2P8 - Mobile Antennas, Printed Antennas, and Array Antennas
<b>ROOM K</b>			1P9 - Poster Session 1	2A9 - Poster Session 2	2P9 - Poster Session 3

	<b>WEDNESDAY AM</b> <b>8:40 August 22</b>	<b>WEDNESDAY PM</b> <b>13:40 August 22</b>	<b>THURSDAY AM</b> <b>8:40 August 23</b>	
<b>ROOM A</b>	3A1 - Fiber Lasers and Fiber Micro/Nano-Photonic Components	3P1 - Advanced Photonics-based Devices and Equipment	4A1 - Electromagnetic Theory and Design on the Optical Dispersive Materials, Invisible Cloak and Photonic Crystals	
<b>ROOM B</b>	3A2 - Microwave and Millimeter Wave Circuits and Measurements	3P2 - Optics and Nanoplasmonics, Nano Scale Electromagnetics	4A2a - Present and Future of THz Science & Technology	4A2b - Earth EM Environment and Propagation & Scattering
<b>ROOM C</b>	3A3 - Remote Sensing, Imaging and Detection	3P3 - Electromagnetic Probing of Atmosphere and Ionosphere	4A3 - Modern Aspects of Wave Multiple Scattering in Dense Random and Ordered Media	
<b>ROOM D</b>	3A4 - Antenna Technologies for Broadband and High-speed Wireless Systems	3P4 - Antenna Theory and Radiation	4A4 - Antennas, Shielding and EMC Measurement	
<b>ROOM E</b>	3A5 - Computational Techniques	3P5a - Asymptotic and Hybrid Methods in Electromagnetics	3P5b - The Modern Hybrid Methods in the Problems of CEM	4A5 - Optial Linear and Non-linear Near-field and Confocal Microscopy
<b>ROOM F</b>	3A6 - Applications of EM Field in Medicine	3P6 - Microwave and Millimeter Wave Circuits and Devices, CAD	4A6 - Wireless Network and Applications	
<b>ROOM G</b>	3A7 - Electromagnetic Theory	3P7a - Smart Functional Materials for Non-destructive Control	3P7b - Various Models for Electrodynamics and Applications to Moving Media	4A7 - Eigenfunction Expansion Based Analysis of Electromagnetic Structures
<b>ROOM H</b>	3A8 - Magnetism, Magnetic and Multiferroic Materials, Structures and Devices			
<b>ROOM K</b>	3A9 - Poster Session 4	3P9 - Poster Session 5		