

# PIERS 2010 Cambridge

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Progress In Electromagnetics Research Symposium

Program

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July 5–8, 2010  
Cambridge, USA

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# Progress In Electromagnetics Research Symposium

July 5–8, 2010

Cambridge, USA

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- Schlumberger-Doll Research (SDR)
- MIT Center for Electromagnetic Theory and Applications/Research Laboratory of Electronics
- The Electromagnetics Academy at Zhejiang University
- Zhejiang University
- The Electromagnetics Academy



## **SYMPOSIUM VENUE**

The 2010 Progress in Electromagnetics Research Symposium will be held on July 5–8, 2010, at Hotel Marlowe in Cambridge, Massachusetts, USA. During the symposium, the PIERS OFFICE will be located in Hotel Marlowe in Cambridge.

## **REGISTRATION**

The PIERS technical sessions will begin on Monday morning, July 5, 2010 at Hotel Marlowe. You may register in the PIERS OFFICE on Sunday, July 4, from 13:00 to 18:00, or during the symposium from 8:00 through 17:00, July 5-8, 2010.

The on-site registration fee is US\$580. The student registration fee is US\$350 (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 Sunday, July 4, 2010, from 16:00 to 18:00, symposium reception will take place at Hotel Marlowe. For registered PIERS participants, the reception is free. For unregistered companions, the price is USD 20 per person. Please make online reservation in advance and pay cash at PIERS check-in desk.

### **Symposium Banquet**

On Wednesday evening, July 7, 2010, 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 60 per person. A limited number of banquet tickets will be sold on a first-come, first-served basis. Please make online reservation in advance and pay cash at PIERS check-in desk.

## **PIERS ONLINE**

Information on PIERS 2010 Cambridge 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 are requested to stand by their posters during their session.

One panel (100 x 200 cm) will be available for each poster. Pins or thumbtacks are provided to mount your posters on the board.

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

## ACCOMMODATION

Participants are responsible for making their own housing arrangements. The PIERS Host Hotel is Hotel Marlowe. Online Reservation is available. Please visit PIERS 2010 website for detailed information. The information below is provided for your convenience.

#### **Hotel Marlowe**

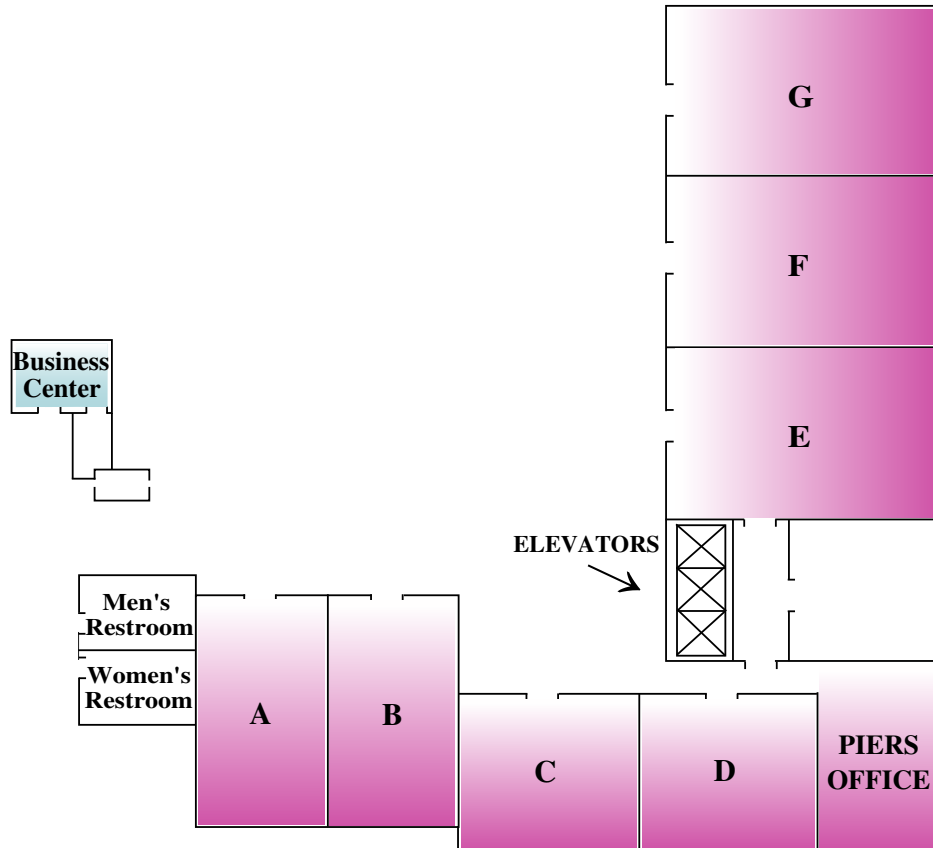
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### **HOTEL MARLOWE**

**ADD: 25 Edwin H. Land Blvd., Cambridge, MA 02141, USA**

## PIERS 2010 CAMBRIDGE TECHNICAL PROGRAM

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### Session 1A1

#### Electromagnetic Modeling, Inversion and Applications 1

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Monday AM, July 5, 2010

#### Room A

Organized by Ganquan Xie, Michael Oristaglio,  
Jianhua Li

Chaired by Ganquan Xie, Michael Oristaglio

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- |  |   |
|--|---|
| <p>08:00 Electromagnetic and Economic Security Cloak<br/><i>Jianhua Li (GL Geophysical Laboratory, USA); Feng Xie (GL Geophysical Laboratory, USA); Qian Hao (GL Geophysical Laboratory, USA); Lee Xie (GL Geophysical Laboratory, USA); Ganquan Xie (GL Geophysical Laboratory, USA); Xianwei Zhou (University of Science and Technology, China);</i></p> <p>08:20 Rapid Bounds on Electrostatic Energies Using Diagonal Approximations of Boundary-integral Equations<br/><i>Jaydeep P. Bardhan (Rush University Medical Center, USA);</i></p> <p>08:40 When PML Isn't P: The Failure of Perfectly Matched Layers<br/><i>Po-Ru Loh (Massachusetts Institute of Technology, USA); Ardavan F. Oskooi (MIT, USA); Mihai Ibanescu (Massachusetts Institute of Technology, USA); Maksim Skorobogatiy (École Polytechnique de Montréal, Canada); Lei Zhang (MIT, USA); Yehuda Avniel (MIT, USA); Steven G. Johnson (Massachusetts Institute of Technology, USA);</i></p> | <p>09:00 ISAR Simulations of Complex Objects and Verification with Measurements at TUBITAK MRC<br/><i>Uğur Saynak (Information Technologies Institute (ITI), Turkey); Alper Çolak (Information Technologies Institute (ITI), Turkey); Harun Cetinkaya (TUBITAK-MRC, Turkey); Mustafa Tekbas (TUBITAK-MRC, Turkey); I. Hakki Tayyar (Information Technologies Institute (ITI), TUBITAK-MRC, Turkey); Deniz Bölükbas (Information Technologies Institute (ITI), Turkey); Caner Ozdemir (Information Technologies Institute (ITI), Turkey); Alexey A. Vertiy (TUBITAK-MRC, Turkey);</i></p> <p>09:20 Investigating Energetic and Impedance Relations of Microwave Transmission Line Filled with Dielectric Material<br/><i>Attila Gollei (University of Pannonia, Turkey); Andras Magyar (University of Pannonia, Hungary); M. Gerzson (University of Pannonia, Hungary);</i></p> <p>09:40 Electromagnetic Field Analysis in Permanent Magnet Retarder Based on Finite Element Method<br/><i>Lezhi Ye (Beijing University of Technology, China); Desheng Li (Beijing University of Technology, China); B. F. Jiao (Beijing University of Technology, China); Y. Z. Wang (Beijing University of Technology, China);</i></p> <p>10:00 <b>Coffee Break</b></p> <p>10:20 Simulation of 3D Laser Imaging<br/><i>Gerard Berginc (THALES, France); Michel Jouffroy (THALES, France);</i></p> <p>10:40 Studying the Effects of Wind Farms on a Terrain to the Scattered Field by Utilizing the ISAR Concept<br/><i>Deniz Bölükbas (Information Technologies Institute (ITI), Turkey); Uğur Saynak (Information Technologies Institute (ITI), Turkey); Alper Çolak (Information Technologies Institute (ITI), Turkey); I. Hakki Tayyar (Gebze Institute of Technology, Turkey); Caner Ozdemir (Information Technologies Institute (ITI), Turkey);</i></p> |
|--|---|

- 11:00 FDTD Analysis in a PCB Stripline Structure  
*Ellen Yoshie Sudo Lutif (CTA, Brazil); M. R. F. Gon-tijo (CTA, Brazil); Alberto Jose de Faro Orlando (CTA, Brazil); Antonio Carlos da Cunha Migliano (CTA, Brazil);*
- 11:20 A General Method for FDTD Modeling of Scatter-ing by Isotropic and Anisotropic Frequency-dispersive Media  
*Bing Wei (Xidian University, China); De-Biao Ge (Xidian University, China); Fei Wang (Xidian Uni-versity, China); Yu-Qiang Zhang (Xidian University, China);*
- 11:40 Magnetic Field Distribution of a Novel Variable In-ductor Based on Orthogonal Magnetization  
*Zhengrong Jiang (North China University of Technol-ogy, China); Zhengxi Li (North China University of Technology, China); Jianye Chen (Tsinghua Univer-sity, China);*
- 09:40 A Fully Polarimetric Borehole Radar Based Numerical Modeling: Fully Polarimetric Response to Synthetic Natural Fractures  
*Jian-Guo Zhao (China University of Petroleum (Bei-jing), China); Motoyuki Sato (Tohoku University, Japan);*
- 10:00 **Coffee Break**
- 10:20 Flaw Detection in a Concrete Medium Using Acoustic Synthetic Aperture Imaging Technique  
*Abhijit Ganguli (Northeastern University, USA); D. Abramo (Northeastern University, USA); Sara Wadia-Fascetti (Northeastern University, USA); Carey M. Rappaport (Northeastern University, USA);*
- 10:40 Accurate Modeling of Ground-coupled Ground Pene-trating Radar with 2-D FDTD Using Observed Cali-bration Measurements  
*Christopher Wright (Northeastern University, USA); Carey M. Rappaport (Northeastern University, USA); Kimberly Belli (Northeastern University, USA); Sara Wadia-Fascetti (Northeastern University, USA);*

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**Session 1A2**

**Remote Sensing and Polarimetry, SAR, GPR, Imaging**

**Monday AM, July 5, 2010**

**Room B**

Chaired by Carey M. Rappaport, Howard A. Zebker

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- 08:20 Polarimetric UHF Calibration for SETHI  
*Hélène Oriot (Office National d'Étude et de Recherches Aérospatiales (ONERA), France); Co-lette Coulombeix (ONERA, France); Pascale Dubois-Fernandez (ONERA, France);*
- 08:40 Towards a Polarimetric SAR Processor for Airborne Sensor  
*Hubert M. J. Cantalloube (Office National d'Études et Recherches Aérospatiales (ONERA), France); B. Fromentin-Denoziere (Office National d'Études et Recherches Aérospatiales (ONERA), France); C. E. Nahum (DGA (Direction Genrale pour l'rmement), France);*
- 09:00 Polarimetric SAR Image Classification Using Radial Basis Function Neural Network  
*Turker Ince (Izmir University of Economics, Turkey);*
- 09:20 A Radar Scattering and Analysis Model for Time-series InSAR (T-SAR)  
*Howard A. Zebker (Stanford University, USA); Piyush Shanker Agram (Stanford University, USA);*
- 11:00 A New Method of Three Dimensional Radar Synthetic Aperture Imaging  
*Nan-Jing Li (Northwestern Polytechnic University, China); Chu-Feng Hu (Northwestern Polytechnic Uni-versity, China); Lin-Xi Zhang (Northwestern Poly-technic University, China);*
- 11:20 Impact of Soil Roughness in Underground Focusing SAR Images  
*Fernando Quivira (Northeastern University, USA); José Angel Martínez-Lorenzo (Northeastern Univer-sity, USA); Carey M. Rappaport (Northeastern Uni-versity, USA);*
- 11:40 Wide Band Radar with Detecting and Tracing Corona Arc around Any High Speed and Anti Radar Aircraft  
*Milad Johnny (Iran University of Science & Technol-ogy, Iran); Maryam Johnny (Iran University of Sci-ence & Technology, Iran);*

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**Session 1A3**

**RF and Wireless Communication**

**Monday AM, July 5, 2010**

**Room C**

Chaired by Heung-Gyoon Ryu, Malay Ranjan Tripathy

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- 08:20 Matrix Calculation and Compensation of Multiple CFO Interferences in the OFDMA Uplink Communication System  
*Heung-Gyoon Ryu (Chungbuk National University, Korea);*
- 08:40 Threshold Power-based Radiation Pattern Measurement of Passive UHF RFID Tags  
*Leena Ukkonen (Tampere University of Technology, Finland); Lauri Sydanheimo (Tampere University of Technology, Finland);*
- 09:00 Energy Efficient Fuzzy Logic Based Intelligent Wireless Sensor Network  
*Malay Ranjan Tripathy (Jind Institute of Engineering and Technology (JIET), India); Kunal Gaur (Jind Institute of Engineering and Technology (JIET), India); Sonam Sharma (Jind Institute of Engineering and Technology (JIET), India); G. S. Virdi (Jind Institute of Engineering and Technology (JIET), India);*
- 09:20 Ground-to-ground Radio Frequency (RF) Propagation in Desert Environments in the 30–2500 MHz Frequency Range  
*Julia Andrusenko (The Johns Hopkins University Applied Physics Laboratory, USA); Jacob A. Gilbert (The Johns Hopkins University Applied Physics Laboratory, USA); Jack L. Burbank (The Johns Hopkins University Applied Physics Laboratory, USA); William T. Kasch (The Johns Hopkins University Applied Physics Laboratory, USA); John R. Ward (The Johns Hopkins University Applied Physics Laboratory, USA); Leah C. Lewis (The Johns Hopkins University Applied Physics Laboratory, USA);*
- 09:40 Rain Fade Modelling Using Hidden Markov Model for Tropical Area  
*Baso Maruddani (Bandung Institute of Technology, Indonesia); Adit Kurniawan (Bandung Institute of Technology, Indonesia); Sugihartono (Bandung Institute of Technology, Indonesia); Achmad Munir (Bandung Institute of Technology, Indonesia);*
- 10:00 **Coffee Break**
- 10:20 Power Control and Diversity Performance Analysis in CDMA Systems  
*Baso Maruddani (Bandung Institute of Technology, Indonesia); Adit Kurniawan (Bandung Institute of Technology, Indonesia);*
- 10:40 Parameter Analysis in Indoor Wireless Radiopropagation Simulation Environments  
*Victor Torres (Universidad Pública de Navarra, Spain); Fermín Esparza (Universidad Pública de Navarra, Spain); Miguel Navarro-Cía (Universidad Pública de Navarra, Spain); Miguel Beruete (Universidad Pública de Navarra, Spain); Francisco J. Falcone (Universidad Pública de Navarra, Spain);*
- 11:00 A Novel Power Controller of Wireless Sensor Network Node Circuit for Energy Saving  
*Shi-Sheng Jin (Guizhou Meteorological Information Center, China); Wei-Wei Cheng (Zhejiang University, China); Shun Yuan (Guizhou Meteorological Information Center, China); Jun-Yong Wang (Guizhou Meteorological Information Center, China); Jue Li (Guizhou Meteorological Information Center, China);*
- 11:20 A UHF and HF RFID Integration System for Access Control Application  
*Wei He (The Third Research Institute of MPS, China); Yinlong Huang (The Third Research Institute of MPS, China); Weihua Sun (The Third Research Institute of MPS, China);*
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- Session 1A4**  
**Robust and Efficient Electromagnetic Solutions for Large-scale Problems**
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- Monday AM, July 5, 2010**  
**Room D**  
Organized by Maokun Li, Aria Abubakar  
Chaired by Maokun Li, Aria Abubakar
- 
- 08:20 On the Frequency Barrier of Surface Integral Equations from a Circuit Point of View  
*Lijun Jiang (The University of Hong Kong, China); Albert E. Ruehli (The Missouri University of Science and Technology, USA);*
- 08:40 Fast Integral Equation Solution Techniques for Planar-3D Structures in Multilayered Media  
*Thomas Vaupel (Fraunhofer Institute for High Frequency Physics and Radar Techniques FHR, Germany);*
- 09:00 A Surface Absorber Approach with the Boundary Element Method to Terminate Nanophotonic Devices  
*Lei Zhang (MIT, USA); Steven G. Johnson (Massachusetts Institute of Technology, USA); Jacob K. White (Massachusetts Institute of Technology, USA);*

- 09:20 A Hybrid PMM-MOM Method for Analyzing Electrically Large and Finite Frequency Selective Surface  
*Jianxun Su (Beijing Institute of Technology, China); Xiaowen Xu (Beijing Institute of Technology, China);*
- 09:40 The Discontinuous Galerkin Method for Highly Inhomogeneous Media  
*Christoph Schwarzbach (University of British Columbia, Canada); Eldad Haber (University of British Columbia, Canada);*
- 10:00 **Coffee Break**
- 10:20 Multi-region Pseudospectral Time Domain (MR/PSTD) Modeling of Electromagnetic Wave Propagation  
*Lanbo Liu (Cold Regions Research and Engineering Laboratory, USA); Benjamin Barrowes (Cold Regions Research and Engineering Laboratory, USA); Zhao Zhao (University of Connecticut, USA); Zijian Liu (University of Connecticut, USA);*
- 10:40 Simplified Integral Equation Modeling of Low-frequency Electromagnetic Scattering from a Resistive Underground Target  
*Shaaban Ali Bakr (University of Bergen, Norway); Trond Mannseth (University of Bergen, Norway);*
- 11:00 A Three-dimensional Inversion Approach for Crosswell Electromagnetic Field Data  
*Jianguo Liu (Schlumberger-Doll Research, USA); Guangdong Pan (Schlumberger-Doll Research, USA); Aria Abubakar (Schlumberger-Doll Research, USA); Tarek M. Habashy (Schlumberger-Doll Research, USA); Mikhail Zaslavsky (Schlumberger Doll Research, USA); Vladimir L. Druskin (Schlumberger Doll Research, USA);*
- 11:20 Computation of Casimir Forces in Arbitrary Geometries and Materials via the Finite-difference Time-domain Method  
*Alejandro W. Rodriguez (Massachusetts Institute of Technology, USA); Alexander P. McCauley (Massachusetts Institute of Technology, USA); John D. Joannopoulos (Massachusetts Institute of Technology, USA); Steven G. Johnson (Massachusetts Institute of Technology, USA);*
- 11:40 Spectral Element Method for 2-D and 3-D Photonic Crystals with Dispersive and Anisotropic Materials  
*Ma Luo (Duke University, USA); Qing Huo Liu (Duke University, USA);*

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**Session 1A5a**
**Recent Advances in Numerical Methods for Maxwell's Equations**


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**Monday AM, July 5, 2010**
**Room E**

Organized by Gary Cohen, Xavier Ferrieres

 Chaired by Gary Cohen
 

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- 08:00 Subpixel Smoothing for Dispersive Media in the FDTD Method  
*Alexei Deinega (Russian Research Centre, Kurchatov Institute, Russia); Ilya Valuev (Joint Institute for High Temperatures of RAS, Russia); Sergei Belousov (Russian Research Centre, Kurchatov Institute, Russia);*
- 08:20 Staggered Grid Pseudo-spectral Time-domain Method for Light Scattering Analysis  
*Yuki Ohmura (Osaka University, Japan); Yasuyuki Okamura (Osaka University, Japan);*
- 08:40 Application of Alternating Direction Implicit (ADI) Algorithm to Staggered-grid PSTD Modeling of Electromagnetic Waves  
*Zijian Liu (University of Connecticut, USA); Lanbo Liu (University of Connecticut, USA); Benjamin Barrowes (Cold Regions Research and Engineering Laboratory, USA);*
- 09:00 Analysis of Fractal Patch Antennas through Conformal FDTD Algorithms  
*Bruno Camps-Raga (University of Missouri-Columbia, USA); Naz E. Islam (University of Missouri-Columbia, USA); S. Joe Yakura (Kirtland AFB, USA);*
- 09:20 FEMGD: An Efficient Discontinuous Galerkin Approach on Hybrid Meshes for Time Domain Maxwell's Equations  
*Gary Cohen (INRIA, France); Xavier Ferrieres (INRIA, France); Bernard Pecqueux (INRIA, France);*
- 09:40 A Maxwell-Vlasov Method Based on a New Discontinuous Galerkin Scheme: Application to High Power Microwave Source  
*Laura Pebernet (ONERA DEMR, France); Vincent Mouysset (ONERA, France); Francois Rogier (ONERA, France); Xavier Ferrieres (Office National d'Etudes et de Recherches Aerospatiales (ONERA), France); Rene Vezinet (DGA, France);*
- 10:00 **Coffee Break**

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**Session 1A5b**  
**Optical Properties of Semiconductors and Nanostructures 1**

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**Monday AM, July 5, 2010**

**Room E**

Organized by Shi Jie Xu

Chaired by Shi Jie Xu

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- 10:20 Interaction between BN Nanotubes and Molecules by Optical Spectra  
*Chun Yi Zhi (National Institute for Materials Science, Japan); Yoshio Bando (National Institute for Materials Science, Japan); Chengchun Tang (National Institute for Materials Science, Japan); Dmitri Golberg (National Institute for Materials Science, Japan);*
- 10:40 The Color Emissions of ZnO Single Crystals Implanted by Different Ions  
*Yuk Nga Chen (The University of Hong Kong, China); Shi Jie Xu (The University of Hong Kong, China); Chang Cheng Zheng (The University of Hong Kong, China); Ji Qiang Ning (The University of Hong Kong, China); Xue Min Dai (The University of Hong Kong, China); C. C. Ling (The University of Hong Kong, China);*
- 11:00 ZnO Tetrapods: Radiative Recombination and Exceptionally Long Exciton Lifetime  
*Kam Sing Wong (Hong Kong University of Science and Technology, China);*
- 11:20 Polarization of Emission from Self-assembled Quantum Dots and Its Application to the Optical Characterization of Structure  
*Weidong Sheng (Fudan University, China);*

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**Session 1A6**  
**Poster Session 1**

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**Monday AM, July 5, 2010**

**9:00 AM - 12:00 AM**

**Room F**

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- 1 Aspect on Vortices in Multicomponent Superconductors  
*Tao Xu (Huazhong University of Science and Technology, China); Yaqiong Han (Huazhong University of Science and Technology, China);*

- 2 Discussion of Reverberation Chamber Uniformity Using Neural-network Method  
*Li Zhang (Communication University of China, China); Yong Qi (China Radio International, China); Guizhen Lu (Communication University of China, China);*
- 3 Use of Electric and Magnetic Fields for Conversion of the Energy of the Kinetic Medium into the Energy of the Consumer Format  
*Igor Adolfovich Yanushevsky (Sinergy Company Ltd., Russia); Sergey Sergeevich Lastochkin (Sinergy Company Ltd., Russia);*
- 4 Power Frequency Magnetic Field Stimulates Ca<sup>2+</sup> Related Reorganizations in Cytoskeleton Microfilaments of Human Smmion FL Cells  
*Ruohong Xia (East China Normal University, China);*
- 5 Application of EH4 in the 102 Ore Belt in Shihu Gold Deposit of Western Hebei, China  
*Xiaoming Fu (Central South University, China); Tagen Dai (Central South University, China); Chaozhuang Xi (Central South University, China);*
- 6 Propagation of an Electromagnetic Beam at the Interface of Isotropic Medium and Gyroelectric Medium  
*Qi Liu (Beijing Jiaotong University, China); Hui Huang (Beijing Jiaotong University, China);*
- 7 Surface Waves at the Interface between Isotropic Medium and Gyroelectric Medium  
*Bo Huang (Beijing Jiaotong University, China); Hui Huang (Beijing Jiaotong University, China);*
- 8 On the Vision of Depth  
*Sara Liyuba Vesely (I.T.B. — C.N.R., Italy); Alessandro Alberto Vesely (Via L. Anelli 13, Italy);*
- 9 Modeling of Electromagnetic Coupling in Finite Arrays Using Scale-changing Technique  
*Aamir Rashid (LAAS, France); Hervé Aubert (CNRS; LAAS, France);*
- 10 Analysis of Coupled Nonuniform Transmission Lines as an Initial Value Problem  
*Mohammad Khalaj-Amirhosseini (Iran University of Science and Technology, Iran);*
- 11 Synthesis about Analytical Approaches for Calculating the Magnetic Field Produced by Permanent Magnets of Various Topologies  
*Romain Ravaud (Universite du Maine, France); Guy Lemarquand (Universite du Maine, France);*
- 12 New CAD Method for Microwave Filter Design Based on Numerical Solution of Laplace Equation in the Structure  
*Ali Khoshniat (Utah State University, USA); Bedri A. Cetiner (Utah State University, USA);*



- 13 Film's Forming Materials for THz Spectral Range Purposes  
*Eugeny N. Kotlikov (St. Petersburg's State University of Aerospace Instrumentation, Russia); Vasily A. Ivanov (Scientific-Research Institute "Giricond", Russia); Alexey N. Tropin (Scientific-Research Institute "Giricond", Russia);*
- 14 Scattering from a Slightly Rough Surface and the Non-constancy of Speed of Light in Vacuum for Different Galilean Reference Systems  
*Namik Yener (Kocaeli University, Turkey);*
- 15 Low Profile and Low Cost Efficient Linear Array Antenna Based Substrate Integrated Waveguide Technology for Millimeter-wave Sensing Applications  
*Wael M. Abdel Wahab (University of Waterloo, Canada); Safieddin Safavi-Naeini (University of Waterloo, Canada); Dan Busuioc (University of Waterloo, Canada);*
- 16 Mutual Coupling Mitigation Using New Feeding Scheme Suitable for 2D Planar Antenna Array at Millimeter-wave Band  
*Wael M. Abdel Wahab (University of Waterloo, Canada); Safieddin Safavi-Naeini (University of Waterloo, Canada); Dan Busuioc (University of Waterloo, Canada);*
- 17 Wave Propagation in Corrugated Circular Grating  
*Farzin Emami (Shiraz University of Technology, Iran); Mohammad Reza Salehi (Shiraz University of Technology, Iran);*
- 18 Modeling Induced Current in Active Medical Implants Exposed to Uniform Magnetic Fields  
*Juliano Katrib (Nancy University, France); Mustapha Nadi (Nancy University, France); Pierre Schmitt (Nancy University, France); Djilali Kourtiche (Nancy University, France); Isabelle Magne (EDF, R & D, France);*
- 19 Frequency Selective Surfaces with Thin Triangular Conducting Elements  
*Ayşegül Pekmezci (University of Gaziantep, Turkey); Tuncay Ege (University of Gaziantep, Turkey);*
- 20 A New Phase Measurement Technique for RF Power Amplifier Only Measuring Magnitudes  
*Ahmet Hayrettin Yuzer (Middle East Technical University, Turkey); Simsek Demir (Middle East Technical University, Turkey);*

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**Session 1A7**  
**Poster Session 2**

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**Monday AM, July 5, 2010**

**9:00 AM - 12:00 AM**

**Room G**

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- 1 Characteristics of Water Soluble Ions in PM<sub>10</sub> in the Vicinity of High Voltage Transmission Lines  
*Seung-Cheol Hong (Inje University, Republic of Korea); K. Y. Kim (Inje University, Republic of Korea); M. D. Han (Inje University, Republic of Korea); J. M. Jeon (SunCheon First College, Republic of Korea);*
- 2 Structure Improvement for Suppressing High Mode of Folded Waveguide Traveling Wave Tube  
*Tianyu Fang (University of Electronic Science and Technology of China, China); Jin Xu (University of Electronic Science and Technology of China, China); Hua-Rong Gong (University of Electronic Science and Technology of China, China); Hai-Rong Yin (University of Electronic Science and Technology of China, China); Zhi-Gang Lu (University Electronic Science and Technology of China, China); Tao Tang (University of Electronic Science and Technology of China, China);*
- 3 Design of Flexible Bandpass Filter Using CRLH  
*Jin-Sup Kim (Korea Electronics Technology Institute, Republic of Korea); Jae-Young Lee (Korea Electronics Technology Institute, Republic of Korea); Kyu-Bok Lee (Korea Electronics Technology Institute, Republic of Korea);*
- 4 A Study on Tunable Bandpass Filter Using Tapped Resonators Loaded with Varactors  
*Ryoichi Komagamine (Kisarazu National College of Technology, Japan); Noritake Koura (Kisarazu National College of Technology, Japan); Takanobu Ohno (Kisarazu National College of Technology, Japan); Kouichi Ishii (Kisarazu National College of Technology, Japan);*
- 5 Size Reduction and Harmonic Suppression of Narrow Bandpass Waveguide Filters Using Nonuniform Waveguides  
*Mohsen Yazdani (Iran University of Science and Technology, Iran); Mohammad Khalaj-Amirhosseini (Iran University of Science and Technology, Iran); Forough Hosseini (Iran University of Science and Technology, Iran);*

- 6 An Asymmetric Dual-band HTS Band-pass Filter for American Mobile Phone System  
*Ammar M. Abu-Hudrouss (IUG-Gaza, Palestine); Awni B. Jayyousi (University of Amman, Jordan); Michael J. Lancaster (Birmingham University, UK);*
- 7 Modeling and Analysis of Planar Array Antenna Integrated with Double-layer Band-pass FSS  
*Xin-Yu Hou (University of Electronic Science and Technology of China, China); Wenming Tian (University of Electronic Science and Technology of China, China);*
- 8 A New Algorithm about Extrapolating Near Distance Field to Far-field of Large Size Antenna  
*Yongxin Zhao (The 46th Middle School of Xi'an, China); Jianjun Wei (Shaanxi Qiangde Technology Co., Ltd., China); Nan-Jing Li (Northwestern Polytechnic University, China); Chu-Feng Hu (Northwestern Polytechnic University, China);*
- 9 Design of Multi-band Antenna Using Superrtopf  
*Tsutomu Yokoyama (Sojo University, Japan); T. Hoashi (Sojo University, Japan); T. Nakamiya (Tokai University, Japan);*
- 10 Radiation Patterns of Circumferential-spherical Arrays of Circular Patches  
*Daniel B. Ferreira (Instituto Tecnológico de Aeronáutica, Brazil); Alexis F. Tinoco Salazar (Instituto Tecnológico de Aeronáutica, Brazil); José Carlos da Silva Lacava (Instituto Tecnológico de Aeronáutica, Brazil);*
- 11 Design of Low-cost Antennas for Globalstar Applications  
*Daniel C. Nascimento (Instituto Tecnológico de Aeronáutica, Brazil); Ricardo Schildberg (Instituto Tecnológico de Aeronáutica, Brazil); José Carlos da Silva Lacava (Instituto Tecnológico de Aeronáutica, Brazil);*
- 12 A Waveguide Slot Array 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);*
- 13 Miniaturization of a Ultra Wide Band Antenna  
*Hyung Kuk Yoon (Yonsei University, South Korea); Jin A. Park (Yonsei University, South Korea); Yohan Lim (Yonsei University, South Korea); Young Joong Yoon (Yonsei University, Korea); Cheon-Hee Lee (Yonsei University, Korea);*
- 14 Bandwidth Estimating Strategy for a 2-Layer Rectangular Suspended Microstrip Antenna  
*Laila Fighera Marzall (TSM Antennas, Brazil); José Carlos da Silva Lacava (Instituto Tecnológico de Aeronáutica, Brazil);*
- 15 An Effective Strategy for Designing Probe-fed Linearly-polarized Thick Microstrip Arrays with Symmetrical Return Loss Bandwidth  
*Laila Fighera Marzall (TSM Antennas, Brazil); Daniel C. Nascimento (Instituto Tecnológico de Aeronáutica, Brazil); Ricardo Schildberg (Instituto Tecnológico de Aeronáutica, Brazil); José Carlos da Silva Lacava (Instituto Tecnológico de Aeronáutica, Brazil);*
- 16 Structural Analysis of the Microstrip Sample Holder  
*M. R. F. Gontijo (CTA, Brazil); Ellen Yoshie Sudo Lutif (CTA, Brazil); Alberto Jose de Faro Orlando (CTA, Brazil); Antonio Carlos da Cunha Migliano (CTA, Brazil);*
- 17 Novel Application of CPW in Antenna Design for Dual-frequency Operation  
*Guo-Chao Wang (Northwestern Polytechnical University, China); Jia-Dong Xu (Northwestern Polytechnical University, China);*
- 18 Ground Slotted Landa Shape Single Feed UWB Circular Polarized Antenna for 2.4 GHz RFID Reader  
*Esmat Abdel-Fattah Abdallah (Electronics Research Institute, Egypt); Tamer Gaber Abo-Elnaga (Electronics Research Institute, Egypt); Hadia S. El-Henawy (Ain Shams University, Egypt);*
- 19 Ground Slotted Phi Shape UWB Stacked Circular Polarized Antenna for 5.8 GHz RFID Reader  
*Esmat Abdel-Fattah Abdallah (Electronics Research Institute, Egypt); Tamer Gaber Abo-Elnaga (Electronics Research Institute, Egypt); Hadia S. El-Henawy (Ain Shams University, Egypt);*
- 20 Multi-objective Optimization Design of Multilayer RFID Tag Antenna by Pareto GA  
*Chao Li (Southwest Jiaotong University, China); Quanyuan Feng (Southwest Jiaotong University, China); Wen Pan (Southwest Jiaotong University, China);*
- 21 A High Gain Wide Band Parasitic Dipole Antenna with Inverted L Parallel Feeding Line  
*Pui Yi Lau (City University of Hong Kong, China); Kenneth Kin-On Yung (City University of Hong Kong, China); Edward Kai-Ning Yung (City University of Hong Kong, China);*

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**Session 1P1**
**Electromagnetic Modeling, Inversion and Applications 2**


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**Monday PM, July 5, 2010**
**Room A**

 Organized by Ganquan Xie, Michael Oristaglio,  
 Jianhua Li

 Chaired by Ganquan Xie, Michael Oristaglio
 

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- 13:00 Microwave Sensing of Maple Trees for Pest Detection  
*Kassi Stein (Northeastern University, USA); Carey M. Rappaport (Northeastern University, USA);*
- 13:20 An Electromagnetic Target Classification Method for the Target Sets with Alien Target: Application to Small-scale Aircraft Targets  
*Mustafa Secmen (Izmir Institution of Technology, Turkey); Gonul Turhan-Sayan (Middle East Technical University, Turkey);*
- 13:40 Unsupervised Electromagnetic Target Classification by Self-organizing Map Type Clustering  
*Tufan Taylan Katilmis (Middle East Technical University, Turkey); Evren Ekmekci (Middle East Technical University, Turkey); Gonul Turhan-Sayan (Middle East Technical University, Turkey);*
- 14:00 Developments in the Classification of TAOS Optical Scattering Patterns from Single, Heterogeneous Airborne Particles  
*Giovanni Franco Crosta (University of Milan-Bicocca, Italy); Yong-Le Pan (Yale University, USA); Gustavo Eddino Fernandes (Brown University, USA); Richard K. Chang (Yale University, USA);*
- 14:20 The Semi-analytic Mode Matching Algorithm for GPR Wave Scattering from Complex Objects Buried in a Dielectric Soil Half Space Illuminated by a Dipole Source  
*Ann W. Morgenthaler (Northeastern University, USA); Carey M. Rappaport (Northeastern University, USA);*
- 14:40 Computing Casimir Forces with LibRWG: An Open-source C++ Code Suite for Boundary-element Analysis of EM Scattering Problems  
*M. T. Homer Reid (Massachusetts Institute of Technology, USA); Jacob K. White (Massachusetts Institute of Technology, USA); Steven G. Johnson (Massachusetts Institute of Technology, USA);*
- 15:00 **Coffee Break**
- 15:20 Computing the Magnetic Induction Field Due to a Radially-magnetized Finite Cylindrical Permanent Magnet by Employing Toroidal Harmonics  
*Jerry P. Selvaggi (Rensselaer Polytechnic Institute, USA); Sheppard J. Salon (Rensselaer Polytechnic Institute, USA); M. V. K. Chari (Rensselaer Polytechnic Institute, USA);*
- 15:40 High Order OcTree Discretization for Maxwell Equations  
*Lior Horesh (IBM TJ Watson Research Center, USA); Eldad Haber (University of British Columbia, Canada); A. R. Conn (IBM TJ Watson Research Center, USA);*
- 16:00 Ultra Wide Band Communication through Plasma Generated by Corona Effect around High Voltage Line  
*Milad Johnny (Iran University of Science & Technology, Iran); Seyyed Ali Hassani Gangaraj (Iran University of Science & Technology, Iran);*
- 16:20 Novel GLLH EM Cloak with Front Branching and without Exceed Light Speed Violation  
*Ganquan Xie (GL Geophysical Laboratory, USA); Jianhua Li (GL Geophysical Laboratory, USA); Lee Xie (GL Geophysical Laboratory, USA); Feng Xie (GL Geophysical Laboratory, USA);*
- 16:40 Energy Gap in Saturn's Rings  
*D. A. Pospelov (General Physics Institute, Russian Academy of Sciences, Russia); V. V. Tchernyi (General Physics Institute, Russian Academy of Sciences, Russia); Andrew Y. Pospelov (Institute of Radioengineering and Electronics, Russian Academy of Sciences, Russia);*
- 17:00 Resolution of Two Difficulties in Space-borne SAR Images: Range Ambiguity and Foreshorten  
*Xiu-Qing Liu (Institute of Electronics, Chinese Academy of Sciences, China); Xin Gao (Institute of Electronics, Chinese Academy of Sciences, China);*
- 17:20 Three Dimensional Imaging and Focusing of Ground Penetrating Radar Data  
*Said I. Elkhatali (Academy of Postgraduate Studies, Libya);*
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- Session 1P2a**  
**Magnetic Based Composite Materials**
- 
- Monday PM, July 5, 2010**  
**Room B**
- Organized by Pilar Marín, Konstantin N. Rozanov  
 Chaired by Pilar Marín
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- 13:00 A New Mixing Rule for Frequency Dependence of Permeability in Composites  
*Konstantin N. Rozanov (Institute for Theoretical and Applied Electromagnetics RAS, Russia); Marina Y. Koledintseva (Missouri University of Science and Technology, USA); James L. Drewniak (Missouri University of Science and Technology, USA);*
- 13:20 Effective Electromagnetic Parameters of Composites Containing Magnetic Platelets  
*Marina Y. Koledintseva (Missouri University of Science and Technology, USA); James L. Drewniak (Missouri University of Science and Technology, USA); Konstantin N. Rozanov (Institute for Theoretical and Applied Electromagnetics RAS, Russia);*
- 13:40 Electromagnetic Wave Absorption Properties of Metallic Magnet Based Nanocomposites  
*Jiurong Liu (Shandong University, China); Jing Kong (Shandong University, China); Fenglong Wang (Shandong University, China); Masahiro Itoh (Osaka University, Apan); Ken-Ichi Machida (Osaka University, Japan);*
- 14:00 High Frequency Magnetic Behaviour of Composites Based on Nanocrystalline Microwires  
*Pilar Marín (Universidad Complutense de Madrid, Spain); A. Aragón (Universidad Complutense de Madrid, Spain);*
- 14:20 “Yin-Yang” Reflection from a Magnetic Photonic Crystal  
*Shiyang Liu (Fudan University, China); Wanli Lu (Fudan University, China); Zhifang Lin (Fudan University, China); Siu-Tat Chui (University of Delaware, USA);*
- 14:40 Disorder Surface Spins Effects in LCMO Nanoparticles  
*Aamir Minhas Khan (Air University, Pakistan); Arif Mumtaz (Quaid-I-Azam University, Pakistan);*
- 15:00 **Coffee Break**
- 15:40 Enhancement of Radio-wave Diffraction by a Dielectric-column-edge for an Indoor High-frequency Ad Hoc Network: Experiments  
*Toyokatsu Miyashita (Ryukoku University, Japan); Toshitaka Kato (Ryukoku University, Japan); Ayumu Kashihara (Ryukoku University, Japan);*
- 16:00 Qualitative Scattering and Energy Conservation  
*R. Aramini (Universita di Trento, Italy); G. Caviglia (Universita di Genova, Italy); Andrea Massa (University of Trento, Italy); Michele Piana (Universita di Verona, Italy);*
- 16:20 A Predicting Methodology of Scattering by Clusters of Multi-Objects/Systems Based on Plane Wave Database  
*Xin-Qing Sheng (Beijing Institute of Technology, China); Xiao-Min Pan (Beijing Institute of Technology, China); Chu-Qiang Deng (Beijing Institute of Technology, China);*
- 16:40 Vectorial Extended Geometrical Optics for Scattering of a Spheroid  
*Kuanfang Ren (Universite et INSA de Rouen, France); Fabrice R. A. Onofri (Univ Aix Marseille 1, France); Claude Rozé (Universite et INSA de Rouen, France); Thierry Girasole (Univ Aix Marseille 1, France);*
- 17:00 On the Scattering from Tilled Row Soils  
*Francesco Mattia (Istituto di Studi sui Sistemi Intelligenti per l'Automazione (ISSIA), Italy);*
- 17:20 Analysis of Electromagnetic Scattering from Rough Layered Interfaces by Means of the Curvilinear Coordinate Method  
*Kofi Edee (UMR 6602 du CNRS, France); Gérard Granet (UMR CNRS 6602, France); Richard Dusséaux (Universite de Versailles, France); Saddek Afifi (University Badji Mokhtar, Algeria);*

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**Session 1P2b****Scattering, Diffraction and Rough Surface Scattering**

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**Monday PM, July 5, 2010****Room B**Chaired by Gérard Granet, Xin-Qing Sheng

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- 15:20 Relativistic Scattering Processes of Charged Particles in Presence of a Laser Field  
*Younes Attaourti (University of Cadi Ayyad, Morocco);*

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**Session 1P3a****Static Magnetic Fields — Biological Effects**

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**Monday PM, July 5, 2010****Room C**

Organized by Arthur D. Rosen

Chaired by Arthur D. Rosen

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- 13:20 Biological Effect of Strong Static Magnetic Field on Mosquito Egg Hatching and Bacterium *Shewanella Oneidensis* Gene Expression  
*Hongjun Pan (University of North Texas, USA);*

- 13:40 High Magnetic Fields Interact with the Vestibular System of Rodents  
*Thomas A. Houpt (Florida State University, USA); James C. Smith (Florida State University, USA);*
- 14:00 Phagocytosis of Dying Cells: Influence of Static Magnetic Fields  
*Luciana Dini (University of Salento, Italy);*
- 14:20 Mice Can Detect Very Low Frequency Magnetic Fields: The Threshold Amplitudes of These Nano Tesla Are Frequency Dependent  
*Frank S. Prato (Lawson Health Research Institute, Canada);*
- 14:40 Effects of Long Term Exposure of GH3 Cells to Static Magnetic Fields  
*Arthur D. Rosen (Purdue University, USA); Erin E. Chastney (Purdue University, USA);*
- 15:00 **Coffee Break**

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**Session 1P3b**  
**Applicators for Medical and Industrial Applications of EM Field**

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**Monday PM, July 5, 2010**

**Room C**

Organized by Jan Vrba

Chaired by Jan Vrba

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- 15:20 A Variable Step Size Algorithm for Blind Equalization of QAM Signals  
*Wei Xue (National Laboratory of Information Control Technology for Communication System, China); Xiaoni Yang (National Laboratory of Information Control Technology for Communication System, China); Zhaoyang Zhang (Zhejiang University, China);*
- 15:40 Metamaterial Hat  
*Soheil Hashemi (Tehran University, Iran); Ali Mohitadi (Tehran University, Iran); Ali Abdolali (Iran University of Science and Technology, Iran); Homayoon Oraizi (Iran University of Science and Technology, Iran);*
- 16:00 Validating the Four-zero Conductivity Model for Wave Propagation in Dispersive Media with FDTD  
*Sarah Brown (Northeastern University, USA); Sherrette Yeates (Northeastern University, USA); Carey M. Rappaport (Northeastern University, USA);*

- 16:20 Effect of Human Head Shapes for Mobile Phone Exposure on Electromagnetic Absorption  
*Mohammad Rashed Iqbal Faruque (Universiti Kebangsaan Malaysia, Malaysia); Mohammad Tariqul Islam (Universiti Kebangsaan Malaysia, Malaysia); Norbahiah Misran (Universiti Kebangsaan Malaysia, Malaysia);*
- 16:40 Microwave Heating of Acids in Chemical Industry  
*Jan Vrba (Czech Technical University in Prague, Czech Republic); Jan Vrba (Jr.) (RWTH Aachen University, Germany); David Vrba (Czech Technical University in Prague, Czech Republic);*
- 17:00 Resonances in Aperture of Waveguide Applicators for Microwave Thermotherapy  
*Jan Vrba (Czech Technical University in Prague, Czech Republic); Jan Vrba (Jr.) (RWTH Aachen University, Germany); David Vrba (Czech Technical University in Prague, Czech Republic);*
- 17:20 Exposure Systems for Research of EM Field Biological Effects  
*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); David Vrba (Czech Technical University in Prague, Czech Republic); Luca Vannucci (Institute of Microbiology, Czech Academy of Sciences, Czech Republic);*

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**Session 1P4**

**Microwaves and Magnonics: Metamaterials, Antennas, Near-field Structures**

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**Monday PM, July 5, 2010**

**Room D**

Organized by Eugene O. Kamenetskii

Chaired by Eugene O. Kamenetskii, Maciej Krawczyk

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- 13:20 Arrays of Magnetic Nano-elements as Magnonic Metamaterials: Insights from Analytical and Numerical Modeling  
*M. O. Dvornik (University of Exeter, UK); O. Dmytriiev (University of Exeter, UK); P. Bondarenko (Institute of Magnetism, Ukraine); Borys A. Ivanov (Institute of Magnetism, Ukrainian Academy of Science, Ukraine); Volodymyr V. Kruglyak (University of Exeter, UK);*

- 13:40 Patch Antenna with Small Ferrite Particles  
*Michaels Sigalov (RF Dynamics LTD, Israel); Reuven Shavit (Ben-Gurion University of the Negev, Israel); Roman Joffe (Ben-Gurion University of the Negev, Israel);*
- 14:00 Modeling Spin-wave Dispersion in One and Two-dimensional Magnonic Crystals by Structural Changes  
*Maciej Krawczyk (Adam Mickiewicz University, Poland); Sławomir Mamica (Adam Mickiewicz University, Poland); Jarosław W. Kłos (Adam Mickiewicz University, Poland); Mykhaylo Sokolovskyy (Adam Mickiewicz University, Poland); Javier Romero-Vivas (Adam Mickiewicz University, Poland);*
- 14:20 Gyrotropic Mode Splitting in Pair of Magnetostatically Coupled Permalloy Disks in an Ordered Array  
*Anjan Barman (S. N. Bose National Centre for Basic Sciences, India); Saswati Barman (S. N. Bose National Centre for Basic Sciences, India); T. Kimura (University of Tokyo, Japan); Y. Fukuma (RIKEN ASI, 2-1 Hirosawa, Japan); Yoshichika Otani (University of Tokyo, Japan);*
- 14:40 Spin Waves in 2D Magnetic Vortices  
*Jean-Claude Serge Levy (Univ. Paris 7, France); Philippe Depondt (Univ. Paris 6, France); Sławomir Mamica (Adam Mickiewicz University, Poland); Maciej Krawczyk (Adam Mickiewicz University, Poland);*
- 15:00 **Coffee Break**
- 15:20 Arrays of Magnetic-dipolar-mode Particles  
*Michaels Sigalov (RF Dynamics LTD, Israel); Eugene O. Kamenetskii (Ben-Gurion University of the Negev, Israel); Reuven Shavit (Ben-Gurion University of the Negev, Israel);*
- 15:40 Simulation Studies of Propagation of Local Magnetic Excitation in One Dimensional Chains of Nanomagnets  
*Saswati Barman (S. N. Bose National Centre for Basic Sciences, India); Anjan Barman (S. N. Bose National Centre for Basic Sciences, India); Yoshichika Otani (University of Tokyo, Japan);*
- 16:00 Long-range Magnetic-dipolar Interactions in Confined Magnetic Structures  
*Eugene O. Kamenetskii (Ben-Gurion University of the Negev, Israel);*
- 16:20 The Influence of Electric Field on Magnetic Vortices in Confined Magnetic Structures  
*Alexander P. Pyatakov (M. V. Lomonosov Moscow State University, Russia); Georgy A. Meshkov (M. V. Lomonosov Moscow State University, Russia);*

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**Session 1P5**  
**Optical Properties of Semiconductors and Nanostructures 2**

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**Monday PM, July 5, 2010**

**Room E**

Organized by Shi Jie Xu

Chaired by Shi Jie Xu

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- 13:20 GaAs Micro-nano Disks for Opto-mechanics Applications  
*Lu Ding (Université Paris Diderot, France); Christopher Baker (Université Paris Diderot, France); Pascale Senellart (LPN/CNRS, France); Sara Ducci (Université Paris Diderot, France); Giuseppe Leo (Université Paris Diderot, France); Ivan Favero (Univ Munich, Germany);*
- 13:40 Optical Spectroscopy of Single Quantum Dots in Advanced Photonic Structures  
*Megan Creasey (University of Texas, USA); J. Bleuse (CEA/INAC/SP2M, France); Julien Claudon (CEA/INAC/SP2M, France); N. S. Malik (CEA/INAC/SP2M, France); Maela Bazin (CEA/INAC/SP2M, France); I. Maksymov (Institut d'Optique/LCFIO, France); Christophe Sauvan (Institut d'Optique/LCFIO, France); J. P. Hugonin (Institut d'Optique/LCFIO, France); Philippe Lalanne (Institut d'Optique/LCFIO, France); Jean-Michel Gérard (CEA/INAC/SP2M, France); Xiaoqin Li (University of Texas, USA); J. H. Lee (Kwangwoon University, South Korea); Zhiming Wang (University of Arkansas, USA); Gregory J. Salamo (University of Arkansas, USA);*
- 14:00 Polarons  
*Huichun Liu (National Research Council, Canada);*
- 14:20 Tuning the Optical Properties of Semiconductor Nanowire Heterostructures  
*Leigh M. Smith (University of Cincinnati, USA); Howard E. Jackson (University of Cincinnati, USA); Jan Yarrison-Rice (University of Cincinnati, USA); Chennupati Jagadish (The Australian National University, Australia); Jin Zou (University of Queensland, Australia);*
- 14:40 Near-field Optical Imaging of Enhanced Photon Fields and Plasmon Waves in Metal Nanostructures  
*Hiromi Okamoto (Institute for Molecular Science, Japan); Kohei Imura (Waseda University, Japan);*
- 15:00 **Coffee Break**

- 15:20 Hexagonal Boron Nitride as a New Ultraviolet Luminescent Material and Its Device Application  
*Kenji Watanabe (National Institute for Materials Science, Japan); Takashi Taniguchi (National Institute for Materials Science, Japan); Kenta Miya (Futaba Corporation, Japan); Yoshitaka Sato (Futaba Corporation, Japan); Kazuhito Nakamura (Futaba Corporation, Japan); Takahiro Niiyama (Futaba Corporation, Japan); Masateru Taniguchi (Futaba Corporation, Japan);*
- 15:40 Luminescence Imaging and Blinking Behavior of Individual InGaN Nanoclusters Formed in GaN Matrix  
*S. J. Xu (The University of Hong Kong, China); D. G. Zhao (Institute of Semiconductors, Chinese Academy of Sciences, China); H. Yang (Suzhou Institute of Nano-tech and Nano-bionics, Chinese Academy of Sciences, China);*
- 16:00 Influence of Ion Implantation on Second Harmonic Generation in ZnO Single Crystals  
*Chang Cheng Zheng (The University of Hong Kong, China); Shi Jie Xu (The University of Hong Kong, China); Ji Qiang Ning (The University of Hong Kong, China); Yuk Nga Chen (The University of Hong Kong, China); C. C. Ling (The University of Hong Kong, China);*
- 16:20 Optical Study and MOCVD Growth of III-nitride Based Quantum Dots and UV Materials Using High Temperature AlN Buffer on Sapphire  
*T. Wang (University of Sheffield, UK);*
- 16:40 From Nanosphere Lithography to Self-assembled Photonic Crystals  
*W. Y. Fu (The University of Hong Kong, China); K. H. Li (The University of Hong Kong, China); H. W. Choi (The University of Hong Kong, China);*
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- Session 1P6**  
**Poster Session 3**
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- Monday PM, July 5, 2010**  
**14:00 PM - 17:00 PM**  
**Room F**
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- 1 A Novel and Reliable Method for Bandwidth Expansion in Microstrip Array Antenna  
*Mohsen Fallah (Iran University of Science and Technology (IUST), Iran); Farrokh Hojjat Kashani (Iran University of Science and Technology (IUST), Iran); S. H. Mohseni (Iran University of Science and Technology (IUST), Iran);*
- 2 Unified Statistical Modeling of RF Multipath in Wireless Communications  
*Kung Yao (UCLA (University of California, Los Angeles), USA);*
- 3 Detection Algorithm for MIMO Systems Based on Genetic Algorithms with Variable Population Size  
*Ammar M. Abu-Hudrouss (IUG-Gaza, Palestine);*
- 4 Chaotic Interleaving: A Tool to Enhance the Performance of Bluetooth Systems  
*Mohsen Ahmed Mahmoud Mohamed El-Bendary (Helwan University, Egypt); Atef El-Sayed Abou-El-azm (Menoufia University, Egypt); Nawal Ahmed El-Fishawy (Menoufia University, Egypt); Farid Shawki M. Al-Hosarey (Menoufia University, Egypt); Mostafa A. R. El-Tokhy (Helwan University, Egypt); Fathi E. Abd El-Samie (Menoufia University, Egypt);*
- 5 A Highly Efficient Doherty Power Amplifier with Impedance Transform  
*Guorui Yang (Southwest Jiaotong University, China); Quanyuan Feng (Southwest Jiaotong University, China); Wen Pan (Southwest Jiaotong University, China);*
- 6 Comparison of Bit Error Rate for Propagation Mechanisms of Millimeter Waves in Practical Communication Systems Employing PSK and FSK  
*Preethi Kumar (Amrita Vishwa Vidyapeetham, India); M. Jayakumar (Amrita Vishwa Vidyapeetham, India);*
- 7 Performance of Real-time Audio Signal Transmission over ACL Link with Channel Interleaving Consideration  
*Mohsen Ahmed Mahmoud Mohamed El-Bendary (Helwan University, Egypt); Atef El-Sayed Abou-El-azm (Menoufia University, Egypt); Nawal Ahmed El-Fishawy (Menoufia University, Egypt); A. Hagagg (Helwan University, Egypt); Farid Shawki M. Al-Hosarey (Menoufia University, Egypt); Fathi E. Abd El-Samie (Menoufia University, Egypt);*
- 8 Using Parallel Computing for Adaptive Beamforming Applications  
*Eman Ahmed Fahmy (Ain Shams University, Egypt); Korany Ragab Mahmoud (Helwan University, Egypt); Safwat Helmy Hamad (Ain Shams University, Egypt); Zaki Taha Fayed (Ain Shams University, Egypt);*
- 9 Compact Wideband Antenna for Mobile Handsets  
*Ho-Jun Lee (Korea Electronics Technology Institute, Korea); Kyu-Bok Lee (Korea Electronics Technology Institute, Republic of Korea); Jong-Kyu Kim (Korea Electronics Technology Institute, Korea);*

- 10 GSM/DCS Dualband Antenna for Mobile Handsets  
*Ho-Jun Lee (Korea Electronics Technology Institute, Korea); Seok-Ho Choi (Partron Co., Ltd, South Korea); Byoung-Jun Yim (Partron Co., Ltd, South Korea);*
- 11 Permanent Magnet Synchronous Motor Decoupling Control Study Based on the Inverse System  
*Xiaoning Li (University of Electronic Science and Technology of China, China); Xumei Mao (University of Electronic Science and Technology of China, China); Weigan Lin (University of Electronic Science and Technology of China, China);*
- 12 Modeling Buck Converter by Using Fourier Analysis  
*Mao Zhang (University of Central Lancashire, UK); Weiping Zhang (North China University of Technology, China); Zheng Zhang (North China University of Technology, China);*
- 13 The Comparison of Direct and Indirect Matrix Converters  
*Petr Chlebis (VSB — Technical University of Ostrava, Czech Republic); Petr Simonik (VSB — Technical University of Ostrava, Czech Republic); Michal Kabasta (VSB — Technical University of Ostrava, Czech Republic);*
- 14 Design of a High Speed Universal Motor for Organic Agriculture Applications  
*Hanzhou Liu (University of Central Florida, USA); David Woodburn (University of Central Florida, USA); Shaohua Lin (University of Central Florida, USA); Thomas X. Wu (University of Central Florida, USA); Jianjian Wei (Beijing TEPEC Technology Corporation, China); Keqiang Cao (Agriculture University of Hebei, China);*
- 15 Use of FACTS Devices in Power Systems for Power Quality Improvement  
*H. D. Sharma (JIET, India); Malay Ranjan Tripathy (Jind Institute of Engineering and Technology (JIET), India); S. K. Gupta (DCRUST, India);*
- 16 Study on the Interference Effect of ZigBee by Interference Signal Using GTEM Cell  
*Sangbong Jeon (Korea Radio Promotion Association, Korea); Chang-Han Jun (Korea Radio Promotion Association, Korea); Youngho Kim (Electronics and Telecommunications Research Institute, Korea); Yeon-Choon Chung (Seokyeong University, Korea); Sangho Choi (Korea Radio Promotion Association, Korea);*
- 17 Interference Test from Unintentional Noise to Terrestrial-DMB Using GTEM Cell  
*Sangbong Jeon (Korea Radio Promotion Association, Korea); Chang-Han Jun (Korea Radio Promotion Association, Korea); Youngho Kim (Electronics and Telecommunications Research Institute, Korea); Yeon-Choon Chung (Seokyeong University, Korea); Sangho Choi (Korea Radio Promotion Association, Korea);*
- 18 Shielded and Unshielded Three-conductor Transmission Lines: Modeling and Crosstalk Performance  
*Mnaouer Kachout (Sup'com, Tunisia); Jamel Bel Hadj Tahar (Sup'com, Tunisia); Fethi Choubani (Sup'com, Tunisia);*
- 19 Side Effect Characterization of EBG Structures in Microstrip Patch Antenna  
*Mohsen Fallah (Iran University of Science and Technology (IUST), Iran); Farrokh Hojjat Kashani (Iran University of Science and Technology (IUST), Iran); S. H. Mohseni (Iran University of Science and Technology (IUST), Iran);*
- 20 The Eigenvalues of Quantized Spin Waves and the Uniaxial Anisotropy in a Biferromagnetic System  
*Xiaojuan Hou (Inner Mongolia University, China); Guohong Yun (Inner Mongolia Normal University, China); Yuhao Bai (Inner Mongolia University, China); Bai Narsu (Inner Mongolia Normal University, China);*

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**Session 1P7  
Poster Session 4**

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**Monday PM, July 5, 2010**

**14:00 PM - 17:00 PM**

**Room G**

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- 1 Effect of the Cubic Anisotropy and the Jump Phenomenon in the Angular Dependence of the Exchange Bias  
*Yuhao Bai (Inner Mongolia University, China); Guo Hong Yun (Inner Mongolia University, China);*
- 2 Magnetostrictive Bending of a Cantilevered Ultrathin Film-substrate System  
*Jiangang Li (Inner Mongolia University, China); Guo Hong Yun (Inner Mongolia University, China);*



- 3 Structure Optimization for Magnetic Equipment of Permanent Magnet Retarder Using ANSYS  
*B. F. Jiao (Beijing University of Technology, China); Desheng Li (Beijing University of Technology, China); Yongkang Sui (Beijing University of Technology, China); Lezhi Ye (Beijing University of Technology, China);*
- 4 Analysis of Drilling Parallel Horizontal Twin Wells Rotating Magnetic Beacons Magnetic Field Strength Size in SAGD  
*B. Tu (Beijing University of Technology, China); Desheng Li (Beijing University of Technology, China); E. H. Lin (Beijing University of Technology, China); B. Luo (Beijing University of Technology, China); J. He (Beijing University of Technology, China); Lezhi Ye (Beijing University of Technology, China); J. L. Liu (Beijing University of Technology, China); Y. Z. Wang (Beijing University of Technology, China);*
- 5 Full-wave Equivalent Circuit of Planar Multilayer Structures for Remote Sensing Applications  
*Daniel B. Ferreira (Instituto Tecnológico de Aeronáutica, Brazil); Sidnei J. S. Sant'Anna (Instituto Nacional de Pesquisas Espaciais, Brazil); José Carlos da Silva Lacava (Instituto Tecnológico de Aeronáutica, Brazil);*
- 6 A Novel Method for Application of Information Processing System Based on Servo Mechanism  
*Meng Li (Shanghai Maritime University, China); Wei Wei Cheng (Zhejiang University, China);*
- 7 Tumor Classification Using Radar Target Signatures  
*Raquel Cruz Conceicao (National University of Ireland Galway, Ireland); Martin O'Halloran (National University of Ireland Galway, Ireland); Dallan Byrne (National University of Ireland Galway, Ireland); Edward Jones (National University of Ireland Galway, Ireland); Martin Glavin (National University of Ireland Galway, Ireland);*
- 8 Optimizing Windows Security Features to Block Malware and Hack Tools on USB Storage Devices  
*Dung Vu Pham (Charles Sturt University, Australia); Malka N. Halgamuge (The University of Melbourne, Australia); Ali Syed (Charles Sturt University, Australia); Priyan Mendis (The University of Melbourne, Australia);*
- 9 Evaluated the High Rang Resolution Profile Identifying Simulation by Laser Radar of the Rotation Targets  
*Ming-Jun Wang (Xianyang Normal College, China); Zhen-Sen Wu (Xidian University, China); Ying-Le Li (Xianyang Normal University, China); Jia-Dong Xu (Northwestern Polytechnical University, China);*
- 10 Problems of Statistical Decisions in Ocean Monitoring  
*Ferdenant A. Mkrtchyan (Institute of Radioengineering and Electronics, Russian Academy of Sciences, Russia);*
- 11 An Adaptive Spectroellipsometric Identifier for Ecological Monitoring of the Aquatic Environment  
*Ferdenant A. Mkrtchyan (Institute of Radioengineering and Electronics, Russian Academy of Sciences, Russia); V. F. Krapivin (Institute of Radioengineering and Electronics, Russian Academy of Sciences, Russia); V. I. Kovalev (Institute of Radioengineering and Electronics, Russian Academy of Sciences, Russia); V. V. Klimov (Institute of Radioengineering and Electronics, Russian Academy of Sciences, Russia);*
- 12 Excitation of Surface Plasmon and Its Sensing Application Based on a Metal Grating  
*Taikei Suyama (Kumamoto University, Japan); Yaoju Zhang (Wenzhou University, China); Yoichi Okuno (Kumamoto University, Japan);*
- 13 A Uniform Asymptotic Solution for Diffraction by a Right-angled Dielectric Wedge  
*Gianluca Gennarelli (University of Salerno, Italy); Giovanni Riccio (University of Salerno, Italy);*
- 14 Diffraction by a Double-negative Metamaterial Layer with PEC Backing  
*Gianluca Gennarelli (University of Salerno, Italy); Giovanni Riccio (University of Salerno, Italy);*
- 15 Liquid-crystal Step-grating Beam Deflector  
*Yaoju Zhang (Wenzhou University, China); Youyi Zhuan (Wenzhou University, China); Taikei Suyama (Kumamoto University, Japan);*
- 16 Interaction of Metal Nanoparticles with Multilayered Substrates  
*Silvia Macho Del Río (Universidad de Cantabria, Spain); Pablo Albella (Universidad de Cantabria, Spain); Francisco González (Universidad de Cantabria, Spain); José María Saiz (Universidad de Cantabria, Spain); Fernando Moreno (Universidad de Cantabria, Spain);*
- 17 Arbitrary Incidence Angle Polarizers Using Dielectric and Magnetic Layers  
*Mohammad Khalaj-Amirhosseini (Iran University of Science and Technology, Iran);*

- 18 A Novel Four-port De-embedding Method and the Parametric Extraction of MOSFETs  
*Chie-In Lee (National Sun Yat-Sen University, Taiwan, R.O.C.); Wei-Cheng Lin (National Sun Yat-Sen University, Taiwan, R.O.C.); Chun-Chung Chen (National Sun Yat-Sen University, Taiwan, R.O.C.); Yan-Ting Lin (National Sun Yat-Sen University, Taiwan, R.O.C.); Yen-Ting Lee (National Sun Yat-Sen University, Taiwan, R.O.C.);*
- 19 The RF I-V Curve for PHEMT through the Small Signal  $S$ -parameter Extraction Method  
*Chie-In Lee (National Sun Yat-Sen University, Taiwan, R.O.C.); Wei-Cheng Lin (National Sun Yat-Sen University, Taiwan, R.O.C.); Yen-Ting Lee (National Sun Yat-Sen University, Taiwan, R.O.C.); Yan-Ting Lin (National Sun Yat-Sen University, Taiwan, R.O.C.);*
- 20 A Novel H-shaped Slot-coupled Antenna for the Integration of Power Amplifier  
*Chie-In Lee (National Sun Yat-Sen University, Taiwan, R.O.C.); Wei-Cheng Lin (National Sun Yat-Sen University, Taiwan, R.O.C.); Yan-Ting Lin (National Sun Yat-Sen University, Taiwan, R.O.C.); Yen-Ting Lee (National Sun Yat-Sen University, Taiwan, R.O.C.);*
- 09:00 3D IE Modeling with a Linear Dependence on Model Size  
*Dmitry Avdeev (Halliburton Energy Services, Exxon Technology Center, USA); Sergei Knizhnik (Halliburton Energy Services, Exxon Technology Center, USA);*
- 09:20 Nitsche-type Mortaring for Maxwell's Equations  
*Karl Hollaus (RWTH Aachen University, Germany); Daniel Feldengut (RWTH Aachen University, Germany); Joachim Schöberl (Vienna University of Technology, Austria); M. Wabro (CST AG, Germany); Dzevat Omeragic (Schlumberger-Doll Research, USA);*
- 09:40 Correction for the Borehole Effect of Multi-component Array Induction Log Data  
*Junsheng Hou (Halliburton Energy Services, Inc., USA); Michael Bittar (Halliburton Energy Services, Inc., USA);*
- 10:00 **Coffee Break**
- 10:20 Determination of Dip and Anisotropy from Multi-frequency Tri-axial Induction Measurements  
*Teruhiko Hagiwara (Aramco Service Company, USA);*
- 10:40 Application of the 2.5D Multiplicative-regularized Gauss-Newton Inversion for Single-well Triaxial Induction Data  
*Aria Abubakar (Schlumberger-Doll Research, USA); Tarek M. Habashy (Schlumberger-Doll Research, USA); Maokun Li (Schlumberger-Doll Research, USA); Jianguo Liu (Schlumberger-Doll Research, USA); Guangdong Pan (Schlumberger-Doll Research, USA);*

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**Session 2A1**
**EM Modeling and Inversion for Well Logging Applications**


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**Tuesday AM, July 6, 2010**
**Room A**

Organized by Dzevat Omeragic, Ian Zhang

 Chaired by Dzevat Omeragic
 

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- 08:20 Review of 3D EM Modeling and Interpretation Methods for Triaxial Induction and Propagation Resistivity Well Logging Tools  
*Sofia Davydcheva (3DEM Consulting, USA); Michael A. Frenkel (EMGS Americas, USA);*
- 08:40 2.5D Finite-difference Modeling of Directional EM Propagation Tools in High-angle and Horizontal Wells  
*Yong-Hua Chen (Schlumberger-Doll Research, USA); Dzevat Omeragic (Schlumberger-Doll Research, USA); Vladimir Druskin (Schlumberger-Doll Research, USA); Leonid Knizhnerman (Schlumberger-Doll Research, USA); Valery Polyakov (Schlumberger-Doll Research, USA); Tarek M. Habashy (Schlumberger-Doll Research, USA); Aria Abubakar (Schlumberger-Doll Research, USA);*
- 11:00 Inversion of Triaxial EM Measurements in Horizontal Wells  
*Hanming Wang (Chevron Energy Technology Company, USA);*
- 11:20 Measuring the Soil Water Content of a Sandy Soil with a Frequency Cross-hole Radar: Antenna Design and Experiments  
*Faycal Rejiba (Université Pierre et Marie Curie, France); Florence Sagnard (LRPC Rouen, France); Cyril Schamper (Université Pierre et Marie Curie, France); Michel Froumentin (CER Rouen, France); Roger Guerin (Univ Pierre et Marie Curie-Paris 6, France);*

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**Session 2A2**  
**Microspheres and Waves**

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**Tuesday AM, July 6, 2010**

**Room B**

Organized by Soon-Cheol Kong, Francesco Papoff

Chaired by Soon-Cheol Kong, Francesco Papoff

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- 08:20 Electromagnetic Scattering by Charged Water Aerosols  
*Alexander Heifetz (Argonne National Laboratory, USA); Nachappa (Sami) Gopalsami (Argonne National Laboratory, USA); Hual-Te Chien (Argonne National Laboratory, USA); Eugene R. Koehl (Argonne National Laboratory, USA); Apostolos C. (Paul) Raptis (Argonne National Laboratory, USA);*
- 08:40 A Mie Approach to Non-spherical Particles  
*B. Hourahine (University of Strathclyde, UK); Francesco Papoff (University of Strathclyde, UK);*
- 09:00 Hot Spots and Photonic Jets: From Spheres to Disks and Rods  
*B. Hourahine (University of Strathclyde, UK); Francesco Papoff (University of Strathclyde, UK);*
- 09:20 Focusing Microprobes Based on Integrated Chains of Microspheres  
*Vasily N. Astratov (University of North Carolina at Charlotte, USA); Arash Darafshah (University of North Carolina at Charlotte, USA); Matthew D. Kerr (University of North Carolina at Charlotte, USA); Kenneth W. Allen (University of North Carolina at Charlotte, USA); Nathaniel M. Fried (University of North Carolina at Charlotte, USA);*
- 09:40 Optical Detection of a Nanometer-thick Dielectric Layer via Cepstral Analysis of Photonic Backscattering  
*Jamesina J. Simpson (University of New Mexico, USA);*
- 10:00 **Coffee Break**
- 10:20 What Can Be Learned from Light-microsphere Interaction for Tissue Imaging?  
*Zhengbin Xu (Purdue University, USA); Jingjing Liu (Purdue University, USA); Young L. Kim (Purdue University, USA);*

- 10:40 Near-field Electromagnetic Effects in Thermal Radiative Transfer  
*Arvind Narayanaswamy (Columbia University, USA); Karthik Rao (Columbia University, USA); Ning Gu (Columbia University, USA); Sheng Shen (Massachusetts Institute of Technology, USA); Gang Chen (Massachusetts Institute of Technology, USA);*
- 11:00 Elastic Backscattering Spectroscopic Microscopy for Understanding Light Propagation at Microscopic Level  
*Yang Liu (University of Pittsburgh, USA); Pin Wang (University of Pittsburgh, USA);*
- 11:20 Numerical Investigation of Dielectric Properties of Metallic Microspheres in the Microwave Frequency Based on a Volume Integral Approach  
*Wendy Yip (Northwestern University, USA); Xu Li (Northwestern University, USA);*

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**Session 2A3a**  
**Power Electronics**

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**Tuesday AM, July 6, 2010**

**Room C**

Organized by Jiri Lettl, Reinhard Doebbelin

Chaired by Jiri Lettl, Reinhard Doebbelin

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- 08:00 Sensorless Control of Permanent Magnet Synchronous Motor Using Luenberger Observer  
*Pavel Brandstetter (VSB-Technical University of Ostrava, Czech Republic); Pavel Rech (VSB-Technical University of Ostrava, Czech Republic); Petr Simonik (VSB-Technical University of Ostrava, Czech Republic);*
- 08:20 Control Algorithms of Active Power Filters  
*Pavel Brandstetter (VSB-Technical University of Ostrava, Czech Republic); Petr Chlebis (VSB-Technical University of Ostrava, Czech Republic); Petr Simonik (VSB-Technical University of Ostrava, Czech Republic);*
- 08:40 Compatibility of Different Types of Frequency Converters with Supply Network  
*Jiri Lettl (Czech Technical University in Prague, Czech Republic); Jan Bauer (Czech Technical University in Prague, Czech Republic);*
- 09:00 Magnetic Field Harmonics of Inductive Power Transmission Systems Fed by Square-wave Inverters  
*Daniel Kürschner (Institut für Automation und Kommunikation e.V., Germany); Christian Rathge (Institut für Automation und Kommunikation e.V., Germany);*

- 09:20 Leakage Inductance Determination for Transformers with Interleaving of Windings  
*Reinhard Doebbelin (Otto-von-Guericke University of Magdeburg, Germany); Andreas Lindemann (Otto-von-Guericke-University Magdeburg, Germany);*
- 09:40 Controlled Battery Charger for Electric Vehicles  
*Martin Geske (Otto von Guericke University, Germany); Thoralf Winkler (Fraunhofer Institute of Factory Operation and Automation IFF, Germany); Przemyslaw Komarnicki (Fraunhofer Institute of Factory Operation and Automation IFF, Germany); Günter Heideck (Otto-von-Guericke-University Magdeburg, Germany);*
- 10:00 **Coffee Break**
- 10:20 Modeling the Electromagnetic Behavior of Power Converters  
*Steffen Schulze (Otto-von-Guericke University, Germany); M. Al-Hamid (Otto-von-Guericke University, Germany); Ralf Vick (Otto-von-Guericke University of Magdeburg, Germany); Reinhard Doebbelin (Otto-von-Guericke University of Magdeburg, Germany);*

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**Session 2A3b**

**Antennas and Array: Theory and Design 1**

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**Tuesday AM, July 6, 2010**

**Room C**

Chaired by Yong-Hua Chen

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- 10:40 Frequency-adjustable Circularly-polarized Ceramic Dielectric Resonator Antenna  
*Shun-Shi Zhong (Shanghai University, China); Li-Xian Li (Shanghai University, China); Sai-Qing Xu (Shanghai University, China); Min-Hua Chen (Shanghai University, China);*
- 11:00 Effects of Metallic Strips on the Radiation Characteristics of Dish Reflector Antennas  
*Ali Houssein Harmouch (American University of Science and Technology (AUST), Lebanon); Walid A. Kamali (Al-Manar University of Tripoli, Lebanon); Ghaleb A. Sanjakdar (Al-Manar University of Tripoli, Lebanon); Ahmad Y. El-Abed (Al-Manar University of Tripoli, Lebanon);*

- 11:20 The Gain Effects of Air Gap Quadratic Aperture-coupled Microstrip Antenna Array  
*Mohd Faizal Jamlos (University Technology Malaysia (UTM), Malaysia); Tharek Bin Abd Rahman (University Technology Malaysia (UTM), Malaysia); Muhammad Ramlee Bin Kamarudin (Universiti Teknologi Malaysia, Malaysia); Mohd Tarmizi Ali (University Technology Mara (UiTM), Malaysia); Mohd Nor Md Tan (Universiti Teknologi Malaysia, Malaysia); P. Saad (Universiti Teknologi Malaysia, Malaysia);*
- 11:40 Polarization Diversity Monopole Antenna  
*Nurul Syahida B. T. Awang Da (Universiti Teknologi Malaysia, Malaysia); Muhammad Rajaei Dzulkifli (Universiti Teknologi Malaysia, Malaysia); Muhammad Ramlee Bin Kamarudin (Universiti Teknologi Malaysia, Malaysia);*

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**Session 2A4**

**Electromagnetic Theory**

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**Tuesday AM, July 6, 2010**

**Room D**

Chaired by Hiroshi Shirai, Ioannis M. Besieris

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- 08:00 Complex Permittivity Estimation by Free Space Method Using Specular Reflected RCS  
*Masayuki Ishikawa (Chuo University, Japan); Hiroshi Shirai (Chuo University, Japan);*
- 08:20 Implications of an Inhomogeneous Lorenz Condition  
*Ioannis M. Besieris (Virginia Polytechnic Institute and State University, USA); Amr M. Shaarawi (The American University in Cairo, Egypt);*
- 08:40 Effective Parameters of Artificial Material Composed of Dielectric Particles  
*Arun Kumar Saha (Albany State University, USA); Matthew Hawthorn (Albany State University, USA);*
- 09:00 Franck-Hertz Experiment in Magnetic Field  
*Zi-Hua Weng (Xiamen University, China); Ying Weng (Xiamen University, China);*
- 09:20 Rough Space Travel  
*Karl Federico Kaspereck (CTE, Italy);*
- 09:40 Potential Orbital Debris Protection Using a Gradient Magnetic Field  
*Adom D. Giffin (Princeton University, USA); Mikhail N. Shneider (Princeton University, USA); Richard B. Miles (Princeton University, USA);*
- 10:00 **Coffee Break**

- 10:20 Coordinate Transformations with Variable Speed of Light  
*Zi-Hua Weng (Xiamen University, China);*
- 10:40 Radiometry, Wave Optics and Spatial Coherence  
*Arvind S. Marathay (University of Arizona, USA); John F. McCalmont (Wright-Patterson AFB, USA); David B. Pollock (University of Alabama, USA);*
- 11:00 Homogeneous Bianisotropic Medium, Dissipation and the Non-constancy of Speed of Light in Vacuum for Different Galilean Reference Systems  
*Namik Yener (Kocaeli University, Turkey);*
- 11:20 On the Symmetry Properties of Quantized Electromagnetic Fields in the Presence of a Dielectric Medium  
*Shahram Salehi (University of Isfahan, Iran); Fardin Kheirandish (University of Isfahan, Iran);*
- 11:40 Enhanced Gain Planar Inverted-F Antenna with Metamaterial Superstrate for UMTS Applications  
*Hussein Attia (University of Waterloo, Canada); Mohammed M. Bait-Suwailam (University of Waterloo, Canada); Omar M. Ramahi (University of Waterloo, Canada);*
- 09:20 Second Order Moments of Superpositions of Hermite-Laguerre-Gauss Modes  
*Alejandro Cámara (Universidad Complutense de Madrid, Spain); Tatiana Alieva (Universidad Complutense de Madrid, Spain);*
- 09:40 The Phase-space Interpretation of Self-imaging and the Phase Retrieval Problem  
*Markus E. Testorf (Thayer School of Engineering at Dartmouth College, USA);*
- 10:00 **Coffee Break**
- 10:20 Digital Holography in the Light of Phase Space  
*Bryan M. Hennelly (National University of Ireland, Ireland);*
- 10:40 Wigner Based Phase Space as a Tool to Analyze Super Resolved Imaging Configurations  
*Zeev Zalevsky (Bar-Ilan University, Israel);*
- 11:00 Tomographic Reconstruction of the Wigner Distribution of Non-separable Beams  
*Alejandro Cámara (Universidad Complutense de Madrid, Spain); Tatiana Alieva (Universidad Complutense de Madrid, Spain); J. A. Rodrigo (Instituto de Optica (CSIC), Imaging and Vision Department, Spain); M. L. Calvo (Universidad Complutense de Madrid, Spain);*
- 11:20 Tunable Phase Masks for Extended Depth of Field  
*Jorge Ojeda-Castañeda (University of Guanajuato, Mexico); Myrna M. Rodríguez (University of Guanajuato, México); Rafael Naranjo (University of Guanajuato, México);*

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**Session 2A5**  
**Phase-Space Optics**

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**Tuesday AM, July 6, 2010**

**Room E**

Organized by Jorge Ojeda-Castañeda

Chaired by Bryan M. Hennelly, Markus E. Testorf

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- 08:20 Phase Space Analysis of Complex Optical Systems and Optics Challenges for Next Generation Synchrotron X-ray Sources  
*Detlef-Matthias Smilgies (Cornell University, USA);*
- 08:40 Temporal Filtering in Phase-space  
*Cristina Margarita Gómez-Sarabia (University of Guanajuato, México); Pedro Andres (Universitat de València, Spain); Jorge Ojeda-Castañeda (University of Guanajuato, Mexico);*
- 09:00 Temporal Zone Plate by Linear Chirp Generator  
*Carlos Gomez-Reino (Universidade de Santiago de Compostela, Spain); Ana I. Gómez-Varela (Universidade de Santiago de Compostela, Spain); Carmen Bao Varela (Universidade de Santiago de Compostela, Spain); M. Teresa Flores-Arias (Universidade de Santiago de Compostela, Spain);*

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**Session 2A6**  
**Photonic Crystals and Metamaterials 1**

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**Tuesday AM, July 6, 2010**

**Room F**

Organized by Arthur R. McGurn

Chaired by Arthur R. McGurn

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- 08:00 Equivalent Circuit Models for Split-ring Resonator Arrays  
*Pinar Yasar-Orten (Middle East Technical University, Turkey); Evren Ekmekci (Middle East Technical University, Turkey); Gonul Turhan-Sayan (Middle East Technical University, Turkey);*

- 08:20 Effects of Substrate Parameters on the Resonance Frequency of Double-sided SRR Structures under Two Different Excitations  
*Evren Ekmekci (Middle East Technical University, Turkey); Richard D. Averitt (Boston University, USA); Gonul Turhan-Sayan (Middle East Technical University, Turkey);*
- 08:40 Transmission through Kerr Media Waveguide Barriers: Dispersive Properties  
*Arthur R. McGurn (Western Michigan University, USA);*
- 09:00 Light Transport in Disordered Metamaterials Made of Nanorods  
*Didier Felbacq (Université de Montpellier 2, France); Kevin Vynck (European Laboratory for Non-linear Spectroscopy, Italy); Brahim Guizal (Université de Montpellier 2, France);*
- 09:20 Photonic Crystal Fiber Analysis Using Cylindrical FDTD with Bloch Boundary Conditions  
*Adam Mock (Central Michigan University, USA); Paul Trader (Central Michigan University, USA);*
- 09:40 Electro-inductive Waves for Geometrically-induced Plasmon-like Waves  
*Miguel Navarro-Cia (Universidad Publica de Navarra, Spain); Miguel Beruete (Universidad Publica de Navarra, Spain); Spyros Agrafiotis (Imperial College London, UK); Francisco J. Falcone (Universidad Publica de Navarra, Spain); Mario Sorolla (Universidad Publica de Navarra, Spain); Stefan A. Maier (Imperial College London, UK);*
- 10:00 **Coffee Break**
- 10:20 Simultaneous Negative and Positive Refraction Depending on the Incident Polarization to a Stacked Metasurfaces Prism  
*Miguel Navarro-Cia (Universidad Publica de Navarra, Spain); Miguel Beruete (Universidad Publica de Navarra, Spain); Francisco J. Falcone (Universidad Publica de Navarra, Spain); Igor Campillo (CIC nanoGUNE Consolider, Spain); Mario Sorolla (Universidad Publica de Navarra, Spain);*
- 10:40 Modelling Double-heterostructure Cavities Using Perturbation Theory  
*Sahand Mahmoodian (University of Sydney, Australia); Kokou B. Dossou (University of Technology, Australia); Christopher G. Poulton (University of Technology, Australia); Ross C. McPhedran (University of Sydney, Australia); Lindsay C. Botten (University of Technology, Australia); C. Martijn de Sterke (University of Sydney, Australia);*
- 11:00 Study of Resonance Effects in Dielectric Magneto-optical Structures through Analysis of Quasiguided Eigenmodes  
*Dmitry Alexandrovich Bykov (Image Processing Systems Institute of the Russian Academy of Sciences, Russia); L. L. Doskolovich (Image Processing Systems Institute of the Russian Academy of Sciences, Russia); N. L. Kazansky (Image Processing Systems Institute of the Russian Academy of Sciences, Russia);*
- 11:20 Stacking of Meta-foils  
*Herbert O. Moser (National University of Singapore (NUS), Singapore); Linke Jian (National University of Singapore (NUS), Singapore); M. Bahou (National University of Singapore (NUS), Singapore); K. Banas (National University of Singapore (NUS), Singapore); A. Banas (National University of Singapore (NUS), Singapore); Wei Hua (National University of Singapore (NUS), Singapore); Hongsheng Chen (Zhejiang University, China); S. M. P. Kalaiselvi (National University of Singapore (NUS), Singapore); S. Virasawmy (National University of Singapore (NUS), Singapore); S. M. Maniam (National University of Singapore (NUS), Singapore); S. P. Heussler (National University of Singapore (NUS), Singapore); Xiangxiang Cheng (Zhejiang University, China); Bae-Ian Wu (Massachusetts Institute of Technology, USA);*
- 11:40 Observation of Maximum Entanglement of Excitons in Coupled Quantum Dots  
*Mahmoud Abdel-Aty (University of Bahrain, Kingdom of Bahrain);*

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**Session 2A7**
**Poster Session 5**


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**Tuesday AM, July 6, 2010**
**9:00 AM - 12:00 AM**
**Room G**


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- 1 Design of Power Amplifier in 0.13  $\mu\text{m}$  CMOS Technology at K-band  
*Se-Hwan Choi (Korea Electronics Technology Institute, Republic of Korea); Jin-Sup Kim (Korea Electronics Technology Institute, Republic of Korea); Kyu-Ho Park (Korea Electronics Technology Institute, Republic of Korea); Kyu-Bok Lee (Korea Electronics Technology Institute, Republic of Korea);*

- 2 A Ku-band CMOS VCO Using Colpitts Structure  
*Jin-Sup Kim (Korea Electronics Technology Institute, Korea); Se-Hwan Choi (Korea Electronics Technology Institute, Korea); Jae-Young Lee (Korea Electronics Technology Institute, Korea); Kyu-Ho Park (Korea Electronics Technology Institute, Korea);*
- 3 Cavity-backed Slot Array Antenna for Vehicular Radar Applications  
*Ho-Jun Lee (Korea Electronics Technology Institute, Korea); Jae-Young Lee (Korea Electronics Technology Institute, Korea); Jong-Kyu Kim (Korea Electronics Technology Institute, Korea); Hyoung-Seog Jin (LIG Nex1 Co., Ltd, South Korea);*
- 4 Energy Band of Spin Waves in Ferromagnetic Bilayers with bcc Structures  
*Xiaoxia Wu (Inner Mongolia University, China); Guohong Yun (Inner Mongolia Normal University, China); Xiaojuan Hou (Inner Mongolia University, China); Bai Narsu (Inner Mongolia Normal University, China);*
- 5 Design of the Index of Refraction in a Periodically Modulated Media to Minimize Radiative Loss  
*Braxton Osting (Columbia University, USA); Michael I. Weinstein (Columbia University, USA);*
- 6 Analysis Propagation Characteristics of the Surface Plasmon Polariton Trench Waveguides by Method of Lines  
*Tran Trong Minh (Researching Department of Furuno Electric Co., Japan); Kazuo Tanaka (Gifu University, Japan); Masahiro Tanaka (Gifu University, Japan);*
- 7 General Study on Coherent Beam Combining of Interferometric Fiber Laser Arrays  
*Jianqiu Cao (National University of Defense Technology, China); Qisheng Lu (National University of Defense Technology, China); Jing Hou (National University of Defense Technology, China); Xiaojun Xu (National University of Defense Technology, China);*
- 8 The Effect of Temperature on the Soliton Propagation in Photorefractive SBN Crystal in One Dimension  
*Alireza Keshavarz (Shiraz University of Technology, Iran); Farzin Emami (Shiraz University of Technology, Iran); Mohsen Hatami (Yazd University, Iran); Parviz Elahi (Shiraz University of Technology, Iran);*
- 9 Calculating Complex Propagation Constants of Finite-size Two Dimensional Photonic Crystal Waveguides  
*Yih-Peng Chiou (National Taiwan University, Taiwan); K.-H. Chi (National Taiwan University, Taiwan); F.-C. Huang (National Taiwan University, Taiwan);*
- 10 Frequency Characteristics of Specific Absorption Rates of Children for Whole-body Exposure from 10 MHz to 10 GHz  
*Tomoaki Nagaoka (National Institute of Information and Communications Technology, Japan); Soichi Watanabe (National Institute of Information and Communications Technology, Japan);*
- 11 Level Set Method in EIT Image Reconstructions  
*Jarmila Dědková (Brno University of Technology, Czech Republic); K. Ostanina (Brno University of Technology, Czech Republic); Jan Mikulka (Brno University of Technology, Czech Republic);*
- 12 An Effective Detection of Conductivity Changes in Biologic Tissue  
*Tomáš Kříž (Brno University of Technology, Czech Republic); Jarmila Dědková (Brno University of Technology, Czech Republic); Jan Mikulka (Brno University of Technology, Czech Republic);*
- 13 Monitoring of Diseases Progression by MR  
*Jan Mikulka (Brno University of Technology, Czech Republic);*
- 14 The Comparative Study of Magnetized Physiological Solution-induced and Hydrogen Peroxide-induced Stimulation Effect on Heart Muscle Contractility  
*Erna H. Dadasyan (UNESCO Chair-Life Sciences International Postgraduate Educational Center, Armenia); Sinerik Ayrapetyan (UNESCO Chair-Life Sciences International Postgraduate Educational Center, Armenia);*
- 15 Interaction of Doxorubicin with DNA Irradiated at Water Molecular Structure Oscillation Frequencies  
*Yurik S. Babayan (Yerevan State Medical University, Armenia); A. A. Tadevosyan (Yerevan State Med Univ, Armenia); S. V. Harutyunyan (Yerevan State Med University, Armenia);*
- 16 Photodynamic Therapy in the Dermatological Field and Enhanced Cutaneous Absorption of Photosensitizer  
*Makio Akimoto (Kanto Gakuin University, Japan); Kazuhisa Maeda (Tokyo University of Technology, Japan); Tokuya Omi (Queen's Square Medical Center, Japan); Tomonori Nishimura (Atom Giken Co., Ltd., Japan); Michio Miyakawa (Niigata University, Japan);*

- 17 Developments of Transdermal Transport System during Skin Iontophoresis and Electroporation  
*Tomonori Nishimura (Atom Giken Co., Ltd., Japan); Makio Akimoto (Kanto Gakuin University, Japan); Michio Miyazaki (Kanto Gakuin University, Japan); Mayumi Nomoto (Nomoto Mayumi Skincare Clinic, Japan); Michio Miyakawa (Niigata University, Japan);*
- 18 Comparing Effects of Extremely Low Frequency Electromagnetic Fields on the Biomass Weight of C3 and C4 Plants in Early Vegetative Growth  
*Azita Shabrangi (Tehran Tarbiat Moallem University, Iran); Ahmad Majd (Islamic Azad University, Tehran North Branch, Iran); Masoud Sheidai (Shahid Beheshti University, Iran); Mohammad Nabyouni (Tehran Tarbiat Moallem University, Iran); Davod Dorrnian (Islamic Azad University, Iran);*
- 19 Measurement of Complex Permittivity of Biological Tissues  
*Jaroslav Vorlicek (Czech Technical University, Czech Republic); Ladislav Oppl (Czech Technical University in Prague, Czech Republic); Jan Vrba (Czech Technical University in Prague, Czech Republic);*
- 20 Reduction of Four-Wave-Mixing in FDM Lightwave Transmission Systems by Asymmetric Repeated Unequally Spaced Frequency Allocations  
*Takuya Tamo (Ritsumeikan University, Japan); Takahiro Numai (Ritsumeikan University, Japan);*
- 14:00 3D Modeling of Novel Focused Source EM Survey versus the Standard CSEM  
*Sofia Davydycheva (3DEM Consulting, USA); Nikolai Ryhklinski (Institute of Innovative Methods of Geophysics, Russia);*
- 14:20 Interpolation and Decomposition into Upgoing and Downgoing Wavefields for Undersampled CSEM Data  
*Peter M. van den Berg (Delft University of Technology, The Netherlands); Aria Abubakar (Schlumberger-Doll Research, USA); Tarek M. Habashy (Schlumberger-Doll Research, USA);*
- 14:40 An Inversion Scheme for Anisotropic Resistivity  
*Bruce A. Hobbs (PGS-EM, UK);*
- 15:00 **Coffee Break**
- 15:20 Inversion of 3D Marine CSEM Data Using Seed-type Initial Models  
*Michael A. Frenkel (EMGS, USA);*
- 15:40 Simultaneous Joint Inversion of Seismic and Magnetotelluric Data for Complex Sub-salt Depth Imaging in Gulf of Mexico  
*Massimo Viriglio (WesternGeco, Italy); Michele De Stefano (WesternGeco, Italy); Simone Re (WesternGeco, Italy); Federico Golfrè Andreasi (WesternGeco, Italy); Fred F. C. Snyder (WesternGeco, Italy);*
- 16:00 Integrating Well Log, Seismic and CSEM Data for Reservoir Characterization  
*Lucy MacGregor (OHM Ltd., UK); David Andreis (OHM Ltd., UK);*
- 16:20 Joint Electromagnetic and Seismic Inversion Using Structural and Petrophysical Approach  
*Aria Abubakar (Schlumberger-Doll Research, USA); Tarek M. Habashy (Schlumberger-Doll Research, USA); Guozhong Gao (Schlumberger-Doll Research, USA);*
- 16:40 Crosswell Electromagnetic Inversion Constrained by the Fluid Flow Simulator  
*Lin Liang (Schlumberger, USA); Aria Abubakar (Schlumberger-Doll Research, USA); Tarek M. Habashy (Schlumberger-Doll Research, USA);*
- 17:00 Electromagnetic Imaging of Buried Objects Using a Decoupling-based Reconstruction Method  
*Aref Lakhal (University of Saarland, Germany);*

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**Session 2P1****Modeling and Inversion for Geophysical EM Applications**

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**Tuesday PM, July 6, 2010****Room A**

Organized by Aria Abubakar, Tarek M. Habashy

Chaired by Aria Abubakar, Tarek M. Habashy

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- 13:20 A Feasibility Study of Land CSEM Reservoir Monitoring: The Effect of the Airwave  
*Marwan Wirianto (Delft University of Technology, The Netherlands); William A. Mulder (Shell International Exploration and Production B.V., The Netherlands); Evert C. Slob (Delft University of Technology, The Netherlands);*
- 13:40 Rigorous Interpolation of Tangential Fields Near the Seabed for 3D CSEM Modeling  
*Daniel Shantsev (EMGS, Norway); Frank Maaø (Statoil, Norway); Friedrich Roth (EMGS ASA, Norway);*



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**Session 2P2**
**Electromagnetic Remote Sensing for Defense  
and Homeland Security**


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**Tuesday PM, July 6, 2010**
**Room B**

Organized by Andrew J. Terzuoli

 Chaired by Maokun Li
 

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- 13:20 Closed-form, Bistatic, 3D Scattering Solution for a Dihedral Corner Reflector  
*Julie Ann Jackson (Air Force Institute of Technology, USA);*
- 13:40 Experimental Demonstration of Photonic Band Gap Channel Drop Filters at Sub-Terahertz Frequencies  
*Dmitry Yu. Shchegolkov (Los Alamos National Laboratory, USA); L. M. Earley (Los Alamos National Laboratory, USA); Cynthia E. Heath (Los Alamos National Laboratory, USA); Evgenya I. Smirnova (Los Alamos National Laboratory, USA); B. D. Schultz (International Technology Center, USA);*
- 14:00 Sub-terahertz Radiometric Imaging System for Concealed Weapon Detection  
*Alexey A. Vertiy (TUBITAK-MRC, Turkey); Mustafa Tekbas (TUBITAK-MRC, Turkey); Ahmet Kizilhan (TUBITAK-MRC, Turkey); Sergey B. Panin (Radiophysics and Electronics of NASU, Ukraine); Sunullah Ozbek (TUBITAK-MRC, Turkey);*
- 14:20 MIMO Radar Concept for Detecting Human Beings through Walls in the Presence of Background Clutter  
*Patrick Millot (ONERA, France); B. Boudamouze (ONERA, France); T. Volpert (ONERA, France); Christian Pichot (ONERA, France);*
- 14:40 FMCW SAR Imaging of Body Worn Explosives from FDFD Modeled Scattered Field Data  
*Justin L. Fernandes (Northeastern University, USA); Richard Obermeier (Northeastern University, USA); José Angel Martínez-Lorenzo (Northeastern University, USA); Carey M. Rappaport (Northeastern University, USA);*
- 15:00 **Coffee Break**
- 15:20 Effect of Antennae Polarization Relative to Tunnel Orientation on Electromagnetic Wave Scattering Due to Underground Tunnels  
*Arvin Farid (Boise State University, USA);*

- 15:40 New Scheme for Radar Target Identification via Target's Internal Modes  
*Haythem Hussein Abdullah (Electronics Research Institute (ERI), Egypt); Khalid Fawzi Ahmed Hussein (Electronics Research Inst., Egypt); Mostafa El-Said (Cairo University, Egypt); Essam A. Hashish (Cairo University, Egypt);*
- 16:00 Time-Domain Wall Parameter Estimation and Mitigation for Through-the-Wall Radar Image Enhancement  
*Christopher Thajudeen (Villanova University, USA); Wenji Zhang (Villanova University, USA); Ahmad Hoorfar (Villanova University, USA);*
- 16:20 Through Wall Imaging Using the DORT Method  
*Matthieu Davy (Université Denis Diderot Paris 7, France); Thomas Lepetit (École Supérieure de Physique et de Chimie Industrielles de la Ville de Paris, France); Julien de Rosny (Université Denis Diderot Paris 7, France); Claire Prada (Université Denis Diderot Paris 7, France); Mathias Fink (Université Denis Diderot Paris 7, France);*
- 16:40 Inverse Scattering Problems in Modern Homeland Protection Systems  
*Michele D'Urso (SELEX Sistemi Integrati, Italy); Aniello Buonanno (SELEX Sistemi Integrati, Italy); Giancarlo Prisco (SELEX Sistemi Integrati, Italy); Alfonso Farina (SELEX Sistemi Integrati, Italy);*
- 17:00 Multi-temporal Hyperspectral Images Unmixing and Classification Based on 3D Signature Model and Matching  
*Imed Riadh Farah (ENSI, Tunisia); Selim Hemissi (ENSI, Tunisia); Karim Saheb Ettabaï (ENSI, Tunisia); Bassel Souleiman (Technopôle Brest-Iroise, France);*

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**Session 2P3**
**Microstrip, Printed Antennas and Phase  
Array**


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**Tuesday PM, July 6, 2010**
**Room C**

Organized by Hou Zhang

 Chaired by Jianguo Liu
 

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- 13:00 Aperture Coupled Multilayer Microstrip Power Divider  
*Sulaiman Lanre Taiwo (King Fahd University of Petroleum & Minerals (KFUPM), Saudi Arabia); Sharif Iqbal Mitu Sheikh (King Fahd University of Petroleum & Minerals (KFUPM), Saudi Arabia);*

- 13:20 A Telemetry Antenna System for Unmanned Air Vehicles  
*Mustafa Doğan (Sabanci University, Turkey); Fatih Ustuner (TUBITAK, UEKAE, Turkey);*
- 13:40 Defected Ground Structure for Coupling Reduction between Probe Fed Microstrip Antenna Elements  
*Carlos Vazquez Antuna (University of Oviedo, Spain); George Hotopan (Universidad de Oviedo, Spain); Samuel Ver Hoeye (University of Oviedo, Spain); Miguel Fernandez Garcia (University of Oviedo, Spain); Luis Fernando Herran Ontanon (Universidad de Oviedo, Spain); Fernando Las-Heras Andres (Universidad de Oviedo, Spain);*
- 14:00 A Modified Antipodal Vivaldi Antenna with Improved Bandwidth and Radiation Pattern  
*Jian Bai (University of Delaware, USA); Shouyuan Shi (University of Delaware, USA); Dennis W. Prather (University of Delaware, USA);*
- 14:20 Optimization of Aperture Coupled Microstrip Patch Antennas  
*Mustafa Doğan (TUBITAK-UEKAE, Turkey); G. K. Sendur (Sabanci University, Turkey); Fatih Ustuner (TUBITAK, UEKAE, Turkey);*
- 14:40 A Compact and Low Cost Elementary Radiating Cell for Satellite Broadcasting Automotive Receiving Arrays  
*Roberto Torres-Sánchez (Ecole Polytechnique Fédérale de Lausanne (EPFL), Switzerland); Juan R. Mosig (École Polytechnique Fédérale de Lausanne, Switzerland); S. Vaccaro (Ecole Polytechnique Fédérale de Lausanne (EPFL), Switzerland); Daniel Llorens Del Rio (JAST Antenna Syst, Switzerland);*
- 15:00 **Coffee Break**
- 15:20 Analysis and Simulation of Different Bent Dipole Circularly Polarized Antenna Array Situated Close to Ground Plane  
*Saeed M. Khan (Kansas State University, USA);*
- 15:40 Tapered-line Power Divider  
*Boon Kuan Chung (Universiti Tunku Abdul Rahman, Malaysia); Chun Tong Chiang (Computer Simulation Technology (CST), Malaysia);*
- 16:00 A Novel Feeding Scheme for Microstrip Patch Antenna (MPA) Array for Millimeter-wave Band Applications  
*Wael M. Abdel Wahab (University of Waterloo, Canada); Safieddin Safavi-Naeini (University of Waterloo, Canada); Dan Busuic (University of Waterloo, Canada);*
- 16:20 Use of Attachment Functions in the Moment Method for Analysis of Planar Microstrip Structures  
*Oueslati Nejla (Engineer School of Tunis, Tunisia); Taoufik Aguilu (Ecole Nationale d'ingénieurs de Tunis, Tunisia);*
- 16:40 Microstrip Antenna for Wideband Applications with Sandwich Substrate  
*Malay Ranjan Tripathy (Jind Institute of Engineering and Technology (JIET), India); Pawan Kumar (SDITM, India); H. P. Sinha (M. M. University, India); Rachid Talhi (University of Tours and CNRS, France);*
- 17:00 Effect of Distance between Feeding Point and Ground Point of PIFA Antenna on Its Resonant Frequency and  $S$  Parameter  
*Jasem Jamali (Islamic Azad University, Iran); Ramezan Ali Sadeghzadeh Sheikhan Gofsheh (Khaje Nasir Toosi University of Technology, Iran); Mohammad Naser-Moghadasi (Islamic Azad University, Iran);*
- 17:20 GA Optimization for Compact Broadband PIFA Application  
*Wen Pan (Southwest Jiaotong University, China); Quanyuan Feng (Southwest Jiaotong University, China);*

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**Session 2P4**
**Computational Electromagnetics**


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**Tuesday PM, July 6, 2010**
**Room D**

 Chaired by Stepan Lucyszyn, Kausik Chatterjee
 

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- 13:20 Numerical Computation of Capacitance of Oblate Spheroidal Conducting Shells  
*Omonowo D. Momoh (Prairie View A & M University, USA); Matthew N. O. Sadiku (Prairie View A & M University, USA); Cajetan M. Akujobi (Prairie View A & M University, USA);*
- 13:40 Guided and Leaky Modes of Planar Waveguides: Computation via High Order Finite Elements and Iterative Methods  
*David Stowell (Southern Methodist University, USA); Johannes Tausch (Southern Methodist University, USA);*
- 14:00 A Closed Form Solution for Longitudinally Inhomogeneous Waveguides  
*Mohammad Khalaj-Amirhosseini (Iran University of Science and Technology, Iran);*

- 14:20 Modal Analysis of Lamellar Gratings: A New Formulation Based on the Moment Method with Subsectional Basis and Adaptive Spatial Resolution  
*Gérard Granet (Clermont Uniniversités, France); Ana Maria Armeanu (CNRS UMR 6602, France); Kofi Edee (Clermont Uniniversités, France); Lala Bakonirina Andriamanapisoa (CNRS UMR 6602, France); Karyl Raniriharinosy (Université de Fianarantsoa, Madagascar);*
- 14:40 A Green's Function Monte Carlo Algorithm for the Estimation of Derivatives of the Solutions of Partial Differential Equations  
*Kausik Chatterjee (The Cooper Union for the Advancement of Science and Art, USA); Christopher Alesandro (The Cooper Union for the Advancement of Science and Art, USA); Christopher Mitchell (The Cooper Union for the Advancement of Science and Art, USA);*
- 15:00 **Coffee Break**
- 15:20 Comparison between the Classical Integral Equations and a Well Conditioned Integral Equation  
*D. Levaoux (ONERA, France); Florence Millot (CERFACS, France); S. Pernet (CERFACS, France);*
- 15:40 Analysis of Scattering from Semi-infinitely Layered Periodic Array Using Equivalence Principle and Connection Scheme  
*Jiming Song (Iowa State University, USA); Fu-Gang Hu (Iowa State University, USA);*
- 16:00 Analysis of Homogenization Techniques for Improving Electromagnetic Scattering Computation by Rough Surfaces  
*Simon Tournier (ONERA, France); J.-R. Poirier (LAME-ENSEEIH-INT, France); Pierre Borderies (Office National d'Etudes et de Recherches Aérospatiales (ONERA), France);*
- 16:20 Simulating Dispersive Left-handed Media with the TLM Method  
*Cédric Blanchard (University of Montpellier 2, France); Didier Felbacq (Université de Montpellier 2, France); Brahim Guizal (Université de Montpellier 2, France); Jorge Andrés Porti (University of Granada, Spain); Rachid Talhi (University of Tours and CNRS, France);*
- 16:40 Characterising THz Shielding Effectiveness Using the Engineering Approach  
*Stepan Lucyszyn (Imperial College London, UK); Yun Zhou (Imperial College London, UK);*
- 17:00 Scattering of Electromagnetic Waves by Inhomogeneous Metallic Gratings with Perfectly Conducting Strips  
*Tsuneki Yamasaki (Nihon University, Japan); Ryosuke Ozaki (Nihon University, Japan); Takashi Hinata (Nihon University, Japan);*
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- Session 2P5**  
**Theory and Modelling of Active Photonic Materials**
- 
- Tuesday PM, July 6, 2010**  
**Room E**  
Organized by Stavroula Foteinopoulou  
Chaired by Stavroula Foteinopoulou
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- 13:00 Gain and Surface Plasmons to Improve Metal-Dielectric Multilayered Lenses  
*Boris Gralak (CNRS, France); Gerard Tayeb (CNRS, Institut Fresnel, France); Stefan Enoch (Institut Fresnel, UMR CNRS 6133, France); M. Kadic (CNRS, France); J. Zhang (CNRS, France);*
- 13:20 Theory and Modeling of Surface Plasmon Gain in Planar Metallic Structures  
*Israel De Leon (University of Ottawa, Canada); Pierre Berini (University of Ottawa, Canada);*
- 13:40 Tremendous Enhancement of Active Photonic Phenomena via High-order Dispersionless Bands in Layered Plasmonic-dielectric Systems  
*Aristeidis Karalis (Massachusetts Institute of Technology, USA); John D. Joannopoulos (Massachusetts Institute of Technology, USA); Marin Soljacic (Massachusetts Institute of Technology, USA);*
- 14:00 Dispersion and Diffraction Management in Active Subwavelength Waveguides  
*Viktor A. Podolskiy (Oregon State University, USA); Alexander A. Goyyadinov (Oregon State University, USA);*
- 14:20 Compensation of Loss and Stimulated Emission of Surface Plasmons  
*Guohua Zhu (Norfolk State University, USA); M. A. Noginov (Norfolk State University, USA);*
- 14:40 Computational Modeling of Linear and Nonlinear Optical Properties of Plasmonic Nanostructures  
*Nicolae C. Panoiu (University College London, UK); Lina Cao (Columbia University, USA); Claudiu C. Biris (University College London, UK); Fangwei Ye (Hong Kong Baptist University, China); Ryan M. Roth (Columbia University, USA); Richard M. Osgood, Jr. (Columbia University, USA);*

- 15:00 **Coffee Break**
- 15:20 **Nanoscale Nonlinear Photonics**  
*Concita Sibilia (Università di Roma, La Sapienza, Italy); Marco Centini (Università di Roma, La Sapienza, Italy); A. Benedetti (Università di Roma, La Sapienza, Italy);*
- 15:40 **Electromagnetic Wave Propagation in Transition Metamaterials**  
*Natalia M. Litchinitser (University at Buffalo, The State University of New York, USA); Irene Mozjerin (University at Buffalo, The State University of New York, USA); Tolanya Gibson (University at Buffalo, The State University of New York, USA);*
- 16:00 **Parametric Control of Metamaterial Properties by Imbedded Resonant Materials**  
*S. Anantha Ramakrishna (Indian Institute of Technology Kanpur, India); S. Chakrabarti (Indian Institute of Technology Kanpur, India); Harshawardhan Wanare (Indian Institute of Technology Kanpur, India);*
- 16:20 **Carbon Nanotubes as Novel Photonic Materials**  
*Krzysztof Kempa (Boston College, USA);*
- 16:40 **Electromagnetic Metamaterials Mimic Celestial Phenomenon in the Lab**  
*Dentcho A. Genov (Louisiana Tech. University, USA);*
- 17:00 **Thermal Radiation in Finite Photonic Crystals**  
*Marian Florescu (Princeton University, USA); Christian Schuller (Karlsruhe Institute of Technology, Germany); Christian Wolff (Karlsruhe Institute of Technology, Germany); Kurt Busch (Karlsruhe Institute of Technology, Germany);*
- 17:20 **Modeling Photonic Crystal Microcavity Lasers**  
*John O'Brien (University of Southern California, USA); Adam Mock (Central Michigan University, USA); Ling Lu (University of Southern California, USA);*
- 17:40 **Stochastic Properties of the Thermal-radiation Field Emitted by Arrays of Nanoparticles**  
*Vassilios Yannopoulos (University of Patras, Greece); Nikolay V. Vitanov (Sofia University, Bulgaria);*
- 13:00 **Spatial Perturbation for Domain Wall Width in Different Ferroelectrics**  
*A. Bandyopadhyay (WBUT, India); A. Sengupta (WBUT, India); K. Choudhary (WBUT, India); Asis Kumar Bandyopadhyay (WBUT, India); P. C. Ray (GCE & LT, India);*
- 13:20 **Analysis of Linear and Non-linear Modes in Lithium Niobate Ferroelectrics**  
*K. Choudhary (WBUT, India); Asis Kumar Bandyopadhyay (WBUT, India); P. C. Ray (GCE & LT, India); Arthur R. McGurn (Western Michigan University, USA);*
- 13:40 **Ultimate Fast Optical Switching of Photonic Microcavities**  
*Georgios Ctistis (University of Twente, The Netherlands); Alex Hartsuiker (FOM Institute for Atomic and Molecular Physics (AMOLF), The Netherlands); Maela Bazin (CEA/INAC/SP2M, France); Julien Claudon (CEA/INAC/SP2M, France); Jean-Michel Gérard (CEA/INAC/SP2M, France); Willem L. Vos (University of Twente, The Netherlands);*
- 14:00 **Ab Initio Description of Spatiotemporal Dynamics of Multi-level Atoms Resonantly Coupled to Plasmonic Materials**  
*Maksim Sukharev (Arizona State University, USA);*
- 14:20 **Combined Direct Write Multiphoton Lithography and Proximity Nanopatterning for High throughput Writing of Non-periodic Structures with Periodic Sub-elements**  
*Jonathan P. Singer (Massachusetts Institute of Technology, USA); Jae-Hwang Lee (Massachusetts Institute of Technology, USA); Steven E. Kooi (Massachusetts Institute of Technology, USA); Edwin L. Thomas (Massachusetts Institute of Technology, USA);*
- 14:40 **Geometric Resonance-induced Gap in the Transmission Spectrum of a Periodic Waveguide**  
*Victor A. Pogrebnyak (State University of New York at Buffalo, USA); James J. Whalen (State University of New York at Buffalo, USA);*

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**Session 2P6**
**Photonic Crystals and Metamaterials 2**


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**Tuesday PM, July 6, 2010**
**Room F**

Organized by Arthur R. McGurn

 Chaired by Arthur R. McGurn
 

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**15:00 Coffee Break**

- 15:20 **New Classes of Non-crystalline Photonic Band Gap Materials**  
*Marian Florescu (Princeton University, USA); Salvatore Torquato (Princeton University, USA); Paul J. Steinhardt (Princeton University, USA);*

- 15:40 Dielectric Resonators for Negative Index Dielectric Metamaterials  
*Thomas Lepetit (École Supérieure de Physique et de Chimie Industrielles de la Ville de Paris, France); E. Akmansoy (Universita Paris-sud, France); Jean-Pierre Ganne (Thales Research and Technology, France);*
- 16:00 Integrated Magnetophotonic Circulators Operating in Uniform External Magnetic Field  
*Wojciech Smigaj (Aix Marseille University, France); Javier Romero-Vivas (Aix-Marseille University, France); Sebastien Guenneau (Aix Marseille University, France); Boris Gralak (CNRS, Aix-Marseille University, France); Liubov Magdenk (CNRS, Université Paris-Sud, France); Beatrice Dagens (CNRS, Université Paris-Sud, France); Mathias Vanwollegem (Université Paris-Sud, France);*
- 16:20 Novel Design of 3D Metamaterial  
*Isaac Ehrenberg (Massachusetts Institute of Technology, USA); Bae-Ian Wu (Massachusetts Institute of Technology, USA);*
- 16:40 Subwavelength Imaging with a Dielectric Magnifier  
*Baile Zhang (Massachusetts Institute of Technology, USA); George Barbastathis (Massachusetts Institute of Technology, USA);*
- 3 Novel Composite Non Reciprocal Right/Left-handed Line Made from Ferrite Material  
*F. Boukchiche (Saint-Etienne University, France); Tao Zhou (INSA-LYON, France); Martine Le Berre (Université de Lyon, France); Didier Vincent (Saint-Etienne University, France); B. Payet-Gervy (Saint-Etienne University, France); F. Calmon (INSA-LYON, France);*
- 4 A New Profile for Metal Post Circular Waveguide Polarizer  
*Seyed Hosein Mohseni Armaki (Iran University of Science and Technology (IUST), Iran); Farrokh Hojjat Kashani (Iran University of Science and Technology (IUST), Iran); Mohsen Fallah (Iran University of Science and Technology (IUST), Iran);*
- 5 Inverted Pendulum System Identification and Control Based on Fuzzy Neural Network  
*Sheng Qiang (Harbin Institute of Technology, China); Yuhua Zhang (Harbin Normal University, China); Yun-Dong Zhang (Harbin Institute of Technology, China);*
- 6 A Parallel Adaptively Modified Characteristic Basis Function Method for Analyzing Electromagnetic Scattering Problems  
*Fei Dai (The State Key-Lab for Electromagnetic Characters of Environment, China); Zichang Liang (The State Key-Lab for Electromagnetic Characters of Environment, China); Hui Yue (The State Key-Lab for Electromagnetic Characters of Environment, China);*

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**Session 2P7**  
**Poster Session 6**

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**Tuesday PM, July 6, 2010**  
**14:00 PM - 17:00 PM**  
**Room G**

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- 1 Sensitivity Analysis of Pulse Broadening in Optical Fibres — A Stochastic Approach  
*Farzin Emami (Shiraz University of Technology, Iran);*
- 2 Stress and Strain Sensing with Multimode POF Bragg Gratings  
*Yanhua Luo (University of Science and Technology of China, China); Binbin Yan (University of New South Wales, Australia); Mo Li (University of New South Wales, Australia); Xiaolei Zhang (University of New South Wales, Australia); Qijin Zhang (University of Science and Technology of China, China); Gang-Ding Peng (The University of New South Wales, Australia);*
- 7 Unwanted Modes Caused by Asymmetrical Structures in BIT Line Resonator at Millimeter-wave Frequencies  
*Futoshi Kuroki (Kure National College of Technology, Japan); Hiroyuki Kawagashira (Kure National College of Technology, Japan); Ryo-Ji Tamaru (Kure National College of Technology, Japan);*
- 8 Connection between Microstrip Circuits in Transmitter and Receiver of VSAT System  
*Futoshi Kuroki (Kure National College of Technology, Japan); Kosei Nishimura (Kure National College of Technology, Japan);*
- 9 Numerical Analysis of Q-factors in Millimeter-wave Oscillators  
*Futoshi Kuroki (Kure National College of Technology, Japan); Shimpei Takeda (Kure National College of Technology, Japan); Takashi Ohira (Toyohashi University of Technology, Japan);*

- 10 Generation of Ultrashort Pulses at 850 nm in a Newly Designed Photonic Crystal Fiber  
*K. Senthilnathan (National Institute of Technology, India); R. Vasantha Jayakantha Raja (Pondicherry University, India); K. Porsezian (Pondicherry University, India); Samuel Olupitan (University of Aberdeen, UK); Kaliyaperumal Nakkeeran (University of Aberdeen, UK);*
- 11 Research on the Goos-Hanchen Shift in the Chiral Negative Refraction Medium  
*Bin Liu (Ningbo University, China); Zhi-Ping Wan (Zhejiang Industry Polytechnic College, China);*
- 12 A Metallo-dielectric Hybrid Three-dimensional Photonic Crystal with Optical Gain  
*Jiafang Li (Institute of Physics, Chinese Academy of Sciences, China); Jin-Xin Fu (Institute of Physics, Chinese Academy of Sciences, China); Fei Qin (Institute of Physics, Chinese Academy of Sciences, China); Zhi-Yuan Li (Institute of Physics, Chinese Academy of Sciences, China);*
- 13 A Simple Data Pre-distortion Technique for Satellite Communication: Design and Implementation on Blackfin DSP  
*Osama A. Elsayed (National Authority of Remote Sensing and Space Science (NARSS), Egypt);*
- 14 Attitude Determination for Unmanned Air Vehicle through Image Registration  
*Osama Abdelrehim Elsayed (National Authority of Remote Sensing and Space Science (NARSS), Egypt);*
- 15 Medical Image Registration for MRI Images: Design and Implementation on DSP Blackfin Board  
*Osama Abdelrehim Elsayed (National Authority of Remote Sensing and Space Science (NARSS), Egypt);*
- 16 Cooperative Space-time Coding for Relay-based MIMO-OFDM Wireless Systems  
*Ibrahim Y. Abualhaol (Khalifa University, United Arab Emirates); Alaeddin S. Abu-Abed (University of Central Oklahoma, USA);*
- 17 The Assessment of Radiofrequency and Microwave Radiation near Mobile Communication Towers in Malaysia  
*Nurul Azhaniah Azizan (University of Malaya, Malaysia); Roha Binti Tukimin (University of Malaya, Malaysia); Wan Nor Liza Wan Mahadi (University of Malaya, Malaysia);*
- 18 Radiofrequency and Microwave Assessment of a Mobile Telephone Base Station (MTBS) in Kuala Lumpur  
*Nurul Azhaniah Azizan (University of Malaya, Malaysia); Wan Nor Liza Wan Mahadi (University of Malaya, Malaysia); Roha Binti Tukimin (University of Malaya, Malaysia);*
- 19 Exposure Assessment of EMF at 275 kV Transmission Lines: A Study at Residential Areas in Malaysia  
*Roha Binti Tukimin (University of Malaya, Malaysia); Wan Nor Liza Wan Mahadi (University of Malaya, Malaysia); Nurul Azhaniah Azizan (University of Malaya, Malaysia);*
- 20 DC Field Sensors — Unusual Approach  
*Uri Suissa (Sami Shamoon College of Engineering, Israel);*

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**Session 3A1**
**Stochastic versus Deterministic Geophysical Inversions**


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**Wednesday AM, July 7, 2010**
**Room A**

Organized by Randall Mackie

 Chaired by Randall Mackie
 

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- 08:20 Large-scale 3D Iterative Migration of Marine Controlled-source Electromagnetic Data with Focusing Regularization  
*Michael Semenovich Zhdanov (University of Utah, USA); Martin Čuma (University of Utah, USA); Glenn Wilson (University of Utah, USA);*
- 08:40 Efficient Nonlinear Inverse Solution Uncertainty Estimation via Covariance-free Model Reduction and Sparse Posterior Sampling  
*Michael J. Tompkins (Schlumberger-EMI Technology Center, USA); Juan Fernandez-Martinez (University of California Berkeley, USA);*
- 09:00 Geophysical Inversion for Non-smooth Models  
*Randall Mackie (WesternGeco, USA); William Rodi (Massachusetts Institute of Technology, USA);*
- 09:20 Geophysical Inversion with Geostatistical Regularization  
*William Rodi (Massachusetts Institute of Technology, USA); Randall Mackie (WesternGeco, USA);*
- 09:40 Using Sequential Inversion Schemes with Increasing Complexity to Tackle the Controlled-source Electromagnetic Imaging Challenge  
*Juergen J. Zach (EMGS ASA, Norway);*
- 10:00 **Coffee Break**
- 10:20 Stochastic Joint Inversion of 2D Seismic and Seismo-electric Signals  
*André Revil (Colorado School of Mines, USA);*

- 10:40 Frequentist and Bayesian Experimental Design  
*Eldad Haber (University of British Columbia, Canada); Lior Horesh (IBM TJ Watson Research Center, USA);*
- 11:00 A Hybrid Stochastic-deterministic Approach for Producing Statistically Accurate Inverse Solutions and Corresponding Uncertainty  
*Timothy C. Johnson (Idaho National Laboratory, USA); Roelof J. Versteeg (Idaho National Laboratory, USA);*

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**Session 3A2**  
**Radar Target Detection**

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**Wednesday AM, July 7, 2010**

**Room B**

Organized by Hean Teik Chuah, Boon Kuan Chung

Chaired by Boon Kuan Chung

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- 08:20 Analytical and Numerical Studies of Sea Surface Doppler  
*Guangdong Pan (Schlumberger-Doll Research Center, USA); Joel T. Johnson (The Ohio State University, USA);*
- 08:40 A Chaos Based Waveform Approach to Radar Target Identification  
*Frederic J. Rachford (Naval Research Laboratory, USA); Thomas L. Carroll (US Naval Research Lab, USA);*
- 09:00 Influence of Noise on Subwavelength Imaging of Two Close Scatterers Using Time Reversal Method: Theory and Experiments  
*Mathieu Davy (Université Denis Diderot Paris 7, France); Jean-G. Minonzio (UPMC Univ. Paris 06, France); Julien de Rosny (Université Denis Diderot Paris 7, France); Claire Prada (Université Denis Diderot Paris 7, France); Mathias Fink (Université Denis Diderot Paris 7, France);*
- 09:20 A Quantitative Physics-based Study of Variability in Target Detection Due to Seasonal and Temporal Variation in Clutter Effects — Selected Case Studies  
*Jonathan W. Bredow (The University of Texas at Arlington, USA);*
- 09:40 Using Chaos to Detect IIR and FIR Filters  
*Thomas L. Carroll (US Naval Research Lab, USA);*
- 10:00 **Coffee Break**

- 10:20 Development of Polarimetric Ground Based-SAR System with Compact VNA and Vivaldi Antenna Array  
*Masayoshi Matsumoto (Tohoku University, Japan); Motoyuki Sato (Tohoku University, Japan);*
- 10:40 Full Polarimetric Calibration of Ground Based-SAR System with Thin Wire  
*Masayoshi Matsumoto (Tohoku University, Japan); Motoyuki Sato (Tohoku University, Japan);*
- 11:00 A New UAV C-SAR for Environmental Monitoring  
*Voon Chet Koo (Multimedia University, Malaysia); Yee Kit Chan (Multimedia University, Malaysia); Tien Sze Lim (Multimedia University, Malaysia); Ming Yam Chua (Multimedia University, Malaysia); C. C. Thum (Multimedia University, Malaysia); Harita Jamil (Malaysian Remote Sensing Agency, Malaysia); Zahid Ahmad (Malaysian Remote Sensing Agency, Malaysia); Safiah Yusof (Malaysian Remote Sensing Agency, Malaysia); Khairul Annuar (Malaysian Remote Sensing Agency, Malaysia); Mohamad Jamil (Malaysian Remote Sensing Agency, Malaysia);*

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**Session 3A3**  
**Antennas and Array: Theory and Design 2**

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**Wednesday AM, July 7, 2010**

**Room C**

Chaired by Pawel Kabacik, Sharif Iqbal Mitu Sheikh

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- 08:00 Input Characteristics of Coated Thin Wire Helix Antenna  
*S. Adeniyi Adekola (University of Lagos, Nigeria); A. Ike Mowete (University of Lagos, Nigeria); Ade Ogunsola (Parsons Group International, UK); A. Ayorinde (University of Lagos, Nigeria);*
- 08:20 Time Domain Analysis of Vivaldi TSA Using a Cubic Spline Taper Profile  
*Khabat Ebnabbasi (Northeastern University, USA); Carey M. Rappaport (Northeastern University, USA);*
- 08:40 Design of Small Monopole Antennas Using Non-Foster Matching  
*Soon-Cheol Kong (HyPerComp, INC., USA); Ramakanth Munipalli (HyPerComp, INC., USA); Vijaya Shankar (HyPerComp, INC., USA);*

- 09:00 Aperture Coupled Phased Array with Novel Phase Shifter  
*Sharif Iqbal Mitu Sheikh (King Fahd University of Petroleum & Minerals (KFUPM), Saudi Arabia); S. M. Al-Shahrani (King Fahd University of Petroleum & Minerals, Saudi Arabia); U. Johar (King Fahd University of Petroleum & Minerals, Saudi Arabia); Sulaiman L. Taiwo (King Fahd University of Petroleum & Minerals (KFUPM), Saudi Arabia);*
- 09:20 Antenna Design for a Portable RFID Reader  
*Manoel Vitorio Barbin (Fletronics Institute of Technology, Brazil); Silvio Ernesto Barbin (University of São Paulo, Brazil);*
- 09:40 Fractal Antenna Analysis in Frequency and Time Domain  
*Baso Maruddani (State University of Jakarta, Indonesia); Joko Suryana (Bandung Institute of Technology, Indonesia); Tommi Hariyadi (Indonesia University of Education, Indonesia);*
- 10:00 **Coffee Break**
- 10:20 Characterization of Microwave Thin Radar Absorber Composed of Hexagonal Patch Array  
*Levy Olivia (Institut Teknologi Bandung, Indonesia); Frida Kurniasih (Institut Teknologi Bandung, Indonesia); Achmad Munir (Bandung Institute of Technology, Indonesia);*
- 10:40 Microstrip Array Antenna with New 2D-Electromagnetic Band Gap Structure Shapes to Reduce Harmonics and Mutual Coupling  
*Dalia Mohammed Nashaat Elsheakh (Hawaii Center for Advanced Communication, USA); Magdy F. Iskander (Hawaii Center for Advanced Communication, USA); Esmat Abdel-Fattah Abdallah (Electronics Research Institute, Egypt); Hala A. Elsadek (Electronics Research Institute, Egypt); Hadia M. Elhenawy (Ain Shams University, Egypt);*
- 11:00 Integrated Design of Multiple Antennas for WiFi/Bluetooth/GPS Mobile Communication  
*Dong Wang (Research in Motion Limited, Canada); Qinjiang Rao (University of Quebec, Canada);*
- 11:20 Increasing Integration in Composite Patch Antenna Arrays for Dual-band and Dual-polarized Uses  
*Monika Hornik (Wroclaw University of Technology, Poland); Pawel Kabacik (Wroclaw University of Technology, Poland);*
- 11:40 Novel MEMS Dipole/Monopole Antenna for Wireless Systems Operating at 77 GHz  
*Ezzeldin A. Soliman (King AbdulAziz University, College of Engineering, Saudi Arabia); Sherif Sedky (The American University in Cairo, Egypt); M. O. Sallam (The American University in Cairo, Egypt); S. Hassan (The American University in Cairo, Egypt); O. El Katteb (The American University in Cairo, Egypt); A. K. S. Abdel Aziz (The American University in Cairo, Egypt); M. Refaat (The American University in Cairo, Egypt);*
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- Session 3A4**  
**Microelectronic Packaging**
- 
- Wednesday AM, July 7, 2010**  
**Room D**  
Organized by Henning Braunsch, Kaladhar Radhakrishnan  
Chaired by Henning Braunsch
- 
- 08:20 Fast Electromagnetic Modeling of 3D Interconnects on Chip-package-board  
*Boping Wu (University of Washington in Seattle, USA); Xin Chang (University of Washington in Seattle, USA); Leung Tsang (University of Washington in Seattle, USA); Tingting Mo (Shanghai Jiao Tong University, China);*
- 08:40 An  $\mathcal{H}$ -LU Based Direct Finite Element Solver Accelerated by Nested Dissection for Large-scale Modeling of ICs and Packages  
*Hairin Liu (Purdue University, USA); Dan Jiao (Purdue University, USA);*
- 09:00 Application of Two Mixed Potential Integral Equations to Electromagnetic-circuit Simulation of Three-dimensional Interconnects in Layered Media  
*Nur Kurt-Karsilayan (Texas A&M University and Mentor Graphics Corporation, USA); Krzysztof A. Michalski (Texas A&M University, USA);*
- 09:20 Discontinuous Galerkin Time Domain Method for Multiscale Microelectronic Packaging  
*Qing Huo Liu (Duke University, USA); Jiefu Chen (Duke University, USA); Tian Xiao (Wave Computation Technologies, Inc., USA); Joon-Ho Lee (Wave Computation Technologies, Inc., USA); Mengqing Yuan (Duke University, USA);*



- 09:40 A Novel Technique for Approximation of Summation with Corrected Integral (ASCI) to Accelerate the Spectral Domain Approach for Shielded Microstrip Lines  
*Jiming Song (Iowa State University, USA); Sidharath Jain (Iowa State University, USA);*
- 10:00 **Coffee Break**
- 10:20 Low Noise and High Current ASIC Package Power Delivery System Design and Validation  
*Antonio Ciccomancini Scogna (CST of America, USA); Jianmin Zhang (CISCO Systems, Inc, USA); Qinghua Bill Chen (Cisco Systems, USA); Kelvin Qiu (Cisco Systems, USA);*
- 10:40 Design of an In-line CPW-stripline Transition without the Use of Signal Vias  
*Lionelle F. Wells (University of Arizona, USA); Kathleen L. Melde (University of Arizona, USA);*
- 11:00 Statistical Analysis of the Return Loss Performance of a Microprocessor Package Vertical Interconnect  
*Arun V. Sathanur (University of Washington, USA); Vikram Jandhyala (University of Washington, USA); Henning Braunsch (Intel Corporation, USA);*
- 11:20 Modeling of Electromagnetic Wave Propagation in Printed Circuit Board Transmission Lines with Rough Conductors  
*Marina Y. Koledintseva (Missouri University of Science and Technology, USA); Amendra Koul (Missouri University of Science and Technology, USA); James L. Drewniak (Missouri University of Science and Technology, USA); M. Wang (University of Houston, USA); Rui Qiang (University of Houston, USA); Ji Chen (The University of Houston, USA);*
- 11:40 Metallic Rough Surface Effect on Signal Integrity of High-speed Interconnect by Small Perturbation Method in 3D Waveguide Structure  
*Ruihua Ding (University of Washington, USA); Leung Tsang (University of Washington in Seattle, USA); Henning Braunsch (Intel Corporation, USA);*
- 08:20 Spectral Shift of an Electromagnetic Gaussian Schell-model Beam  
*Shijun Zhu (Soochow University, China); Yangjian Cai (Soochow University, China);*
- 08:40 Generation of Hollow Beam and Vortex Beams by Multimode Fibers  
*Xuanhui Lu (Zhejiang University, China); Kaikai Huang (Zhejiang University, China); Yunfeng Jiang (Zhejiang University, China);*
- 09:00 A Fiber Optic Evanescent Wave Sensor for Measuring Refractive Index Change of Liquids  
*Chenghua Sui (Zhejiang University of Technology, China); Pinghui Wu (Zhejiang University of Technology, China); Gaoyao Wei (Zhejiang University of Technology, China);*
- 09:20 Lorentz and Lorentz-gauss Beams in Uniaxial Crystals  
*Chengliang Zhao (Soochow University, China); Yangjian Cai (Soochow University, China);*
- 09:40 Wireless Fiber Laser Sensor Combining Photonic Generation Beat Frequency Demodulation Technology  
*Shengchun Liu (Heilongjiang University, China); Zuowei Yin (Nanjing University, China); Liang Gao (Nanjing University, China); Liang Zhang (Nanjing University, China); Xiangfei Chen (Nanjing University, China);*
- 10:00 **Coffee Break**
- 10:20 Ultrasonic Wave Detection in Atmospheric Pressure Plasma Using Fraunhofer Diffraction Effect  
*Toshiyuki Nakamiya (Tokai University, Japan); Fumiaki Mitsugi (Kumamoto University, Japan); Shota Suyama (Kumamoto University, Japan); Tomoaki Ikegami (Kumamoto University, Japan); Yoshito Sonoda (Tokai University, Japan); Yoichiro Iwasaki (Tokai University, Japan); Ryoichi Tsuda (Tokai University, Japan);*
- 10:40 Partially Coherent Standard and Elegant High-order Beams in Turbulent Atmosphere  
*Fei Wang (Soochow University, China); Yangjian Cai (Soochow University, China);*
- 11:00 The Study of the Radiation Force Caused by Different Laser Beams  
*Xuanhui Lu (Zhejiang University, China); Kaikai Huang (Zhejiang University, China); Yuna Liu (Zhejiang University, China); Yunfeng Jiang (Zhejiang University, China);*

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**Session 3A5**
**Generation, Propagation and Applications for Special Laser Beams**


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**Wednesday AM, July 7, 2010**
**Room E**

Organized by Xuanhui Lu

 Chaired by Xuanhui Lu
 

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- 11:20 Influence of Misalignment Spatial Filter on the Beam Quality in High Power Laser System  
*Yan-Qi Gao (Shanghai Institute of Optics of fine Mechanics, China); Bao-Qiang Zhu (Shanghai Institute of Optics of Fine Mechanics, China); Dai-Zhong Liu (Shanghai Institute of Optics of fine Mechanics, China); Zun-Qi Lin (Shanghai Institute of Optics of fine Mechanics, China);*

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**Session 3A6a**

**Photonic Crystals and Metamaterials 3**

**Wednesday AM, July 7, 2010**

**Room F**

Organized by Arthur R. McGurn

Chaired by Arthur R. McGurn

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- 08:00 Dielectric-dielectric Composite Photonic Crystals for Negative Refraction of Unpolarized Electromagnetic Waves  
*N. Yogesh (Indian Institute of Technology Madras, India); Venkatachalam Subramanian (Indian Institute of Technology Madras, India);*
- 08:20 Magnetoplasmonics: Fundamentals and Applications  
*Antonio García-Martín (Instituto de Microelectrónica de Madrid (IMM-CNM-CSIC), Spain); Gaspar Armeltes (Instituto de Microelectrónica de Madrid (IMM-CNM-CSIC), Spain); A. Cebolada (Instituto de Microelectrónica de Madrid (IMM-CNM-CSIC), Spain); J. M. García-Martín (Instituto de Microelectrónica de Madrid (IMM-CNM-CSIC), Spain); M.U. González (Instituto de Microelectrónica de Madrid (IMM-CNM-CSIC), Spain); J. B. González-Díaz (Instituto de Microelectrónica de Madrid (IMM-CNM-CSIC), Spain); J. F. Torrado (Instituto de Microelectrónica de Madrid (IMM-CNM-CSIC), Spain); E. Ferreira-Vila (Instituto de Microelectrónica de Madrid (IMM-CNM-CSIC), Spain); D. Martín-Becerra (Instituto de Microelectrónica de Madrid (IMM-CNM-CSIC), Spain);*
- 08:40 Plasmonic Crystals for Reproducible SERS Detection  
*Stavroula Foteinopoulou (University of Exeter, United Kingdom); J. P. Vigneron (Facultes Universitaires Notre-Dame de la Paix (FUNDP), Belgium);*
- 09:00 FDTD Analysis of the Stealth Property of Metamaterials Based on Drude Model  
*Shi-Quan Zhang (Engineering College of CAPF, China); Jian-Ping Liu (Engineering College of CAPF, China); Cong Chen (Engineering College of CAPF, China); Bing Wei (Xidian University, China);*

- 09:20 Anomalous Infrared Transmission through Superconducting Structures  
*Oleg L. Berman (The City University of New York, USA); Vladimir S. Boyko (The City University of New York, USA); Roman Ya. Kezerashvili (The City University of New York, USA); Yurii E. Lozovik (Institute of Spectroscopy of the Russian Academy of Sciences, Russia);*

- 09:40 Optical Transmission through a Vortex Lattice in a Film of Type-II Superconductor

*Oleg L. Berman (The City University of New York, USA); Yurii E. Lozovik (Institute of Spectroscopy of the Russian Academy of Sciences, Russia); Maria V. Bogdanova (Institute of Spectroscopy, Russian Academy of Sciences, Russia); Anton A. Kolesnikov (Institute of Spectroscopy, Russian Academy of Sciences, Russia); Rob D. Coalson (University of Pittsburgh, USA);*

- 10:00 **Coffee Break**

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**Session 3A6b**

**Electromagnetic Science and Design on The Optical Dispersive Metamaterials, Invisible Cloak and Photonic Crystals**

**Wednesday AM, July 7, 2010**

**Room F**

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

Chaired by Ganquan Xie

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- 10:20 Light Scattering from 3-D Nanoscale Disordered Media  
*Gerard Berginc (Thales Optronique S.A., France); Claude Bourrely (Centre de Physique Theorique, France);*
- 10:40 Designer PhoXonic ( $\mathbf{X} = \mathbf{t}, \mathbf{n}$ ) Crystals  
*Cheong Yang Koh (Massachusetts Institute of Technology, USA); Edwin L. Thomas (Massachusetts Institute of Technology, USA);*
- 11:00 Analysis of Dispersion Properties of Waveguide Based on Metamaterials  
*Samia Bouali (National Engineering School of Tunisia (ENIT), Tunisia); Taoufik Aguil (Ecole Nationale d'ingénieurs de Tunis, Tunisia);*

- 11:20 Magneto-optical Photonic Crystals: Magnetic Field Tunability and Designed One-way Transport of Electromagnetic Waves  
*Zhi-Yuan Li (Chinese Academy of Sciences, China); Rong-Juan Liu (Chinese Academy of Sciences, China); Jin-Xin Fu (Chinese Academy of Sciences, China);*
- 11:40 GL Inner Cloak for Invisibility and Gravityless and Boundary Zone Absorption Condition  
*Jianhua Li (GL Geophysical Laboratory, USA); Ganquan Xie (GL Geophysical Laboratory, USA); Lee Xie (GL Geophysical Laboratory, USA); Feng Xie (GL Geophysical Laboratory, USA); Michael Oristaglio (Schlumberger Doll Research, USA);*
- 14:40 Optical Forces and Optical Torques on Particles Arising from Optical Lattices in the Lorentz-Mie Regime  
*Lin Jia (Massachusetts Institute of Technology, ); Edwin L. Thomas (Massachusetts Institute of Technology, USA);*
- 15:00 **Coffee Break**
- 15:20 The Investigation of Angular Dispersion Effect Based on Hetero Metal-dielectric-metal Plasmonic Waveguide  
*Chao-Yi Tai (National Central University, Taiwan); Wen-Hsiang Yu (National Central University, Taiwan); Sheng Hsiung Chang (Academia Sinica, Taiwan);*
- 15:40 The “Missing Mass” in the Universe May Be Represented by the Dynamic-mass of the Photons  
*Antonio Puccini (Order of Malta, Italy);*
- 16:00 The Inflationist Expansion of the Universe Was Conducted by Very High Energy Photons  
*Antonio Puccini (Order of Malta, Italy);*
- 16:20 Vertical Pillar Array Plasmon Nanocavities  
*Mihail Bora (Lawrence Livermore National Laboratory, USA); Ben Fasenfest (Lawrence Livermore National Laboratory, USA); E. Behymer (Lawrence Livermore National Laboratory, USA); A. S. Chang (Lawrence Livermore National Laboratory, USA); H. T. Nguyen (Lawrence Livermore National Laboratory, USA); J. A. Britten (Lawrence Livermore National Laboratory, USA); C. Larson (Lawrence Livermore National Laboratory, USA); T. Bond (Lawrence Livermore National Laboratory, USA);*
- 16:40 Silicon Quantum Dots in Microcylinder and Microdisk Resonators: From Stress-induced Q-factor Tuning to Purcell Enhancement of Emission Rates  
*Mher Ghulinyan (Fondazione Bruno Kessler, Italy); Alessandro Pitanti (University of Trento, Italy); Daniel Navarro-Urrios (University of Barcelona, Spain); Georg Pucker (Fondazione Bruno Kessler, Italy); Lorenzo Pavesi (University of Trento, Italy);*
- 17:00 Self-field Theory — A Possible Gravitational Structure for Galaxies  
*Anthony H. J. Fleming (Biophotonics Research Institute, Australia);*
- 17:20 Self-field Theory-biodiversity May Be a Resonance Process  
*Anthony H. J. Fleming (Biophotonics Research Institute, Australia);*
- 17:40 Self-field Theory-biophotons and EPR  
*Anthony H. J. Fleming (Biophotonics Research Institute, Australia);*

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**Session 3P1**  
**Optics and Photonics**

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**Wednesday PM, July 7, 2010**

**Room A**

Chaired by Javid Atai, Tomoyuki Yoshie

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- 13:00 Three-dimensional Woodpile Photonic Crystal Materials and Microcavities  
*Tomoyuki Yoshie (Duke University, USA); Lingling Tang (Duke University, USA);*
- 13:20 Design of LED Optics to Generate Required Irradiance Distribution with Wide Angular Dimension  
*L. L. Doskolovich (Image Processing Systems Institute RAS, Russia); N. L. Kazansky (Image Processing Systems Institute RAS, Russia); Mikhail A. Moiseev (Image Processing Systems Institute RAS, Russia);*
- 13:40 Surface Plasmon Resonance Modes of Metal Nanostructures Embedded in Layered Media: A Full Analytical Method  
*Ergun Simsek (Bahcesehir University, Turkey); Tolga Aydoğan (Bahcesehir University, Turkey); Gokhan Barlak (Bahcesehir University, Turkey);*
- 14:00 Stability of Bragg Grating Solitons in a Cubic-quintic Nonlinear Medium with Dispersive Reflectivity  
*Sahan Dasanayaka (The University of Sydney, Australia); Javid Atai (The University of Sydney, Australia);*
- 14:20 Performance Assessment of the Logarithmic-hybrid Optical Neural Network Filter for Multiple Objects Recognition  
*Ioannis Kypraios (University of Sussex, UK);*

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**Session 3P2a**  
**Microwave Non-destructive Evaluation**

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**Wednesday PM, July 7, 2010**

**Room B**

Organized by Venkatachalam Subramanian

Chaired by Venkatachalam Subramanian

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- 13:20 Subsurface Sub-terahertz and Terahertz Tomography  
*Alexey A. Vertiy (TUBITAK-MRC, Turkey); Harun Cetinkaya (TUBITAK-MRC, Turkey); Mustafa Tekbas (TUBITAK-MRC, Turkey);*
- 13:40 Advanced Studies of the Differential Phase Shift in the Azimuthally Magnetized Circular Ferrite Waveguide  
*Mariana Nikolova Georgieva-Grosse (Meterstrasse 4, Germany); Georgi Nikolov Georgiev (University of Veliko Tırnovo "St. St. Cyril and Methodius", Bulgaria);*
- 14:00 Detection of Materials Structure via 3D Imaging  
*George G. Cheng (Allwave Corporation, USA); Yong Zhu (Allwave Corporation, USA); Jan Alexander Grzesik (Allwave Corporation, USA);*
- 14:20 Novel Band Pass Filters Using Folded Slots Etched in the Ground Plane  
*Gharbi Ramzi (Faculté des Sciences de Tunis, Tunisia); Zairi Hassen (Faculty of Science of Tunis, Tunisia); Hichem Trabelsi (Faculty of Sciences of Tunis, Tunisia);*
- 15:00 **Coffee Break**
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**Session 3P2b**  
**Remote Sensing of the Earth, Ocean, and Atmosphere**

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**Wednesday PM, July 7, 2010**

**Room B**

Chaired by Joel T. Johnson, Shigehisa Nakamura

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- 15:20 A Study of Interferometric Phase Statistics for Sea Surface Height Retrieval Using Numerically Simulated Low Grazing Angle Backscatter Data  
*Chun Sik Chae (The Ohio State University, USA); Joel T. Johnson (The Ohio State University, USA);*
- 15:40 Research of a Solid Object Impacting on the Water Surface  
*Ching-Jer Huang (National Cheng-Kung University, Taiwan); Tsung-Mo Tien (National Cheng-Kung University, Taiwan);*

- 16:00 A Rectangular Patch Antenna Technique for the Determination of Moisture Content in Soil  
*Kok Yeow You (University Teknologi Malaysia, Malaysia); J. Salleh (University Teknologi Malaysia, Malaysia); Zulkifly Abbas (University Putra Malaysia, Malaysia); L. L. You (International Medical University, Malaysia);*
- 16:20 Monitored Solar Cycle in Relation to an Approximated Model  
*Shigehisa Nakamura (Kyoto University, Japan);*
- 16:40 Satellite Monitoring of Lunar Shadow on the Earth at Solar Eclipse  
*Shigehisa Nakamura (Kyoto University, Japan);*
- 17:00 Monitored Solar Cycle in Relation to Sea Surface Temperature at Azores in the Northeast Atlantic Ocean  
*Shigehisa Nakamura (Kyoto University, Japan);*
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**Session 3P3**  
**Antenna Array Synthesis — Theory, Algorithms, and Applications**

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**Wednesday PM, July 7, 2010**

**Room C**

Organized by Paolo Rocca, Giacomo Oliveri

Chaired by Paolo Rocca

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- 13:00 A Pattern Synthesis Technique for Multiplicative Arrays  
*Herbert M. Aumann (MIT Lincoln Laboratory, USA);*
- 13:20 Rectangular Thinned Array Design by McFarland Difference Sets  
*Giacomo Oliveri (University of Trento, Italy); Federico Caramanica (University of Trento, Italy); Paolo Rocca (University of Trento, Italy); Andrea Massa (University of Trento, Italy);*
- 13:40 Interleaved Array Antennas Design — (Almost) Deterministic Strategies  
*Massimiliano Simeoni (Delft University of Technology, The Netherlands); Ioan E. Lager (Delft University of Technology, The Netherlands); Cristian I. Coman (Command and Control Agency (NC3A), The Netherlands); Christian Trampuz (Delft University of Technology, The Netherlands);*
- 14:00 Theory, Algorithms and Technological Issues in Modern Radar Array Systems  
*Michele D'Urso (Selex Sistemi Integrati, Italy); M. G. Labate (Selex Sistemi Integrati, Italy); Aniello Buonanno (Selex Sistemi Integrati, Italy); A. Cetronio (Selex Sistemi Integrati, Italy);*
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- 14:20 Antenna Array Synthesis through Time Modulation  
Lorenzo Poli (*University of Trento, Italy*); Paolo Rocca (*University of Trento, Italy*); Giacomo Oliveri (*University of Trento, Italy*); Leonardo Lizzi (*University of Trento, Italy*); Andrea Massa (*University of Trento, Italy*);
- 14:40 A Complete MIMO System Built on a Single RF Communication Ends  
Vlasis Barousis (*University of Piraeus, Greece*); Athanasios G. Kanatas (*University of Piraeus, Greece*); George P. Efthymoglou (*University of Piraeus, Greece*);
- 15:00 **Coffee Break**
- 15:20 Critical Wavenumbers in the Classification of Fractal Radiation Patterns  
Giovanni Franco Crosta (*University of Milan-Bicocca, Italy*);
- 15:40 Artificial Magneto-superstrates for Gain and Efficiency Improvement of Microstrip Antenna Arrays  
Hussein Attia (*University of Waterloo, Canada*); Omar F. Siddiqui (*University of Waterloo, Canada*); Omar M. Ramahi (*University of Waterloo, Canada*);
- 16:00 Blind Pattern Synthesis for Beam-steering Conformal Arrays Using Time Reversal Technique  
Deshuang Zhao (*University of Electronic Science and Technology of China, China*); Yuan-Wei Jin (*University of Maryland Eastern Shore, USA*); Rui Zang (*University of Electronic Science and Technology of China, China*); Bingzhong Wang (*University of Electronic Science and Technology of China, China*);
- 16:20 Analytical Model to Compute the Far-field Radiation of Patch Antennas Arrays Loaded with Metamaterial-superstrates  
Hussein Attia (*University of Waterloo, Canada*); Omar F. Siddiqui (*University of Waterloo, Canada*); Omar M. Ramahi (*University of Waterloo, Canada*);
- 16:40 Rectangular Ring Antenna for On-body Communication System  
Norsiha Zainudin (*Universiti Teknologi Malaysia, (UTM Skudai), Malaysia*); Muhammad Ramlee Bin Kamarudin (*Universiti Teknologi Malaysia, Malaysia*);
- 17:00 Neural Network Approach to Diagonise Faults in Linear Antenna Array  
Damera Vakula (*National Institute of Technology, India*); N. V. S. N. Sarma (*National Institute of Technology, India*);
- 17:20 A New Fractal Antenna for Super Wideband Applications  
Abolfazl Azari (*Islamic Azad University — Gonabad Branch, Iran*);
- 17:40 Koch Fractal Antenna for UWB Applications  
Javad Rohani (*Faculty Member of IAU, Gonabad Branch, Iran*); Abolfazl Azari (*Islamic Azad University, Iran*);

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**Session 3P4a**
**Approaches to Electromagnetic Simulation and Modeling for 2D and 3D Chips in the Nanometer Domain**


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**Wednesday PM, July 7, 2010**
**Room D**

Organized by Luca Daniel, Roberto Suaya

Chaired by Luca Daniel

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- 13:00 Electromagnetic Simulation for Variation-aware Interconnect Parasitic Extraction  
Tarek El-Moselhy (*Massachusetts Institute of Technology, USA*); Luca Daniel (*Massachusetts Institute of Technology, USA*);
- 13:20 A System for Electromagnetic Characterization of Inductors in the Presence of Other Nearby Inductors and Interconnect  
Rafael Escovar (*Mentor Graphics, France*); Jean Christophe Tempesta (*Mentor Graphics, France*); Navin Srivastava (*Mentor Graphics, France*); Roberto Suaya (*Mentor Graphics, France*);
- 13:40 FastCaplet: A Template-based Capacitance Field Solver for 3D VLSI Interconnect  
Yu-Chung Hsiao (*Massachusetts Institute of Technology, USA*); Tarek El-Moselhy (*Massachusetts Institute of Technology, USA*); Luca Daniel (*Massachusetts Institute of Technology, USA*);
- 14:00 Electromagnetic Simulation of 3D ICs, Some Novelties Related to 3D Problems in Stratified Media  
Vassilis Kourkoulos (*Mentor Graphics, France*); Roberto Suaya (*Mentor Graphics, France*);
- 14:20 Compact AC Modeling and Performance Analysis of Through-silicon Vias (TSVs) in 3-D ICs  
Chuan Xu (*University of California, USA*); Hong Li (*University of California, USA*); Roberto Suaya (*Mentor Graphics Corporation, France*); Kaustav Banerjee (*University of California, USA*);

14:40 Passive Reduced Order Modeling of Multiport Interconnects via Semidefinite Programming  
*Zohaib Mahmood (Massachusetts Institute of Technology, USA); B. Bond (Massachusetts Institute of Technology, USA); T. Mosehly (Massachusetts Institute of Technology, USA); A. Megretski (Massachusetts Institute of Technology, USA); Luca Daniel (Massachusetts Institute of Technology, USA);*

15:00 **Coffee Break**

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**Session 3P4b**  
**Microwave Devices, Propagation**

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**Wednesday PM, July 7, 2010**

**Room D**

Organized by Rodica Ramer

Chaired by Rodica Ramer

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15:20 An Energy Efficient Node Deployment Strategy for Wireless Sensor Network  
*Ghufran Ahmed (University of Texas at Arlington, USA); Noor M. Khan (Mohammad Ali Jinnah University, Pakistan); Rodica Ramer (University of New South Wales (UNSW), Australia);*

15:40 Impact of Spatio-temporal and Environmental Factors on the Performance of Wireless Sensor Networks  
*Ghufran Ahmed (University of Texas at Arlington, USA); Noor M. Khan (Mohammad Ali Jinnah University, Pakistan); Rodica Ramer (University of New South Wales (UNSW), Australia);*

16:00 Miniaturized RF MEMS Switch Matrices  
*King Yuk Chan (University of New South Wales, Australia); Raafat R. Mansour (University of Waterloo, Canada); Rodica Ramer (University of New South Wales (UNSW), Australia); Raafat R. Mansour (University of Waterloo, Canada);*

16:20 RF MEMS Switchable Bandpass Filter  
*King Yuk Chan (University of New South Wales, Australia); Siamak Fouladi (University of Waterloo, Canada); Rodica Ramer (University of New South Wales (UNSW), Australia); Raafat R. Mansour (University of Waterloo, Canada);*

16:40 Spectrally Coded Multiplexing Based on FBG Pairs  
*Binbin Yan (University of New South Wales, Australia); Paul A. Childs (University of New South Wales, Australia); Chongxiu Yu (Beijing University of Posts and Telecommunications, China); Xinzhong Sang (Beijing University of Posts and Telecommunications, China); Daxiong Xu (Beijing University of Posts and Telecommunications, China); Gang-Ding Peng (University of New South Wales, Australia);*

17:00 Design and Simulation of High Quality Tunable Band Pass RF MEMS Filter  
*Yasser Mafinejad (Deakin University, Australia); Rodica Ramer (University of New South Wales (UNSW), Australia); K. Mafinezhad (Ferdowsi University, Iran); A. Kouzani (Deakin University, Australia); D. Naseh (Sadjad University, Iran);*

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**Session 3P5**

**Biomedical Electromagnetic Instruments,  
 Electromagnetic Condensed Materials and  
 Imaging**

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**Wednesday PM, July 7, 2010**

**Room E**

Organized by Ganquan Xie

Chaired by Ganquan Xie

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13:00 Bioelectrical Impedance Analysis by Multiple Frequencies for Health Care Refrigerator  
*Bo-Rim Ryu (Seoul National University, Korea); Hae-seong Jeong (Chungbuk National University, Korea); Heung-Gyoon Ryu (Chungbuk National University, Korea);*

13:20 Simulations of Multi-Photon Absorption Spectra for Fullerene Derivatives  $C_{60} > C_2H_4NH_3(\text{Polyaniline})_n$  Based on First-principle Calculations  
*W.-D. Cheng (Fujian Institute of Research on the Structure of Matter, Chinese Academy of Sciences, China); J.-Y. Wang (Fujian Institute of Research on the Structure of Matter, Chinese Academy of Sciences, China);*

13:40 Immunity of ICD Exposed to Low Frequency Magnetic Fields  
*Juliano Katrib (Nancy University, France); Mustapha Nadi (Nancy University, France); Patrice Roth (Nancy University, France); Pierre Schmitt (Nancy University, France); Djilali Kourtiche (Nancy University, France); Martine Souques (EDF-R&D Site des Renardières, France);*

14:00 Computational Modeling of Electromagnetically Induced Heating of Magnetic Nanoparticle Materials for Hyperthermic Cancer Treatment  
*L. Rast (University of Alabama at Birmingham, USA); Joseph G. Harrison (University of Alabama at Birmingham, USA);*

14:20 The Effects of Breast Tissue Heterogeneity on Data-adaptive Beamforming  
*Dallan Byrne (National University of Ireland Galway, Ireland); Martin O'Halloran (National University of Ireland Galway, Ireland); Edward Jones (National University of Ireland Galway, Ireland); Martin Glavin (National University of Ireland Galway, Ireland);*

14:40 Numerical Simulation of Inductive Phase Shift Due a Brain Hematoma  
*Rafael Rojas Rojas (Universidad Autonoma Metropolitana, México); Alfredo O. Rodriguez (Universidad Autonoma Metropolitana, México);*

15:00 **Coffee Break**

15:20 Microstrip Antennas for Direct Human Skin Placement for Biomedical Applications  
*Sudhir Shrestha (Indiana University — Purdue University Indianapolis (IUPUI), USA); Mangilal Agarwal (Indiana University — Purdue University Indianapolis (IUPUI), USA); Joshua Reid (Indiana University — Purdue University Indianapolis (IUPUI), USA); Kody Varahramyan (Indiana University — Purdue University Indianapolis (IUPUI), USA);*

15:40 Design of Small-sized and Low-cost Front End to Medical Microwave Radiometer  
*Oystein Klemetsen (University of Tromso, Norway); Yngve Birkelund (University of Tromso, Norway); P. F. Maccarini (Duke University, USA); Paul Stauffer (Duke University, USA); S. K. Jacobsen (University of Tromso, Norway);*

16:00 The Application of the Hilbert-Huang Transform in Through-wall Life Detection with UWB Impulse Radar  
*Zijian Liu (University of Connecticut, USA); Lambo Liu (Cold Regions Research and Engineering Laboratory, USA); Benjamin Barrowes (Cold Regions Research and Engineering Laboratory, USA);*

16:20 Instrumentation, Equipment and Metrology for Laser Diagnostic  
*Vladimir V. Tchernyi (Cherny) (Modern Science Institute at SAIBR, Russia); Dmitrii A. Rogatkin (Moscow Regional Research and Clinical Institute "MONIKI", Russia);*

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### Session 3P6

#### Inverse Scattering Problems: Open Problems and New Challenges

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Wednesday PM, July 7, 2010

Room F

Organized by Michele D'Urso, Xudong Chen

Chaired by Xudong Chen

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13:00 Compressive Through-focus Imaging  
*Oren Mangoubi (Yale University, USA); Edwin A. Marengo (Northeastern University, USA);*

13:20 3D Inversion of Fresnel Database with 3D Markov Random Field  
*Roberta Autieri (Universita di Napoli Parthenope, Italy); Michele D'Urso (Selex Sistemi Integrati, Italy); C. Eyraud (Institut Fresnel, France); Amélie Litman (Institut Fresnel, France); Vito Pascazio (Universita di Napoli Parthenope, Italy); Tommaso Isernia (Mediterranea University of Reggio Calabria, Italy);*

13:40 Evolutionary-based Optimization Techniques for Inverse Scattering — A Review  
*Paolo Rocca (University of Trento, Italy); Andrea Massa (University of Trento, Italy);*

14:00 Subspace-based Optimization Method in the Framework of the Contrast-source Extended Born Model  
*Krishna Agarwal (National University of Singapore, Singapore); Xudong Chen (National University of Singapore, Singapore); Michele D'Urso (Selex Sistemi Integrati, Italy);*

14:20 Subspace-based Optimization Method with Initial Guess through a Multipole-expansion Based Linear Sampling Method  
*Yu Zhong (National University of Singapore, Singapore); Krishna Agarwal (National University of Singapore, Singapore); Xudong Chen (National University of Singapore, Singapore);*

14:40 Application of the Adaptive Cross Approximation for the Regularized Gauss-Newton Inversion Approach  
*Maokun Li (Schlumberger-Doll Research, USA); Aria Abubakar (Schlumberger-Doll Research, USA); Tarek M. Habashy (Schlumberger-Doll Research, USA);*

15:00 **Coffee Break**

15:20 3-D Microwave Imaging in a Non-Canonical Inhomogeneous Background  
*Mengqing Yuan (Duke University, USA); Qing Huo Liu (Duke University, USA);*

- 15:40 A Krylov Subspace Approach to Parametric Inversion of Electromagnetic Data Based on Residual Minimization  
*Edmond Balidemaj (Delft University of Technology, The Netherlands); Rob F. Remis (Delft University of Technology, The Netherlands);*
- 16:00 Normalized Energy Density of Gravitational Waves as an Inverse Scattering Problem, When Frequency-based Count of Gravitons Per Unit Cell of Phase Space Is Coupled to Photon Numerical "Counting"  
*Andrew Walcott Beckwith (American Institute of Beamed Energy Propulsion, USA);*
- 16:20 Multi-static Radar Through-the-wall Imaging with Time Reversal MUSIC Algorithm  
*Wenji Zhang (Villanova University, USA); Ahmad Hoorfar (Villanova University, USA);*

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**Session 4A1**

**Nonlinear Inversion Approaches for Microwave Biomedical Applications**

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**Thursday AM, July 8, 2010**

**Room A**

Organized by Paul M. Meaney, Aria Abubakar

Chaired by Paul M. Meaney, Aria Abubakar

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- 08:20 Noninvasive SAR Measurements  
*George G. Cheng (Allwave Corporation, USA); Yong Zhu (Allwave Corporation, USA); Jan Alexander Grzesik (Allwave Corporation, USA);*
- 08:40 A New Reconstruction Method for Electromagnetic Biomedical Imaging  
*Aref Lakhal (University of Saarland, Germany);*
- 09:00 3D Microwave Imaging of the Breast: Preliminary Results and Challenges  
*Amir H. Golnabi (Dartmouth College, USA); Paul M. Meaney (Dartmouth College, USA); Sherri D. Geimer (Dartmouth College, USA); Keith D. Paulsen (Dartmouth College, USA);*
- 09:20 Iterative Multi-scaling Approach for Large-scale Problems — Contrast Source and Contrast Field Formulations  
*Paul-Andre Barriere (University of Trento, Italy); Andrea Massa (University of Trento, Italy);*
- 09:40 Three-dimensional Tomographic Microwave Medical Imaging  
*Tomasz M. Grzegorzczak (Delpsi, LLC, USA); Paul M. Meaney (Dartmouth College, USA); Soon Ik Jeon (ETRI, South Korea); Sherri D. Geimer (Dartmouth College, USA); Keith D. Paulsen (Dartmouth College, USA);*

10:00 **Coffee Break**

- 10:20 Prescaling of Data for Improved Parameter Sensitivity in Biomedical Nonlinear Microwave Imaging  
*Tonny Rubæk (Chalmers University of Technology, Sweden); Andreas Fhager (Chalmers University of Technology, Sweden);*
- 10:40 Imaging of Animal Extremities Using Dedicated Microwave Tomographic System  
*Serguei Semenov (Keele University, UK); B. Nair (Keele University, UK); J. Kellam (Carolinas Medical Center, USA); T. Williams (Carolinas Medical Center, USA); M. Quinn (Carolinas Medical Center, USA);*
- 11:00 3D Inversion Using the Multiplicative-regularized Gauss-Newton Approach  
*Aria Abubakar (Schlumberger-Doll Research, USA); Tarek M. Habashy (Schlumberger-Doll Research, USA);*
- 11:20 Microwave Imaging of Bone: Initial Patient Results  
*Paul M. Meaney (Dartmouth College, USA); Tian Zhou (Dartmouth College, USA); Sherri D. Geimer (Dartmouth College, USA); Amir Golnabi (Dartmouth College, USA); Keith D. Paulsen (Dartmouth College, USA);*
- 11:40 Antenna Modeling Issues in Quantitative Image Reconstruction Using a Flexible Microwave Tomography System  
*Nikola Petrovic (Mälardalen University, Sweden); Tommy Henriksson (Mälardalen University, Sweden); Magnus Otterskog (Mälardalen University, Sweden);*

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**Session 4A2**

**Forward and Inverse Algorithms for Microwave Remote Sensing of Soil Moisture with SMAP**

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**Thursday AM, July 8, 2010**

**Room B**

Organized by Mahta Moghaddam, Joel T. Johnson

Chaired by Mahta Moghaddam, Joel T. Johnson

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- 08:20 A Two Layers Multi-scale Bi-dimensional SPM Model for the Study of Radar Backscatter Behavior on Semi-arid Soil Subsurfaces  
*Lilia Bennaceur Farah (Ecole Nationale d'Ingenieurs de Tunis, Tunisia); Raouf Bennaceur (Faculte des Sciences de Tunis, Tunisia); Imed Riadh Farah (ENSI, Tunisia); Ibtissem Hosni (Ecole Nationale d'Ingenieurs de Tunis, Tunisia);*



08:40 New Roughness and Dielectric Constant Modeling and Their Effect on Radar Signal Backscattered over Soil Surface  
*Mehrez Zribi (CNRS CESBIO, France); Aurélie Le Morvan (CEMAGREF, France); Monique Dechambre (CEMAGREF, France); Nicolas Baghdadi (CEMAGREF, UMR TETIS, France);*

09:00 Data Cube Representation of Vegetated Surfaces Based on Physical Scattering Model for SMAP Mission  
*Xiaolan Xu (University of Washington, USA); Shaowu Huang (University of Washington, USA); Leung Tsang (University of Washington, USA); Seung-Bum Kim (California Institute of Technology, USA); Eni Gerald Njoku (California Institute of Technology, USA);*

09:20 Soil Moisture Retrieval Using Data Cube Representation of Radar Scattering  
*Seung-Bum Kim (California Institute of Technology, USA); Eni Gerald Njoku (California Institute of Technology, USA);*

09:40 Radar Retrieval of Subcanopy Soil Moisture Using Simulated Annealing  
*Alireza Tabatabaenejad (University of Michigan, USA); Mahta Moghaddam (University of Michigan, USA);*

10:00 **Coffee Break**

10:20 Azimuthal Signature of Coincidental Brightness Temperature and Normalized Radar Cross-section Obtained Using Airborne PALS Instrument  
*Andreas Colliander (California Institute of Technology, USA); Seung-Bum Kim (California Institute of Technology, USA); Simon H. Yueh (California Institute of Technology, USA); Mike H. Cosh (USDA Agricultural Research Service, USA); Thomas J. Jackson (USDA ARS, USA); Eni Gerald Njoku (California Institute of Technology, USA);*

10:40 Covariance Matrix for Compact Polarimetry for Soil Moisture Estimation  
*Joel T. Johnson (The Ohio State University, USA);*

11:00 L Band Brightness Temperature from Forests: Comparison of Approximate Techniques  
*Mehmet Kurum (NASA Goddard Space Flight Center, USA); Roger H. Lang (The George Washington University, USA); Peggy Elizabeth O'Neill (NASA Goddard Space Flight Center, USA);*

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**Session 4A3**  
**Novel Mathematical Methods in**  
**Electromagnetics 1**

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**Thursday AM, July 8, 2010**

**Room C**

Organized by Kazuya Kobayashi, Yury V. Shestopalov

Chaired by Kazuya Kobayashi

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08:20 Wave Equations in Electromagnetic and Gravitational Fields  
*Zi-Hua Weng (Xiamen University, China);*

08:40 Theory of the  $\hat{L}(\hat{c}, \hat{n})$  Numbers and Its Application to the Slow Wave Propagation in the Circular Ferrite Waveguide  
*Georgi Nikolov Georgiev (University of Veliko Tirново "St. St. Cyril and Methodius", Bulgaria); Mariana Nikolova Georgieva-Grosse (Meterstrasse 4, Germany);*

09:00 About the Specific Heat of Black Holes  
*Antonio Puccini (Order of Malta, Italy);*

09:20 Application of Analytical Method to Weak Global Positioning System Signal  
*Hamed Babazadeh (Babol University of Technology, Iran); S. Askari (University Los Angeles, USA); A. Safaian (University Los Angeles, USA); M. Razfar (University Los Angeles, USA);*

09:40 Oblique Incident Plane Wave Condition for Finite-difference Time-domain Simulations of Surface Plasmons Excited at Nanoscale Slits in Layered Dispersive Media  
*Lingziao Zhang (Northwestern University, USA); Tamar Seideman (Northwestern University, USA);*

10:00 **Coffee Break**

10:20 Electrodynamics in Expanding Cavities  
*Jan Alexander Grzesik (Allwave Corporation, USA);*

10:40 Scattering and Localization of Light in a Waveguide System with a Single Imperfection Core  
*Akira Komiyama (Osaka Electro-Communication University, Japan);*

11:00 Electromagnetic Field Quantization in the Presence of a Medium  
*Fardin Kheirandish (University of Isfahan, Iran);*

11:20 Initial Formation of the Sombrero Rings of Saturn: Role of Electromagnetism  
*Vladimir V. Tchernyi (Cherny) (Modern Science Institute at SAIBR, Russia);*

- 11:40 Possibility of Separation and Collision of the Saturn Rings Particles during Its Evolution Based on Electromagnetism  
*Vladimir V. Tchernyi (Cherny) (Modern Science Institute at SAIBR, Russia);*

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**Session 4A4**

**New Horizons in Electromagnetic Compatibility and Personal Health Protection**

**Thursday AM, July 8, 2010**

**Room D**

Organized by Victoria Ramos

Chaired by Victoria Ramos

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- 08:20 Electromagnetic Compatibility on Health Applications  
*Noemí Carranza (Health Institute Carlos III, Spain); Victoria Ramos (Health Institute Carlos III, Spain);*
- 08:40 EMC Compliance on Medical Sensors and Health Risk Evaluation  
*Victoria Ramos (Health Institute Carlos III, Spain); Jorge García (Health Institute Carlos III, Spain); Noemí Carranza (Health Institute Carlos III, Spain);*
- 09:00 Electromagnetic Fields in Home and Public Environment and Home Care Devices  
*Jolanta Karpowicz (Central Institute for Labour Protection-National Research Institute (CIOP-PIB), Poland);*
- 09:20 Evaluation of Multisystem EM Dosimetry in Indoor Environments  
*Victor Torres (Universidad Pública de Navarra, Spain); Noemí Carranza (Instituto de Salud Carlos III, Spain); Fermín Esparza (Universidad Pública de Navarra, Spain); Miguel Navarro-Cia (Universidad Publica de Navarra, Spain); Miguel Beruete (Universidad Publica de Navarra, Spain); Victoria Ramos (Instituto de Salud Carlos III, Spain); Francisco J. Falcone (Universidad Publica de Navarra, Spain);*
- 09:40 Analysis of EM Field Exposure in Future 4G Mobile System Environments  
*Victor Torres (Universidad Pública de Navarra, Spain); Noemí Carranza (Instituto de Salud Carlos III, Spain); Fermín Esparza (Universidad Pública de Navarra, Spain); Miguel Navarro-Cia (Universidad Pública de Navarra, Spain); Miguel Beruete (Universidad Pública de Navarra, Spain); Victoria Ramos (Instituto de Salud Carlos III, Spain); Francisco J. Falcone (Universidad Pública de Navarra, Spain);*

**10:00 Coffee Break**

- 10:20 Numerical Simulation of EM Environment and Human Exposure When Using RFID Devices  
*Aránzazu Sanchis (Centro Nacional de Sanidad Ambiental, Instituto de Salud Carlos III, Spain); Javier Espinosa-García (Instituto de Física Aplicada, Consejo Superior de Investigaciones Científicas (CSIC), Spain); Agustín Martín (Instituto de Física Aplicada, Consejo Superior de Investigaciones Científicas (CSIC), Spain);*
- 10:40 Magnetic Field Related to Transient Currents in Electric Power Supply System — Assessment of Human's Exposure  
*Krzysztof Gryz (Central Institute for Labour Protection — National Research Institute (CIOP-PIB), Poland); Jolanta Karpowicz (Central Institute for Labour Protection — National Research Institute (CIOP-PIB), Poland); Wiesław Leszko (Central Institute for Labour Protection — National Research Institute (CIOP-PIB), Poland);*
- 11:00 Health Risk Perception about Wireless Communication Technologies  
*Maria Dolores Marcos García (Agency “Lain Entralgo” for Education and Health Research, Spain); Victoria Ramos (Health Institute “Carlos III”, Spain);*
- 11:20 2.4 GHz EMP Protection Circuit with Micro Strip Filter Configuration  
*Liann-Be Chang (Chang Gung University, Taiwan, R.O.C.); Atanu Das (Chang Gung University, Taiwan, R.O.C.); Ching-Chi Lin (Chang Gung University, Taiwan, R.O.C.); Ji-Chyun Liu (Ching Yun University, Taiwan, R.O.C.); Yi-Cherng Ferng (Chang Gung University, Taiwan, R.O.C.); Chien-Fu Shih (Chang Gung University, Taiwan, R.O.C.); Sheng-You Liao (Chang Gung University, Taiwan, R.O.C.);*

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**Session 4A5**

**Extended/Unconventional Electromagnetic Theory, EHD (Electro-hydrodynamics)/EMHD (Electro-magneto-hydrodynamics), and Electro-biology 1**

**Thursday AM, July 8, 2010**

**Room E**

Organized by Eva Gescheidtová

Chaired by Pavel Fiala

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- 08:20 Distributed Transverse Orientation (DiTO) in Maxwell's Equations  
*John E. Carroll (University of Cambridge, UK);*
- 08:40 Detection of Partial Discharge inside of HV Transformer, Modeling, Sensors and Measurement  
*Pavel Fiala (Brno University of Technology, Czech Republic); Tomáš Jirku (Brno University of Technology, Czech Republic); Petr Drexler (Brno University of Technology, Czech Republic); Premysl Dohnal (Brno University of Technology, Czech Republic);*
- 09:00 EMHD Model Used for Linear Moving Objects Analysis  
*Pavel Fiala (Brno University of Technology, Czech Republic); Zoltán Szabó (Brno University of Technology, Czech Republic); Tibor Bachorec (Brno University of Technology, Czech Republic); Premysl Dohnal (Brno University of Technology, Czech Republic);*
- 09:20 Tuned Periodical Structures — Model, Experiments in THz Band Applied in Safety Application  
*Pavel Fiala (Brno University of Technology, Czech Republic); Radim Kadlec (Brno University of Technology, Czech Republic); Petr Drexler (Brno University of Technology, Czech Republic); Premysl Dohnal (Brno University of Technology, Czech Republic);*
- 09:40 The Instruments for Noise Spectroscopy  
*Petr Drexler (Brno University of Technology, Czech Republic); Pavel Fiala (Brno University of Technology, Czech Republic); Radim Kadlec (Brno University of Technology, Czech Republic); Radek Kubásek (Brno University of Technology, Czech Republic);*
- 10:00 **Coffee Break**
- 10:20 Electromagnetic Wave Propagation in Heterogeneous Structures  
*Radim Kadlec (Brno University of Technology, Czech Republic); Pavel Fiala (Brno University of Technology, Czech Republic); D. Nešpor (Brno University of Technology, Czech Republic);*
- 10:40 Errors in Diffusion Coefficients Measurement  
*Petr Marcon (Brno University of Technology, Czech Republic); Karel Bartušek (Brno University of Technology, Czech Republic);*
- 11:00 Measuring of Temperature Fields Using MR Tomography  
*Martin Čáp (Brno University of Technology, Czech Republic); P. Marcon (Brno University of Technology, Czech Republic); Karel Bartušek (Brno University of Technology, Czech Republic);*
- 11:20 3D Reconstruction in Magnetic Resonance Imaging  
*Jan Mikulka (Brno University of Technology, Czech Republic); Karel Bartušek (Brno University of Technology, Czech Republic);*
- 11:40 Magnetoinductive Lens for Experimental Mid-field MR Tomograph  
*Karel Bartušek (Brno University of Technology, Czech Republic); Petr Drexler (Brno University of Technology, Czech Republic); Pavel Fiala (Brno University of Technology, Czech Republic); Radim Kadlec (Brno University of Technology, Czech Republic); Radek Kubásek (Brno University of Technology, Czech Republic);*
- 
- Session 4A6**  
**Homogenization and Constitutive Parameter Extraction of Metamaterials**
- 
- Thursday AM, July 8, 2010**  
**Room F**
- Organized by Gennady Shvets, Robert V. Kohn  
Chaired by Gennady Shvets, Robert V. Kohn
- 
- 08:20 Magnetism and Homogenization of Microresonators  
*Robert V. Kohn (Courant Institute of Mathematical Sciences, New York University, USA); Stephen P. Shipman (Louisiana State University, USA);*
- 08:40 Sub-wavelength Plasmonic Crystals: Dispersion Relations and Effective Properties  
*S. P. Fortes (Louisiana State University, USA); Robert P. Lipton (Louisiana State University, USA); Stephen P. Shipman (Louisiana State University, USA);*
- 09:00 Homogenization of Arrays of Nanorods  
*Didier Felbacq (Université de Montpellier 2, France); Guy Bouchitte (Université de Toulon, France); A. I. Cabuz (University of Montpellier 2, France); Frédéric Zolla (Aix-Marseille Université 3, France); André Nicolet (Aix-Marseille Université 3, France);*
- 09:20 Random Dielectric Inclusions and Artificial Magnetism  
*Guy Bouchitte (Université de Toulon, France); Christophe Bourel (Université de Toulon, France); L. Manca (Université de Toulon, France);*
- 09:40 Contribution of Higher-order Multipole Radiation to Spatial Dispersion and Radiation Losses in Metamaterials  
*Andrea Alu (The University of Texas at Austin, USA);*
- 10:00 **Coffee Break**

- 10:20 Spatial Dispersion and Effective Constitutive Parameters of Electromagnetic Metamaterials  
*Gennady Shvets (The University of Texas at Austin, USA); Chris Fietz (The University of Texas at Austin, USA);*
- 10:40 Limitations in Homogenization of Thin (Meta)material Slabs  
*Henrik Kettunen (Aalto University School of Science and Technology, Finland); Jiaran Qi (Aalto University School of Science and Technology, Finland); Henrik Wallen (Aalto University School of Science and Technology, Finland); Ari Henrik Sihvola (Aalto University School of Science and Technology, Finland);*
- 11:00 Magnetoelectric Coupling Effects in Metamaterials  
*David R. Smith (Duke University, USA);*

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**Session 4P1**

**Dimensionality Reduction of Large Scale forward and Inverse EM Problems**

**Thursday PM, July 8, 2010**

**Room A**

Organized by Vladimir L. Druskin, Mikhail Zaslavsky

Chaired by Vladimir L. Druskin, Mikhail Zaslavsky

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- 13:20 A Parametric Level Set Method for Image Reconstruction  
*A. Aghasi (Tufts University, USA); Misha E. Kilmer (Tufts University, USA); Eric L. Miller (Tufts University, USA);*
- 13:40 Efficient Multigrid Methods for the Time-Harmonic Maxwell's Equations on Stretched Grids  
*Thomas Benson (Tufts University, USA); Scott MacLachlan (Tufts University, USA);*
- 14:00 A Butterfly Algorithm for Synthetic Aperture Radar Imaging  
*Laurent Demanet (Stanford University, USA);*
- 14:20 An Equivalence Theorem for Iterated Rational- and Vector-fitting  
*Dmitry Vasilyev (Massachusetts Institute of Technology, USA); Michael James Tsuk (Ansoft Corporation, USA); Jacob K. White (Massachusetts Institute of Technology, USA);*
- 14:40 Optimal Grids for Anisotropic Problems  
*Shari Moskow (Schlumberger Doll Research, USA); Vladimir Druskin (Schlumberger Doll Research, USA); Sergey Asvadurov (Schlumberger Doll Research, USA);*

15:00 **Coffee Break**

- 15:20 Characterization and Synthesis of the Response Function of Elastodynamic Networks  
*Fernando Guevara Vasquez (University of Utah, USA); Graeme W. Milton (University of Utah, USA); Daniel Onofrei (University of Utah, USA);*
- 15:40 Resistor Networks and Optimal Grids for Electrical Impedance Tomography with Partial Boundary Measurements  
*Liliana Borcea (Rice University, USA); Vladimir Druskin (Schlumberger Doll Research, USA); Alexander Mamonov (Rice University, USA); Fernando Guevara Vasquez (University of Utah, USA);*
- 16:00 Extended Krylov Subspace Methods for Transient Wavefield Problems  
*Rob F. Remis (Delft University of Technology, The Netherlands);*
- 16:20 A Thick-restart Krylov Subspace Method for Dimension Reduction of Large-scale Linear Descriptor Systems  
*Roland W. Freund (University of California, Davis, USA); Efrem B. Rensi (University of California, Davis, USA);*
- 16:40 Adaptive Rational Krylov Subspace Reduction for Solution of Time-domain Electromagnetic Problems  
*Mikhail Zaslavsky (Schlumberger Doll Research, USA); Vladimir Druskin (Schlumberger Doll Research, USA); Leonid Knizhnerman (Central Geophysical Expedition, Russia); Chad Lieberman (Massachusetts Institute of Technology, USA);*
- 17:00 Solution of Time-convolutionary Maxwell's Equations Using Krylov Subspace Reduction  
*Vladimir Druskin (Schlumberger Doll Research, USA); Mikhail Zaslavsky (Schlumberger Doll Research, USA);*

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**Session 4P2a**

**Optics, Fiber and Optical Waveguide**

**Thursday PM, July 8, 2010**

**Room B**

Chaired by Yun-Dong Zhang

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- 13:00 Interaction Dynamics of Solitons in a Linearly Coupled Ginzburg-Landau Equation with Cubic-quintic Nonlinearity  
*Daniel Royston Neill (The University of Sydney, Australia); Javid Atai (The University of Sydney, Australia);*

- 13:20 Modal Dispersion Characteristics of Different Cross Sectional Optical Waveguides  
*Yogendra Kumar Prajapati (Bundelkhand Institute of Engineering and Technology (BIET), India); Vivek Singh (Banaras Hindu University, India); Jai Prakash Saini (Bundelkhand Institute of Engineering and Technology, India); Alka Verma (BIET, India);*
- 13:40 Decline of Quantum Redundancy in a Thermal Environment  
*Srinivasa Chemudupati (Polytechnic Institute of NYU, USA); Vladimir Tsifrinovich (Polytechnic Institute of NYU, USA);*
- 14:00 The Transition between Superluminal and Subluminal for Optical Resonant Cavity  
*Yun-Dong Zhang (Harbin Institute of Technology, China); Jing Zhang (Harbin Institute of Technology, China); Xiangchun Ju (Harbin Institute of Technology, China); Ping Yuan (Harbin Institute of Technology, China); Yuhua Zhang (Harbin Normal University, China); Sheng Qiang (Harbin Institute of Technology, China);*
- 14:20 Observation of the Phase Shift and Group Delay in Nested Optical Fiber Ring Resonator  
*Yun-Dong Zhang (Harbin Institute of Technology, China); Jinfang Wang (Harbin Institute of Technology, China); Xiangchun Ju (Harbin Institute of Technology, China); Ping Yuan (Harbin Institute of Technology, China); Yuhua Zhang (Harbin Normal University, China); Sheng Qiang (Harbin Institute of Technology, China);*
- 14:40 Single-mode Waveguide Optical Isolation Based on Direction-dependent Mode Cut-off  
*Lingling Tang (Duke University, USA); Samuel M. Drezdzon (Duke University, USA); Pantana Tor-Ngern (Duke University, USA); Tomoyuki Yoshie (Duke University, USA);*
- 15:00 **Coffee Break**
- 
- Session 4P2b**  
**RF Biological Effect, Bioelectromagnetics**
- 
- Thursday PM, July 8, 2010**  
**Room B**  
Chaired by Jan Vrba
- 
- 15:20 Use of Pulse-driven Pico-Tesla Magnetoimpedance Sensor to Detect Cardiac Magnetic Activity on the Surface of the Human Chest  
*Shinsuke Nakayama (Nagoya University, Japan); Kenta Sawamura (Nagoya University, Japan); Kaneko Mohri (Nagoya Industrial Science Research Institute (NISRI), Japan); Tsuyoshi Uchiyama (Nagoya University, Japan);*
- 15:40 Differentiation of Human LAN-5 Neuroblastoma Cells by Electronically Transmitted Retinoic Acid (RA)  
*Alberto Foletti (Independent Researcher, Lugano, Switzerland); Settimo Grimaldi (Institute of Neurobiology and Molecular Medicine, CNR, Italy);*
- 16:00 A New Approach to Investigate Long-term Effects of RF Radiation on Cells  
*Andreas Daus (University of Applied Sciences Aschaffenburg, Germany); Michael Goldhammer (University of Applied Sciences Aschaffenburg, Germany); Ulrich Bochtler (University of Applied Sciences Aschaffenburg, Germany); Christiane Thielemann (University of Applied Sciences Aschaffenburg, Germany);*
- 16:20 Effects of Extremely Low Frequency Electromagnetic Fields on the Antioxidant Enzymes Activity of C3 and C4 Plants  
*Azita Shabrangi (Tehran Tarbiat Moallem University, Iran); Ahmad Majd (Islamic Azad University, Tehran North Branch, Iran); Masoud Sheidai (Shahid Beheshti University, Iran); Mohammad Nabyouni (Tehran Tarbiat Moallem University, Iran); Davod Dorrnian (Islamic Azad University, Iran);*
- 16:40 WI-FI Signal Exposure Effects on Developing Immune System of Young Mice  
*Ait-Aissa Saliha (University Bordeaux 1, France); Billaudel Bernard (University Bordeaux 1, France); Florence Poullietier De Gannes (University Bordeaux 1, France); Annabelle Hurtier (University Bordeaux 1, France); Emmanuelle Haro (University Bordeaux 1, France); Murielle Taxile (University Bordeaux 1, France); Axel Athané (University Bordeaux 1, France); Gilles Ruffie (ENSCP, France); Tongming Wu (Orange Labs, Research & Development, France); Joe Wiart (Orange Labs, Research & Development, France); Bernard Veyret (University Bordeaux 1, France); Isabelle Lagroye (University Bordeaux 1, France);*

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**Session 4P3**
**Novel Mathematical Methods in  
Electromagnetics 2**


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**Thursday PM, July 8, 2010**
**Room C**

 Organized by Kazuya Kobayashi, Yury V.  
Shestopalov

 Chaired by Kazuya Kobayashi
 

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- 13:20 Precursory Electric- and Magnetic-field Variations Analysed in Natural Time  
*E. S. Skordas (University of Athens, Greece); N. V. Sarlis (University of Athens, Greece); M. S. Lazaridou (University of Athens, Greece); P. A. Varotsos (University of Athens, Greece);*
- 13:40 Zero Reflection from a PEC Plate Coated by Double Zero (DZR) Metamaterials  
*Homayoon Oraizi (Iran University of Science and Technology, Iran); Ali Abdolali (Iran University of Science and Technology, Iran); Noushin Vaseghi (K. N. Toosi University of Technology, Iran);*
- 14:00 CIP-BS Method for Solving Maxwell's Equations  
*A. Noba (The University of Electro-Communications, Japan); Sato Murakoshi (The University of Electro-Communications, Japan); Yoshiaki Ando (The University of Electro-Communications, Japan);*
- 14:20 Analysis of Electromagnetic Guided Waves on Curved Conducting Biological Surface by Conformal Mapping Method  
*Yasumitsu Miyazaki (Aichi University of Technology, Japan);*
- 14:40 Signal Analysis of Electromagnetic Wave Propagation for RFID Systems in In-door and Out-door  
*Yasumitsu Miyazaki (Aichi University of Technology, Japan); Tadahiro Hashimoto (Synclayer, Inc., Japan); Koichi Takahashi (Aichi University of Technology, Japan);*
- 15:00 **Coffee Break**
- 15:20 Dimensional Effects on Electric Potentials and Fields in High-permittivity Thin Films and Interfaces  
*Rainer Dick (University of Saskatchewan, Canada);*
- 15:40 Mixed-impedance Boundary Conditions  
*Ismo V. Lindell (Aalto University, Finland); Ari Henrik Sihvola (Aalto University School of Science and Technology, Finland); Henrik Wallen (Aalto University School of Science and Technology, Finland);*

- 16:00 A Model for Electromagnetic Wave Scattering by Small Ferrite Particles with Magnetostatic-Vortex Resonances  
*Eugene O. Kamenetskii (Ben-Gurion University of the Negev, Israel);*
- 16:20 Solution of Axisymmetric Potential Problem in Spherical Coordinates Using Exodus Method  
*Omonowo D. Momoh (Prairie View A & M University, USA); Matthew N. O. Sadiku (Prairie View A & M University, USA); Cajetan M. Akujobi (Prairie View A & M University, USA);*
- 16:40 Exactly Solvable High-frequency Model of a Coil  
*Dierk Bormann (ABB AB — Corporate Research, Sweden);*
- 17:00 Perturbation Theory and FRA Sensitivity Analysis  
*Dierk Bormann (ABB AB — Corporate Research, Sweden);*

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**Session 4P4**
**Circuits and Devices, CAD**


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**Thursday PM, July 8, 2010**
**Room D**

 Chaired by Guangdong Pan
 

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- 13:00 Behavioral Modeling of Asymmetric Intermodulation Distortion of Nonlinear Amplifier  
*Ahmet Hayrettin Yuzer (Middle East Technical University, Turkey); S. Demir (Middle East Technical University, Turkey);*
- 13:20 Simultaneous and Synchronous Measurement of Even and Odd Order Nonlinear Distortion Terms  
*Stephen K. Remillard (Hope College, USA);*
- 13:40 YIG Thin Film Used to Fabricate a Coplanar Waveguide Circulator  
*Bassel Abdel Samad (Université de Saint-Etienne, France);*
- 14:00 Study of High Frequency Input Interference for Buck Converter  
*Mao Zhang (University of Central Lancashire, UK); Weiping Zhang (North China University of Technology, China); Zheng Zhang (North China University of Technology, China);*

- 14:20 A Novel Approach for Changing Bandwidth of FSS Filter Using Gradual Circumferential Variation of Loaded Elements  
*Sajid Muhaimin Choudhury (Bangladesh University of Engineering and Technology (BUET), Bangladesh); Mohammad Asif Zaman (BUET, Bangladesh); Md. Gaffar (BUET, Bangladesh); Md. Abdul Matin (Bangladesh University of Engineering and Technology (BUET), Bangladesh);*
- 14:40 A Compact Substrate Integrated Waveguide Band-pass Filter  
*Changjun Liu (Sichuan University, China); Kama Huang (Sichuan University, China);*
- 15:00 **Coffee Break**
- 15:20 CAD of Resonant Circular Iris Waveguide Filter with Dielectric Filled Cavities  
*Uma Balaji (Farmingdale State College, USA);*
- 15:40 On-chip Impedance-optimized Microstrip Transmission Line for Multi-band and Ultra-wide-band Microwave Applications  
*Wayne Woods (IBM Microelectronics, USA); Guoan Wang (IBM Microelectronics, USA); Hanyi Ding (IBM Microelectronics, USA); Shu Rong Dong (Zhejiang University, China);*
- 16:00 Wideband, High-linearity Low-noise Amplifier Design in Sub-micrometer CMOS Technology  
*Mousa M. Othman (Tokyo Institute of Technology, Japan); Shuhei Amakawa (Tokyo Institute of Technology, Japan); Noboru Ishihara (Tokyo Institute of Technology, Japan); Masu Kazuya (Tokyo Institute of Technology, Japan);*
- 16:20 Microstrip Resonator as a Measuring Device for a Single Molecule Magnet  
*Thomas Fan (Polytechnic Institute of NYU, USA); Vladimir I. Tsifrinovich (Polytechnic Institute of NYU, USA); Andrew D. Kent (New York University, USA);*
- 16:40 Modified Design of Branch-line Coupler for Harmonic Suppression  
*Jong-Sung Kim (Kyungsoong Univ, South Korea); Ki-Bok Kong (Informat & Commun Univ, South Korea);*

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**Session 4P5a**  
**Extended/Unconventional Electromagnetic Theory, EHD (Electro-hydrodynamics)/EMHD (Electro-magneto-hydrodynamics), and Electro-biology 2**

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**Thursday PM, July 8, 2010**

**Room E**

Organized by Eva Gescheidtová

Chaired by Pavel Fiala

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- 13:00 On Motional Emf  
*Anamitra Palit (Motijheel Housing Cooperative Society, India);*
- 13:20 Electromagnetic Sources and Observers in Motion III — Derivation and Solution of the Electromagnetic Motional Wave Equation  
*Selwyn E. Wright (ECASS Technologies Ltd., UK);*
- 13:40 Electromagnetic Sources and Observers in Motion IV — The Nature of Gravity and Its Effect on the Propagation Medium  
*Selwyn E. Wright (ECASS Technologies Ltd., UK);*
- 14:00 Recent Advances on Interior Permanent Magnet Motor Drives for Hybrid Electric Vehicles  
*Md. Azizur Rahman (Memorial University of Newfoundland, Canada);*
- 14:20 Matrix Converter Induction Motor Drive Employing Direct Torque Control Method  
*Jiri Lettl (Czech Technical University in Prague, Czech Republic); Dragan Kuzmanovic (Czech Technical University in Prague, Czech Republic);*
- 14:40 Some Consequences of the Non-constancy of the Speed of Light in Vacuum for Different Galilean Reference Systems  
*Namik Yener (Kocaeli University, Turkey);*
- 15:00 **Coffee Break**

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**Session 4P5b**  
**Propagation of Millimetre and Sub-millimetre Waves**

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**Thursday PM, July 8, 2010**

**Room E**

Organized by Stanislav Zvanovec

Chaired by Stanislav Zvanovec

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- 15:20 New Approach to Modeling of Diffuse Reflection and Scattering for Millimeter-wave Systems in Indoor Scenarios  
*Ludek Subrt (Czech Technical University in Prague, Czech Republic); Pavel Pechac (Czech Technical University in Prague, Czech Republic); Stanislav Zvanovec (Czech Technical University in Prague, Czech Republic);*
- 15:40 A Measurement System for Propagation Measurements at 300 GHz  
*Sebastian Priebe (Technische Universität Braunschweig, Germany); Christian Jastrow (Physikalisch-Technische Bundesanstalt, Germany); Martin Jacob (Technische Universität Braunschweig, Germany); Thomas Kleine-Ostmann (Physikalisch-Technische Bundesanstalt, Germany); Thorsten Schrader (Physikalisch-Technische Bundesanstalt, Germany); Thomas Kürner (Technische Universität Braunschweig, Germany);*
- 16:00 An Evaluation of Approaches for Modeling of Terrestrial, HAP and Satellite Systems Performance during Rain Events  
*Stanislav Zvanovec (Czech Technical University in Prague, Czech Republic); L. Subrt (Czech Technical University in Prague, Czech Republic); Pavel Pechac (Czech Technical University in Prague, Czech Republic);*
- 16:20 Gas Absorption Measurement of Selected Stratospheric Substances by Fabry-Perot Resonator  
*Petr Piksa (Czech Technical University, Czech Republic); Stanislav Zvanovec (Czech Technical University in Prague, Czech Republic); Petr Cerny (Czech Technical University in Prague, Czech Republic); J. Libich (Czech Technical University in Prague, Czech Republic); J. Varga (Institute of Chemical Technology, Czech Republic); J. Koubek (Institute of Chemical Technology, Czech Republic);*
- 16:40 Wave Propagation in Anisotropic Waveguides  
*Abdullah Eroglu (Indiana University — Purdue University, USA);*

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**Session 4P6**  
**Micro-/Nanoscale Metamaterials, Plasmonics**  
**and Other Hybrid Structures for**  
**Superresolution Imaging, Slow-light and**  
**Cloaking**

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**Thursday PM, July 8, 2010**

**Room F**

Organized by Bernard Didier F. Casse

Chaired by Bernard Didier F. Casse

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- 13:00 Optical Superresolution Imaging Using a Metallic Nanolens Made Up of Bulk Nanowires Metamaterial  
*Bernard Didier F. Casse (Northeastern University, USA); Wen Tao Lu (Northeastern University, USA); Y. J. Huang (Northeastern University, USA); E. Gul-tepe (Northeastern University, USA); Latika Menon (Northeastern University, USA); S. Sridhar (North-eastern University, USA);*
- 13:20 Design of Diffractive Optical Elements for Focusing Surface Plasmon Polaritons  
*Evgeni A. Bezus (Image Processing Systems Institute of the Russian Academy of Sciences, Russia); L. L. Doskolovich (Image Processing Systems Institute of the Russian Academy of Sciences, Russia); N. L. Kazansky (Image Processing Systems Institute of the Russian Academy of Sciences, Russia);*
- 13:40 Isotropic Non-ideal Cloaks Providing Improved Invisibility  
*Cheng-Wei Qiu (National University of Singapore, Singapore); Said Zouhdi (University Paris Sud, France);*
- 14:00 Transient Electromagnetic Field of an Electric Line Source above a Plane Drude Model Plasmonic Half-space  
*Bert Jan Kooij (Delft University of Technology, Netherlands);*
- 14:20 Two-dimensionally Isotropic Metamaterial  
*Abdelwaheb Ourir (ESPCI ParisTech, France); Redha Abdeddaim (ESPCI ParisTech, France); Julien de Rosny (Universite Paris 7, France);*
- 14:40 Slow Light in Plasmonic Metamaterials: The Double-Fano Resonance Approach  
*Gennady Shvets (The University of Texas at Austin, USA); Chih-Hui Wu (The University of Texas at Austin, USA); Alexander Khanikaev (The University of Texas at Austin, USA);*
- 15:00 **Coffee Break**



- 15:20 Anti-resonant Transparency with Plasmonic Shells  
*Andrea Alu (The University of Texas at Austin, USA);*  
*Nader Engheta (University of Pennsylvania, USA);*
- 15:40 In-plane Quadrupolar Plasmon Resonance in Triangular Metallic Nano-structures  
*Kin Hun Fung (University of Illinois at Urbana-Champaign, USA);* *Pratik Chaturvedi (University of Illinois at Urbana-Champaign, USA);*  
*Nicholas X. Fang (University of Illinois at Urbana-Champaign, USA);*
- 16:00 Optical Activity in Organic Metamaterials  
*Nantakan Wongkasem (University of Massachusetts, USA);* *C. Kamtongdee (Khon Kaen University, Thailand);*
- 16:20 Slow Light via Classical Electromagnetically-induced Transparency in Nanostructured Plasmonic Metamaterials  
*Vassilios Yannopapas (University of Patras, Greece);*  
*Emmanuel Paspalakis (University of Patras, Greece);*  
*Nikolay V. Vitanov (Sofia University, Bulgaria);*



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Should you be interested in organizing a session, please online fill out this PIERS Survey Form in PIERS web site at <http://emacademy.org> or <http://piers.org>.

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A1. For the next PIERS to be held on 20–23 March, 2011 in Marrakesh, MOROCCO,

( ) 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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| ( ) 10th PIERS1999 in Taipei    | ( ) 11th PIERS2000 in Cambridge | ( ) 12th PIERS2001 in Osaka     |
| ( ) 13th PIERS2002 in Cambridge | ( ) 14th PIERS2003 in Singapore | ( ) 15th PIERS2003 in Honolulu  |
| ( ) 16th PIERS2004 in Pisa      | ( ) 17th PIERS2004 in Nanjing   | ( ) 18th PIERS2005 in Hangzhou  |
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| ( ) 22nd PIERS2007 in Prague    | ( ) 23rd PIERS2008 in Hangzhou  | ( ) 24th PIERS2008 in Cambridge |
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# PIERS 2011 in Marrakesh

## Progress in Electromagnetics Research Symposium

20 – 23 March, 2011

Marrakesh, MOROCCO

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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    |

### PAPER SUBMISSION MUST BE RECEIVED BY 20 SEPTEMBER 2010

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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.

Please use On-Line-Submission (<http://piers.org>) to submit your contribution or via email ([tpc@piers.org](mailto:tpc@piers.org) and/or [piers@ewt.mit.edu](mailto:piers@ewt.mit.edu)) by attachments. Authors are recommended to use \*.tex, \*.doc, or \*.pdf as the file format. The abstract submission deadline is **20 September 2010** and the author pre-registration deadline is **20 November 2010**.

**Full-length Papers:** Author of an accepted abstract is invited to (but is not required to) submit a full-length paper of 4–5 pages. All full papers will be subject to a peer-review process. Only accepted and registered papers will be published in the final PIERS Proceedings and available online after the conference. Selected full-length papers will be published in **PIERS Online**. Please visit PIERS website for the latest PIERS sample files. The deadline for the submission of extended papers is **20 November 2010**.

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### PRESENTING AUTHORS MUST PRE-REGISTER BY 20 NOVEMBER 2010

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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 November 2010**. For students with valid identification, the non-refundable pre-registration fee is **US\$380**. Registration fee will be raised to **\$680** and **\$490** for students after **20 November 2010**. 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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Updated and detail information will be posted at <http://piers.org> and <http://emacademy.org>

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	<b>MONDAY AM 8:00 JULY 5</b>		<b>MONDAY PM 13:00 JULY 5</b>		<b>TUESDAY AM 8:00 JULY 6</b>		<b>TUESDAY PM 13:00 JULY 6</b>	
<b>ROOM A</b>	1A1 - Electromagnetic Modeling, Inversion and Applications 1		1P1 - Electromagnetic Modeling, Inversion and Applications 2		2A1 - EM Modeling and Inversion for Well Logging Applications		2P1 - Modeling and Inversion for Geophysical EM Applications	
<b>ROOM B</b>	1A2 - Remote Sensing and Polarimetry, SAR, GPR, Imaging		1P2a - Magnetic Based Composite Materials	1P2b - Scattering, Diffraction and Rough Surface Scattering	2A2 - Microspheres and Waves		2P2 - Electromagnetic Remote Sensing for Defense and Homeland Security	
<b>ROOM C</b>	1A3 - RF and Wireless Communication		1P3a - Static Magnetic Fields --- Biological Effects	1P3b - Applicators for Medical and Industrial Applications of EM Field	2A3a - Power Electronics	2A3b - Antennas and Array: Theory and Design 1	2P3 - Microstrip, Printed Antennas and Phase Array	
<b>ROOM D</b>	1A4 - Robust and Efficient Electromagnetic Solutions for Large-scale Problems		1P4 - Microwaves and Magnonics: Metamaterials, Antennas, Near-field Structures		2A4 - Electromagnetic Theory		2P4 - Computational Electromagnetics	
<b>ROOM E</b>	1A5a - Recent Advances in Numerical Methods for Maxwell's Equations	1A5b - Optical Properties of Semiconductors and Nanostructures 1	1P5 - Optical Properties of Semiconductors and Nanostructures 2		2A5 - Phase-Space Optics		2P5 - Theory and Modelling of Active Photonic Materials	
<b>ROOM F</b>	1A6 - Poster Session 1		1P6 - Poster Session 3		2A6 - Photonic Crystals and Metamaterials 1		2P6 - Photonic Crystals and Metamaterials 2	
<b>ROOM G</b>	1A7 - Poster Session 2		1P7 - Poster Session 4		2A7 - Poster Session 5		2P7 - Poster Session 6	

		<b>WEDNESDAY AM 8:00 JULY 7</b>	<b>WEDNESDAY PM 13:00 JULY 7</b>	<b>THURSDAY AM 8:00 JULY 8</b>	<b>THURSDAY PM 13:00 JULY 8</b>	
<b>ROOM A</b>		3A1 - Stochastic versus Deterministic Geophysical Inversions	3P1 - Optics and Photonics	4A1 - Nonlinear Inversion Approaches for Microwave Biomedical Applications	4P1 - Dimensionality Reduction of Large Scale forward and Inverse EM Problems	
<b>ROOM B</b>		3A2 - Radar Target Detection	3P2a - Microwave Non-destructive Evaluation 3P2b - Remote Sensing of the Earth, Ocean, and Atmosphere	4A2 - Forward and Inverse Algorithms for Microwave Remote Sensing of Soil Moisture with SMAP	4P2a - Optics, Fiber and Optical Waveguide	4P2b - RF Biological Effect, Bioelectromagnetics
<b>ROOM C</b>		3A3 - Antennas and Array: Theory and Design 2	3P3 - Antenna Array Synthesis --- Theory, Algorithms, and Applications	4A3 - Novel Mathematical Methods in Electromagnetics 1	4P3 - Novel Mathematical Methods in Electromagnetics 2	
<b>ROOM D</b>		3A4 - Microelectronic Packaging	3P4a - Approaches to EM Simulation and Modeling for 2D and 3D Chips in the Nanometer Domain 3P4b - Microwave Devices, Propagation	4A4 - New Horizons in Electromagnetic Compatibility and Personal Health Protection	4P4 - Circuits and Devices, CAD	
<b>ROOM E</b>		3A5 - Generation, Propagation and Applications for Special Laser Beams	3P5 - Biomedical Electromagnetic Instruments, Electromagnetic Condensed Materials and Imaging	4A5 - Extended/Unconventional Electromagnetic Theory, EHD/EMHD, and Electro-biology 1	4P5a - Extended/Unconventional Electromagnetic Theory, EHD/EMHD, and Electro-biology 2	4P5b - Propagation of Millimetre and Sub-millimetre Waves
<b>ROOM F</b>		3A6a - Photonic Crystals and Metamaterials 3 3A6b - EM Science and Design on The Optical Dispersive Metamaterials, Invisible Cloak and Photonic Crystals	3P6 - Inverse Scattering Problems: Open Problems and New Challenges	4A6 - Homogenization and Constitutive Parameter Extraction of Metamaterials	4P6 - Micro-/Nanoscale Metamaterials, Plasmonics and Other Hybrid Structures for Superresolution Imaging, Slow-light and Cloaking	