

PIERS 2008 Cambridge

Progress In Electromagnetics Research Symposium

Program

July 2–6, 2008
Cambridge, USA

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Progress In Electromagnetics Research Symposium
July 2–6, 2008
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
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- ☐ The Electromagnetics Academy

SYMPOSIUM SITE

The 2008 Progress in Electromagnetics Research Symposium will be held on July 2–6, 2008, at the Hyatt Regency Cambridge, Massachusetts, USA. During the symposium, the PIERS OFFICE will be located in the Hyatt Regency Cambridge.

REGISTRATION

The PIERS technical sessions will begin on Wednesday morning, July 2, 2008 at the Hyatt Regency Cambridge, Massachusetts, USA. You may register in the PIERS OFFICE Tuesday, July 1, from 13:00 to 18:00, or during the Symposium from 8:00 through 17:00, July 2–5, 2008.

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

SPECIAL EVENTS

Opening Reception

On Tuesday, July 1, 2008, from 18:30 to 20:30, symposium reception will take place at the Hyatt Regency Cambridge. For registered PIERS participant, the reception fee is free. For unregistered companions, the price is USD20 per person. Please make online reservation in advance at PIERS Website.

Symposium Banquet

On Friday evening, July 4, 2008, from 18:30 to 20:30, a 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 USD60 per person. Please make online reservation in advance and pay cash at PIERS check-in desk.

Memorial Session for Professor Jin Au Kong

In memory of Founding President of The Electromagnetics Academy, Founding Chair of PIERS, Professor Jin Au Kong, a special memorial session will be held.

- Date: July 4, 2008
- Time: 13:00 – 17:00
- Room: E (HAYM SALOMAN)

PIERS ONLINE

Information on PIERS 2008 Cambridge and future PIERS is posted at www.piers.org.

GUIDELINES FOR PRESENTERS

Oral Presentations

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

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

- **Presentation files format:**

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

- **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 Minutes Presentation Limits:**

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

- **DO NOT change presentation sequence:**

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

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

Poster Presentations

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 Hyatt Regency Cambridge. Online Reservation is available. Please visit PIERS 2008 website for detailed information. The information below is provided for your convenience.

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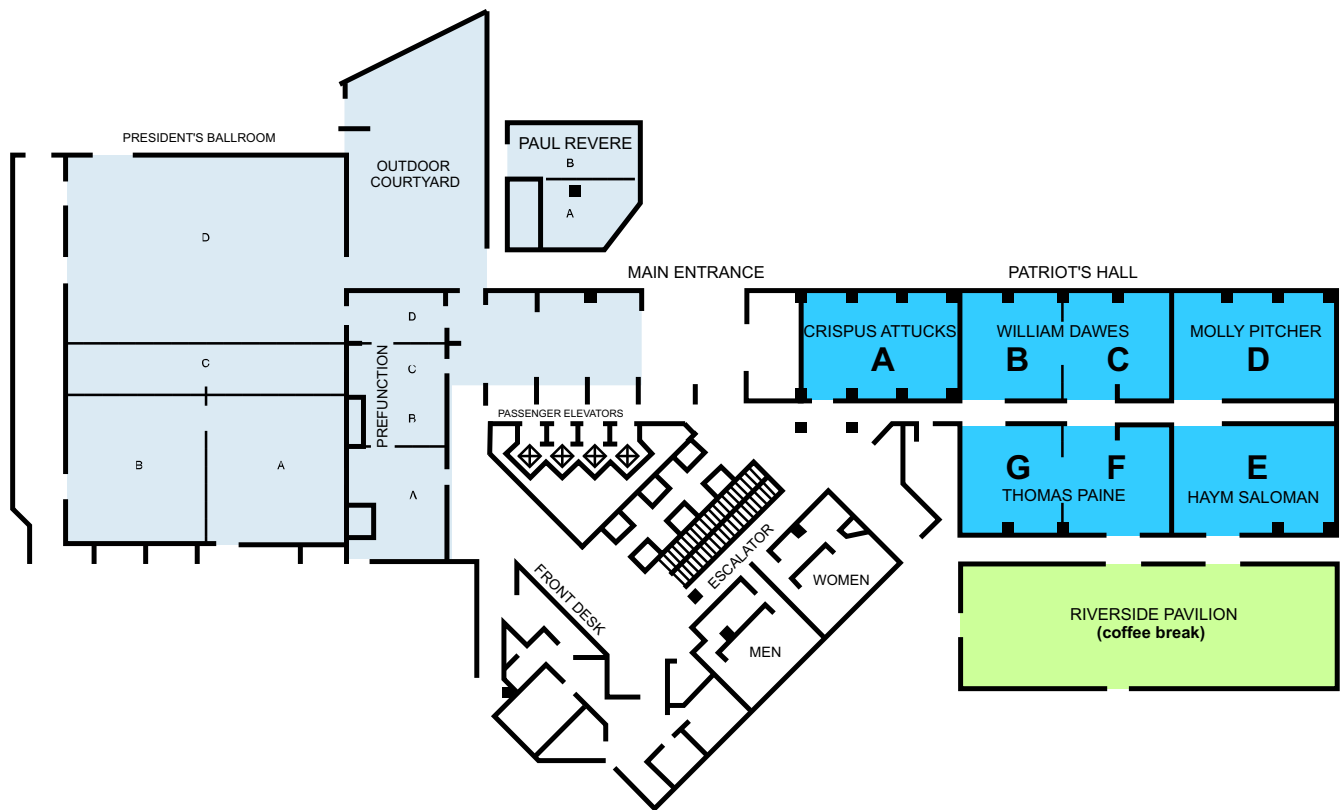
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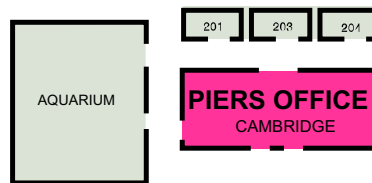
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MAP OF CONFERENCE SITE



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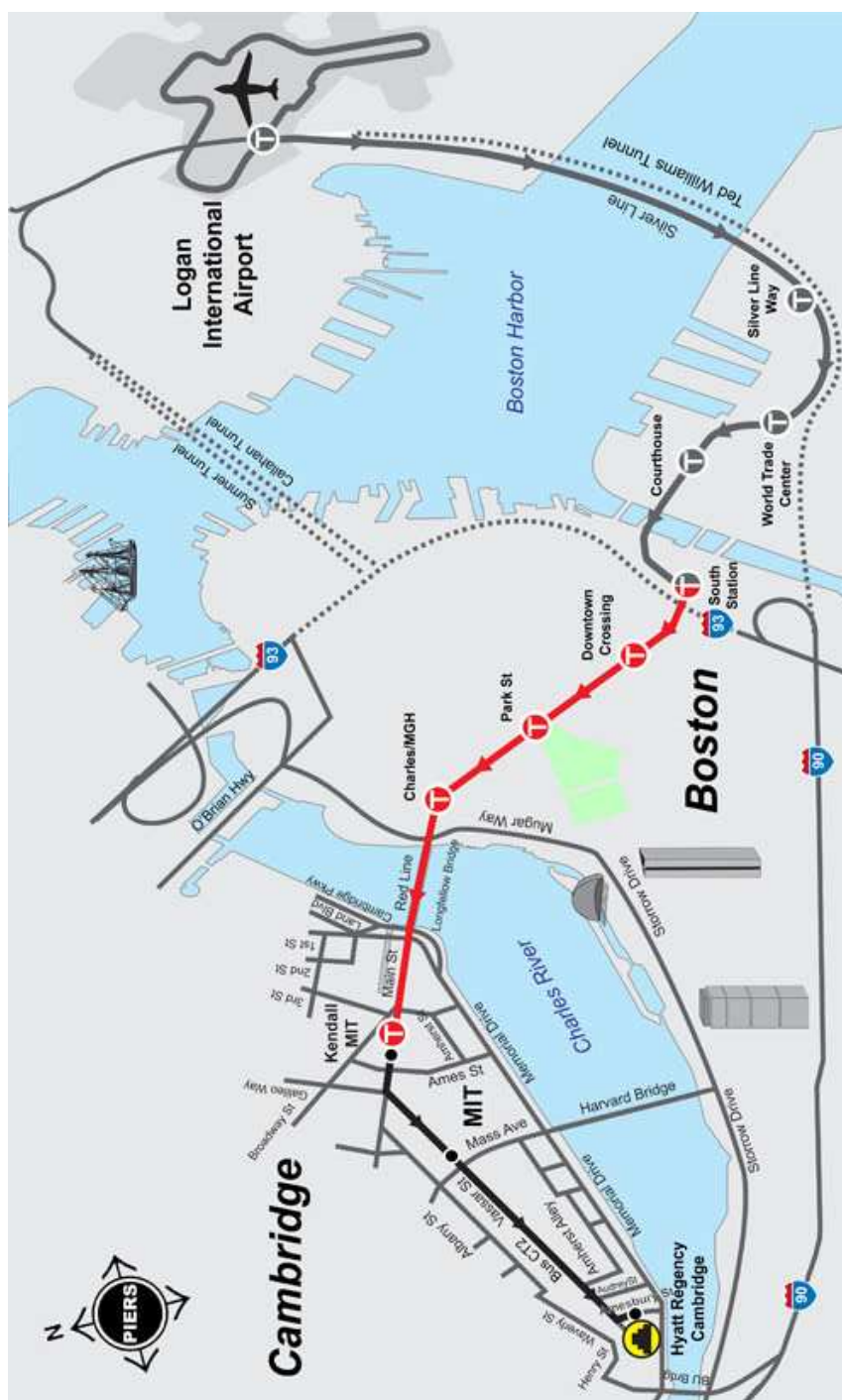


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MAP OF CITY



PIERS 2008 CAMBRIDGE TECHNICAL PROGRAM

Session 2A1

Efficient Electromagnetic Solvers for Large Problems

Wednesday AM, July 2, 2008

Room A

Organized by Jaideva C. Goswami

Chaired by Jaideva C. Goswami

- 08:20 Parallelization — Key to Solving Real-world Radiation, Scattering and EMI/EMC Problems Described by Large Number of Degrees of Freedom (DoFs)
Raj Mittra,
- 08:40 Fast CEM Solvers Based on Volume and Surface Integral Equations
Qing Huo Liu, Yun Lin, Chun Yu, Jun Ho Lee, Jian-guo Liu, Ergun Simsek,
- 09:00 Fast Solvers for 3D Finite-difference Modeling EM Logging Tools
Sofia Davydycheva, Vladimir Druskin, Mikhail Zaslavsky, Tarek M. Habashy, Leonid Knizhnerman,
- 09:20 A Mode-matching/Finite Element Hybrid Strategy for Analyzing Waveguide Discontinuities and Resonant Cavities
Alejandro Díaz-Morcillo, Ivan A. Mantilla-Gaviria, Juan V. Balbastre,
- 10:00 **Coffee Break**
- 10:20 On Improving Computation Efficiency of Finite Element Method in Designing Sensor for Geophysical Applications
Jaideva C. Goswami, Gerald N. Minerbo, Betty Rong,
- 10:40 Design of Frequency-domain EM Finite Elements for Geophysical Applications
David Pardo, Carlos Torres-Verdín, M. Paszynski, M. J. Nam,
- 11:00 An Efficient 3D Integral Equation Method for Computation of Electromagnetic Wavefields in a Layered Configuration Containing Inhomogeneous Objects
Peter M. van den Berg, Aria Abubakar, Tarek M. Habashy,

- 11:20 A Parallel, Fourier Finite-Element Formulation with an Iterative Solver for the Simulation of 3D LWD Measurements Acquired in Deviated Wells
David Pardo, M. J. Nam, Carlos Torres-Verdin, M. Paszynski,

Session 2A2

Remote Sensing

Wednesday AM, July 2, 2008

Room B

Chaired by Shigehisa Nakamura, Tarek M. Habashy

- 08:00 Dielectric Properties of Carbonate Rocks
Nikita V. Seleznev, Tarek M. Habashy, Austin Boyd, Mehdi Hizem, Ollivier Faivre,
- 08:20 Evaluation of the Scattering Matrix of Flat Dipoles Embedded in Multilayer Structures
Sidnei J. S. Sant'Anna, José Carlos da Silva Lacava, David Fernandes,
- 08:40 Radio Frequency Metrology for Mobile Atmospheric Pressure Plasma Devices
Victor John Law, Niall O'Connor, Stephen Daniels,
- 09:00 Monitoring of Satellite Thermal Pattern in Ocean Front Evolution
Shigehisa Nakamura,
- 09:20 A New Approach to Mars Ionosphere Characterisation
Marco Iorio, F. Fois, Riccardo Mecozzi, Giovanni Piccardi, Roberto Seu, E. Flamini,
- 09:40 Application of Modular Artmap for Landuse Image Classification
Chue-Poh Tan, Ka-Sing Lim, Chen-Change Loy, Weng-Kin Lai,
- 10:00 **Coffee Break**
- 10:20 A Millimeter-wave Vibrometer for Remote Acoustic Measurement
John A. Scales, Brian J. Zadler, Manoja D. Weiss, Martin L. Smith,

- 10:40 About Methods of Classification and Qualitative Interpretation of the Data of Remote Sensing of Water Surface
Ferdinant A. Mkrtchyan, V. F. Krapivin,
- 11:00 Remote Sensing of a Multiple Scale Sea Surface Using a Variational Technique
Ezekiel Bahar,

Session 2A3a
Interaction of Waves and Media

Wednesday AM, July 2, 2008

Room C

Chaired by Arthur D. Yaghjian, Peer Fischer

- 08:00 Tellegen Particles
Peer Fischer, Ambarish Ghosh,
- 08:20 Group Velocity in Lossless Bianisotropic Dispersive Media
Arthur D. Yaghjian,
- 08:40 Applications Based on Space Transformation Method by Using Bi-layered Isotropic Material
Jiangtao Huangfu, Dongxing Wang, Hongsheng Chen, Bae-Ian Wu, Lixin Ran, Jin Au Kong,
- 09:00 Electromagnetics in Minkowski Spacetime with Geometric Algebra: Applications to Moving Media
Marco A. Ribeiro, Carlos R. Paiva,
- 09:20 Soliton Transverse Instabilities in Nonlocal Nonlinear Media
Yuan Yao Lin, Ray-Kuang Lee, Yuri S. Kivshar,
- 09:40 Modulation Instabilities of Elliptical Solitons
Yuan Yao Lin, Ray-Kuang Lee,
- 10:00 **Coffee Break**

Session 2A3b
Electromagnetic Theory

Wednesday AM, July 2, 2008

Room C

Chaired by Yuan-Fang Tung, Arie Sheinker

- 10:20 Representation of Einstein's Relativity by Smith's Chart
C. F. Chen, Yuan-Fang Tung,
- 10:40 Fundamental Properties of DC Field Sensors
Ben-Zion Kaplan, Arie Sheinker, Uri Suissa,

- 11:00 A Toroidal Harmonic Representation of the Yukawa-potential Kernel for a Circular Cylindrical Source
Jerry P. Selvaggi, S. J. Salon, M. V. K. Chari,
- 11:20 Cerenkov Radiation in the Waveguide Filled with an Anisotropic Double-negative Medium
Zhaoyun Duan, Bae-Ian Wu, Jie Lu, Jin Au Kong, Min Chen,
- 11:40 Scatterer's Geometry Influence on 'Power-Law' Formula in Random Mixing Composites
Peiheng Zhou, Bae-Ian Wu, Jin Au Kong,

Session 2A4
Electromagnetic Modeling, Inversion and Applications 1

Wednesday AM, July 2, 2008

Room D

Organized by Ganquan Xie, Michael Oristaglio,
Jianhua Li

Chaired by Jianhua Li

- 08:00 GL Electromagnetic and Mechanical Uniform Coupled Modeling
Ganquan Xie, Jianhua Li, Feng Xie,
- 08:20 Modal-based Tomographic Imaging of Electrically Large Cells from Far Zone Observations
Ersel Karbeyaz, Carey M. Rappaport,
- 08:40 Diagnostic of Non Uniform Multi-conductor Transmission Lines
Marc Olivas Carrion, Nicolas Ravot, Adrien Lelong, Fabrice Auzanneau,
- 09:00 An Improved Forward Scattering Simulation Technique for Microwave Breast Imaging
Bijilash Babu, Marissa Condon,
- 09:20 Semi-analytic Mode Matching (SAMM) Algorithm Used to Compute Nearfield Scattering in Rough Lossy Ground from Dipole Sources
Ann W. Morgenthaler, He Zhan, Carey M. Rappaport,
- 09:40 Modeling Millimeter-wave Detection of Body Worn Explosives
Carey M. Rappaport, José A. Martínez Lorenzo, Richard Sullivan, Amanda Angell,
- 10:00 **Coffee Break**
- 10:20 Extending MAS/TSA Technique for Conducting Environments to Enhance Underwater UXO Discrimination
David G. Kakulia, Giorgi N. Ghvedashvili, Fridon Shubitidze,

- 10:40 Inverse Scattering by Signal Subspace and Level Set Methods
Edwin A. Marengo, Fred K. Gruber,
- 11:00 Early Detection and Characterization of Breast Tumors from Microwave Data Using a Level Set Technique
Natalia Irishina, Oliver Dorn, Miguel Moscoso,
- 11:20 Microwave Subsurface Sensing and Imaging Using Matlab-based FDFD Method
Qiuzhao Dong, Carey M. Rappaport,
- 11:40 3D Microwave Imaging Utilizing Two Interleaved Antenna Arrays: Initial Phantom Results
Paul M. Meaney, Qianqian Fang, Sherri D. Geimer, Margaret W. Fanning, Tian Zhou, Keith D. Paulsen,

Session 2A5
Poster Session 1

Wednesday AM, July 2, 2008

9:00 AM - 11:00 AM

Room E

- | | |
|--|---|
| <p>1 An Analysis of the Landau-Lifshitz Reaction Term in Classical Electrodynamics
<i>G. Ares de Parga,</i></p> <p>2 Electrical Resistivity Measurements and Behavior of High T_c Super Conductor by Using <i>Bi-Pb-Sr-Ca-CuO</i> System
<i>M. M. Ahmed, Mumtaz Humayun, N. M. Memon, I. Sajid,</i></p> <p>3 Analytical Method for Strip Line and Coplanar Waveguide on Compound Substrate
<i>Naoshi Ishimaru, Tomohito Fukuda, Kikuo Wakino, Y. D. Lin, Toshihide Kitazawa, Chih-Wen Kuo,</i></p> <p>4 Variational Method of Strip Lines on an Inclined Substrate
<i>Tomohito Fukuda, Naoshi Ishimaru, Kikuo Wakino, Y. D. Lin, Chih-Wen Kuo, Toshihide Kitazawa,</i></p> <p>5 Propagation, Time-reversal and Gain-removal Stabilization in Dispersive Media
<i>Maryam Jalalinia, Carey M. Rappaport,</i></p> <p>6 Validation and Calibration of a 3D Deterministic Simulation Software for Indoor Electromagnetic Propagation
<i>Marco Allegretti, Claudio Lucianaz, Riccardo Notarpietro, Giovanni Perona,</i></p> | <p>7 Convergence of Krylov Solvers and Choice of Basis and Weighting Set of Functions in the Moment Method Solution of Electrical Field Integral Equation
<i>Giovanni Angiulli, S. Tringali,</i></p> <p>8 An Improved Finite-difference Scheme for Parabolic Partial Differential Equations by Localized Conduction Coefficients
<i>Yih-Peng Chiou, C.-H. Du,</i></p> <p>9 Simulation of Relevant Process Variables for Electrochemical Etching
<i>R. Neugebauer, H. Knüpfer, K. Wolf, Hans-Juergen Roscher,</i></p> <p>10 Using Cavity Complexity to Reduce the Number of Traced Tubes Required in Predicting Backscatter
<i>Saeed M. Khan,</i></p> <p>11 Singular Analytical Integration for Efficient Volume Integral Equation Implementation
<i>F. J. Perez Soler, Fernando D. Quesada Pereira, Alejandro Alvarez Melcon, L. Peregrini,</i></p> <p>12 A Study on the Interference in Single Frequency Network and On-Channel Repeater
<i>Sung Woong Choi, Heon Jin Hong,</i></p> <p>13 A Novel Ultra-wideband Bandpass Filter
<i>I-Tseng Tang, Ding-Bing Lin, Chi-Min Li, Min-Yuan Chiu,</i></p> <p>14 Design of the Broadband Filter Using Dual-mode Resonator
<i>Jin-Sup Kim, Se-Hwan Choi, Kyu-Bok Lee,</i></p> <p>15 The Non-homogeneity of Permittivity in Microwave Dielectric Resonator
<i>Victor N. Egorov,</i></p> <p>16 Genetic Algorithms Applied to Microwave Filters Optimization and Design
<i>M. F. Jiménez Nogales, J. Pascual García, Juan Hinojosa, Alejandro Alvarez-Melcón,</i></p> <p>17 Design of LTCC UWB Antenna with Band Notch Characteristic
<i>Se-Hwan Choi, Ho-Jun Lee, Jong-Kyu Kim,</i></p> <p>18 Multi-scale Triangular Patch High Impedance Ground Planes to Improve the Bandwidth of Conformal Bow-tie Antennas — Fabrication
<i>Bora Cakiroglu, Peter J. Collins, Michael J. Havrilla, Kubilay Sertel, Andrew J. Terzuoli,</i></p> <p>19 Improved Bandwidth Conformal Bow-tie Antennas Printed on Multi-scale Triangular-patch High-impedance Ground Planes — Simulation
<i>Murat Dogrul, Peter J. Collins, Michael Saville, Kubilay Sertel, Andrew J. Terzuoli,</i></p> |
|--|---|

- 20 Design of Wideband Antenna with Resistive and Capacitive Loading
Sangbong Jeon, Chang-Hoi Ahn,

Session 2A6

Electromagnetic Compatibility 1

Wednesday AM, July 2, 2008

Room F

Organized by Marian Tadeusz Wnuk

Chaired by Marian Tadeusz Wnuk, Roman Kubacki

- 08:20 Novel Fractal Electromagnetic Bandgap Structures to Suppress Simultaneous Switching Noise in High Speed Circuits
Kuo-Chiang Hung, Ding-Bing Lin, Chin-Sheng Chang, Chun-Te Wu, I-Tseng Tang,
- 08:40 Assessment of Possible Health Risk from Electromagnetic Fields of Portable Radio Station Devices
Roman Kubacki, Jaromir Sobiech,
- 09:00 Free-space Optical Data Link Using Quantum Cascade Laser
Zbigniew Bielecki, W. Kolosowski, Janusz Mikolajczyk,
- 09:20 Multi-band Antenna with Minimalization of Radiation towards Head
Marian Wnuk, Roman Kubacki,
- 09:40 Usefulness of the Fresnel Approximation in the Field Distribution Calculations in the Vicinity of Mobile Base Station Antennas
Roman Kubacki, Marian Tadeusz Wnuk, Jarosław Kieliszek,
- 10:00 **Coffee Break**
- 10:20 The Amplitude Weighting Method of LFM Chirp Signals for Radar Application
Edward Sedek, Andrzej Milewski, Sylwester Gawor, Zbigniew Bielecki,
- 10:40 Electromagnetic Compatibility of the Military Handset with Hidden Authorization Function Based on MIL-STD-461D Results
Zbigniew Piotrowski, Leszek Nowosielski, Lech Zagożdżonki, Piotr Gajewski,
- 11:00 Thermal Design and Electromagnetic Capability Design of the Microwave Power Module
Jin Ling Zhang, Ying Hua Lu, Biao Yang, Rong Rong Li, Jinsheng Yang,

- 11:20 The Method of the Calculating of Frequency Characteristics of Image Gaining and Processing Systems
Konrad Maj, Grzegorz Stępień,

- 11:40 Improvement of Reverberation Chamber's Simulation: A Stochastic Collocation Approach
Fatou Diouf, P. Bonnet, S. Lalléchère, C. Chauvière, F. Paladian,

Session 2P1

Computer Aided Modeling, Design and Optimization

Wednesday PM, July 2, 2008

Room A

Organized by Vijay K. Devabhaktuni

Chaired by Vijay K. Devabhaktuni

- 13:20 Comparative Performance of Genetically Initialized Pattern Search Optimization Versus Particle Swarm Optimization Algorithm of Adaptive Beam Forming with the Linear Antenna Array Geometry
Fikret Tokan, Ufuk Özkaya, Filiz Güneş,
- 13:40 Analysis and Synthesis of the Microstrip Lines by Support Vector Regressors
Nurhan Türker Tokan, Filiz Güneş,
- 14:00 Support Vector Analysis of the Rectangular Patch Antenna
Nurhan Türker Tokan, Filiz Güneş,
- 14:20 A Novel Approach for Computing Shielding Effectiveness of Conductive Metal Sheets, against AC Magnetic Fields in IF Range in Industrial Environment
Fabrizio Dughiero, C. Greggio, Michele Forzan,
- 15:00 **Coffee Break**
- 15:20 Magnetic Anomaly Eigen-detection
Arie Sheinker, Nizan Salomonski, Boris Ginzburg, Lev Frumkis, Ben-Zion Kaplan,
- 15:40 A Comparison of Distortion Analyses Based on Volterra Series and Steady State Algorithm
Josef Dobeš,
- 16:00 Modeling a Transmission Interconnect by Optimal Number of Lumped Sections
Sudarshan R. Nelatury, M. N. O. Sadiku, Vijay K. Devabhaktuni,

Session 2P2**Theory, Modeling and Inversion of
Controlled-source Electromagnetic and
Magnetotelluric for Geophysical Applications****Wednesday PM, July 2, 2008****Room B**

Organized by Aria Abubakar, Tarek M. Habashy

Chaired by Aria Abubakar, Tarek M. Habashy

- 13:20 Rational Krylov Subspace Reduction for Solution of CSEM and MT Problems
Mikhail Zaslavsky, Vladimir Druskin, Leonid Knizhnerman,
- 13:40 Marine CSEM Data for Reservoir Production Monitoring: Feasibility and Initial Identification Results
Shaaban Bakr, Inga Berre, Martha Lien, Trond Mannseth,
- 14:00 On the Waveguide Effect in Marine CSEM
Lars O. Løseth, L. Amundsen,
- 14:20 Removal of Sea Surface Related Wavefields from CSEM Data
Peter M. van den Berg, Aria Abubakar, Tarek M. Habashy,
- 14:40 Preprocessing of Marine CSEM Data and Model Preparation for Frequency-domain 3D Inversion
J. J. Zach, F. Roth, H. Yuan,
- 15:00 **Coffee Break**
- 15:20 Regularized and Blocky 3D Controlled Source Electromagnetic Inversion
Rene-Edouard Plessix, P. van der Sman,
- 15:40 Conductivity Reconstruction from Marine Controlled Source Electromagnetic Data Using a 2.5D Model-based Inversion Algorithm
Maokun Li, Aria Abubakar, Tarek M. Habashy,
- 16:00 Joint Inversion of Marine CSEM and MT Data for Anisotropic Resistivity
Randall Mackie, William Rodi,
- 16:20 A Joint Inversion Algorithm for the Integration of Controlled-source Electromagnetic and Seismic Measurement Data
Wenyi Hu, Aria Abubakar, Tarek M. Habashy,
- 16:40 Integration of Electromagnetic, Seismic and Well Log Data to Characterize Hydrocarbon Reservoirs
Lucy MacGregor, Peter Harris, David Andreis,

Session 2P3**Electromagnetics Wave and Media: RF and
Microwave Applications including Emerging
Technologies for Future Wireless
Communication Systems****Wednesday PM, July 2, 2008****Room C**

Organized by Rachid Talhi

Chaired by Rachid Talhi

- 13:00 Anisotropic Turbulance Spectrum: Focus on Some Angular Scattering Properties of a Radiation
Rachid Talhi, A. Lebrere, Fumie Costen, J. Watermann,
- 13:20 Analysis of Complex SAR Raw Data Compression
Navneet Agrawal, K. Venugopalan,
- 13:40 THz Rectangular Patch Microstrip Antenna Design Using Photonic Crystal as Substrate
Aditi Sharma, Vivek K. Dwivedi, Ghanshyam Singh,
- 14:00 Novel PSD Function for Multipath Flat Fading Channels
Tao (Stephen) Feng, Timothy R. Field,
- 14:20 An Efficient BER Analysis of OFDM Systems with ICI Conjugate Cancellation Method
Vivek K. Dwivedi, Ghanshyam Singh,
- 14:40 Empirical Analysis of LCR on a Ku-band Satellite Link
Franklin Fondjo Fotou, P. F. Tiako, Kiyotaka Fujisaki, Mitsuo Tateiba,
- 15:00 **Coffee Break**
- 15:20 State-space Model for Multipath Flat Fading Channels
Tao (Stephen) Feng, Timothy R. Field,
- 15:40 A Free Access Mat with Ring Patch Resonators for IEEE 802.11 Series
Kunsun Eom, Hiroyuki Arai,
- 16:00 A Circularly Polarized Microstrip Ferrite Phase-shifter with Uneven Excitation
Sharif iqbal mitu Sheikh, M. M. Dawoud,
- 16:20 The Measurement of Angle-of-arrival of Microwave in a Task of Precision Landing of Aircraft
Igor B. Shirokov, Alexandra Ponyatenko, Olga Kulish,
- 16:40 On Line Wire Diagnosis by Modified Spread Spectrum Time Domain Reflectometry
Adrien Lelong, Marc Olivas Carrion, Virginie Degardin, Martine Lienard,

- 17:00 Comparative Studies on the Effect of Analog and Digital Phase Shifters on Shaped Beam Patterns Generated from Phased Arrays
M. Chakravarthy, G. Surya Narayana Raju, R. Sreehari Rao, R. Ramana Reddy,
- 17:20 Admittance Characteristics of Cross-slot Coupled *H*-plane Tee Junction
R. Ramana Reddy, G. Surya Narayana Raju,

Session 2P4

Electromagnetic Field in Optical Materials and EM Field Dispersion in Photonic Crystals

Wednesday PM, July 2, 2008

Room D

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

Chaired by Tzong-Jer Yang, Tong Kang

- 13:20 Coupling Theory of Asymmetric Photonic-crystal Waveguides
Chih-Hsien Huang, Wen-Feng Hsieh, Szu-Cheng Cheng,
- 13:40 Analysis of Homogeneous Optical Fibers with Irregular Boundaries
Serhend Arvas, Joseph R. Mautz, Ercument Arvas,
- 14:00 Anomalous Microwave Transmission in a Superconducting Periodic Multilayer Structure
Chien-Jang Wu, Tzong-Jer Yang,
- 14:20 Electromagnetic Field Energy in a Metamaterial Medium Consisting of Metallic Wires and Split-ring Resonators
Pi-Gang Luan,
- 14:40 The Layered Metamaterial with Parabolic Dispersion
Linfang Shen, Tzong-Jer Yang, Jin-Jei Wu,
- 15:00 **Coffee Break**
- 15:20 GL EM Modeling for Electromagnetic Wave Propagation in Helix Pipe Crystals and Structures
Ganquan Xie, Jianhua Li, Feng Xie, Lee Xie,
- 15:40 Critical Fields in Lithium Niobate Nano Ferroelectrics
Asis Kumar Bandyopadhyay, P. C. Ray, V. Gopalan,
- 16:00 A Potential-based Finite Element Method Based on Wave Scheme for Transient Maxwell's Equations
Tong Kang,

Session 2P5

Poster Session 2

Wednesday PM, July 2, 2008

2:00 PM - 4:00 PM

Room E

- 1 Design of Low-cost Microstrip Antennas for Glonass Applications
Daniel C. Nascimento, Ricardo Schildberg, José Carlos da Silva Lacava,
- 2 Design of a 2.5GHz Differential CMOS LNA
Xuan Chen, Quanyuan Feng, Shiyu Li,
- 3 A Novel Anti-collision Algorithm in RFID System
Shiyu Li, Quanyuan Feng,
- 4 10 GHz Two-stage Class A RF Power Amplifier in a 0.25 μm CMOS Process
Tanya Vanessa Franco Abaya, Marc D. Rosales,
- 5 Inductor Modeling Using 3D EM Design Tool for RF CMOS Process
Gian Paolo T. Mayuga, Marc D. Rosales,
- 6 On the Absolute Measure of Wavelengths in Telecommunications
Sara Lityuba Vesely, A. A. Vesely,
- 7 Compact Folded Dipole Antenna for DTV Signal Reception
Ding-Bing Lin, Shiao-Ting Wu, Chao-Hsiung Tseng,
- 8 Study on Radiation Characteristics of A Conical Conformal Phased Array
Yinsuo Song,
- 9 Application of a SPICE Model for Multiconductor Transmission Lines in Electromagnetic Topology
Haiyan Xie, Jianguo Wang, Ruyun Fan, Yinong Liu,
- 10 Pedagogical Considerations in EMC Education
Andrew Nafalski, Özdemir Göl,
- 11 Automation of a Clamp Mechanism for EMC Testing
Andrew Nafalski, Özdemir Göl,
- 12 An Analytical Characterization of Metal Foams for Shielding Applications
Onofrio Losito,
- 13 Estimation and Validation of Soil Moisture Using PALSAR Onboard ALOS over Mongolian Plateau
Takeo Tadono, Masanobu Shimada, Hideyuki Fujii, Ichiro Kaihotsu,
- 14 Classing and Extracting Information from Radar Images
Giovanni Angiulli, V. Barrile, G. M. Meduri, R. Pucinotti, S. Tringali,

- 15 Sparse, Active Aperture Imaging
John K. Schindler,
- 16 Wavelet Based Synthesis of Multifractal Rough Surface
Zhaorui Wang, Shan-Wei Lue,
- 17 Numerical Analysis of a Photonic Band Gap by a Multilayered Deep Dielectric Gratings
Taikei Suyama, Yoichi Okuno, Akira Matsushima,
- 18 A Pseudovariational Technique for the Phase Curve Reconstruction in Reflectarray Design
Giovanni Angiulli, S. Tringali,
- 19 Mixer Methodologies for On-chip RF Test in 0.25 Micron CMOS Process
Gian Paolo T. Mayuga, Marc D. Rosales,
- 20 The Darlington Amplifier Optimized for Wideband
Oleg V. Stukach,

Session 2P6a
Electromagnetic Compatibility 2

Wednesday PM, July 2, 2008

Room F

Organized by Marian Tadeusz Wnuk

Chaired by Marian Tadeusz Wnuk, Roman Kubacki

- 13:00 Modeling of the Coupling Mechanisms between Lightning and a Complex Telecommunication Network
Michael Troubat, Yannick Bourgeois, Ahmed Zeddani, Alain Reineix, Christophe Guiffaut,
- 13:20 Study of Electric Field Radiated by Wireless Systems in an Aircraft
Emmanuel Perrin, F. Tristant, Christophe Guiffaut, Alain Reineix, J.-P. Moreau,
- 13:40 A Simple Numerical Method to Calculate the Q-factor of a Cavity Containing Apertures
Guillaume Andrieu, Alain Reineix,
- 14:00 Minimum Phase Causal Reconstruction of a Class of Equalizers
Saeed Asgari, Michael Tsuk,

Session 2P6b
Advances in Numerical Methods for Photonics Simulation

Wednesday PM, July 2, 2008

Room F

Organized by G. Ronald Hadley

Chaired by G. Ronald Hadley

- 14:20 Analysis of Dielectric Waveguides with Open Boundaries
Hyoungsuk S. Yoo, Anand Gopinath,
- 14:40 Rigorous Theoretical Study of Local Density of States and Mode Localization in Two-dimensional Aperiodic Photonic Structures
Svetlana V. Boriskina, Ashwin Gopinath, Luca Dal Negro,
- 15:00 **Coffee Break**
- 15:20 Simulation of Non-ideal Pillar-type Cavities Using Finite Element Methods
F. Schmidt, Benjamin Kettner,
- 15:40 Modelling Microstructured Optical Fibres
Zheng-Gang Lian, Jim Wykes, Phillip Donald Sewell, Ana Vukovic, Trevor Mark Benson, Ella Bekker, Leonid Melnikov,
- 16:00 Nonlinear Switching Effects in Coupled Microphotonic Cavities
Bjorn Maes, K. Huybrechts, G. Morthier, Peter Bienstman, R. Baets,
- 16:20 Beam Propagation for Tapered Waveguides
G. Ronald Hadley,
- 16:40 Analysis of Band-gap Characteristics of Two-dimensional Periodic Structures by Use of a Time-domain Source-model Technique
Alon Ludwig, Yehuda Leviatan,
- 17:00 Simulation of Non-radially Symmetric Whispering Gallery Mode Resonators
Michael R. Watts,

Session 3A1
Electromagnetic Scattering and Absorption

Thursday AM, July 3, 2008

Room A

Organized by Sharhabeel Alyones

Chaired by Sharhabeel Alyones

- 08:00 In-SiP Integration of Electromagnetic Shields
Oussama Alilou, Jean-Luc Lefebvre, Philippe Descamps,
- 08:20 On Passive RCS Reduction for Planar Scatterers in a Metal Hull
B. Lars G. Jonsson,

- 08:40 A Closed Form for Mie Scattering of an Electromagnetic Generalized Gaussian Beam with Any Angular Extent
Nicole J. Moore, Miguel A. Alonso,
- 09:00 Numerical Solution for the Problem of Electromagnetic Scattering by a Thin Finite Conducting L-shape Wire
Sharhabeel Alyones, Muhammad S. Bawa'aneh, A. M. Alsmadi,
- 09:20 Study of Scattering by Two Conducting Cylinders Using S.W.C.I.P Method
Noemen. Ammar, Tarek Bdour, Taoufik Aguil,
- 09:40 Neural Network Modeling of Scattering Parameters from a Conducting Post in Rectangular Waveguide
Manidipa Bhattacharya, B. Gupta, Kiyotoshi Yasumoto, Hongting Jia,
- 10:00 **Coffee Break**
- 10:20 Preparation and Evaluation of Composite Electromagnetic Wave Absorbers Made of Fine Aluminum Particles Dispersed in Polystyrene Medium
Yoichi Wada, Norizumi Asano, Kenji Sakai, Shinzo Yoshikado,
- 10:40 Composite Electromagnetic Wave Absorber Made of Permalloy or Sendust and Effect of Sendust Particle Size on Absorption Characteristics
Kenji Sakai, Yoichi Wada, Shinzo Yoshikado,
- 11:00 Stimulated Raman Scattering of Extraordinary Electromagnetic Waves in Weakly Magnetized Plasma
Muhammad S. Bawa'aneh, H. M. EL-Nasser, Ghada Assayed, Sharhabeel Alyones, A. M. Alsmadi, S. Al-Awfi, M. Al-Sughayer,
- 11:20 Processing of Metallic Glassy Samples by Using Microwave Radiation
Dmitri V. Louzguine-Luzgin, V. D. Buchelnikov, G. Xie, S. Li, A. Inoue, N. Yoshikawa, K. Mashiko, S. Taniguchi, Motoyasu Sato,
- 11:40 Theoretical Investigations on Role of Various Elliptical Shapes for Efficient Microwave Processing of Materials
Tanmay Basak,

Session 3A2
Scattering by Ordered and Disordered Media:
Photonic Applications 1

Thursday AM, July 3, 2008

Room B

Organized by Gerard Berginc

Chaired by Gerard Berginc, Alexei Maradudin

- 08:20 Manipulating the Transmission and Scattering of EM Waves from Sub-wavelength Microstructures (Ordered and Disordered) by Application of a Strong dc Magnetic Field
Yakov M. Strelniker, David J. Bergman,
- 08:40 Electromagnetic Wave Scattering from a Random Layer with Rough Interfaces I: Multiple Scattering Theory
Gerard Berginc, Claude Bourrely,
- 09:00 Electromagnetic Wave Scattering from a Random Layer with Rough Interfaces II: Numerical Experiments
Gerard Berginc, Claude Bourrely,
- 09:20 Localization and Propagation of Light in a Disordered Waveguide System
Akira Komiyama,
- 09:40 Plasmonic Effects in Dynamic Tunable Metal-dielectric Composites
Yu-Yang Feng, Morten Willatzen,
- 10:00 **Coffee Break**
- 10:20 Surface Plasmons and Quasi-periodic Nanohole Arrays
Cyriaque Genet, F. Przybilla, Thomas W. Ebbesen,
- 10:40 Permittivity of Nanostructured Silver in Optical Metamagnetics
Alexander V. Kildishev, Vladimir P. Drachev, Uday K. Chettiar, Hsiao-Kuan Yuan, Wenshan Cai, Vladimir M. Shalaev,
- 11:00 Wave Scattering by Multi-valued Random Surfaces
Valerian I. Tatarskii,
- 11:20 The Design of Random Surfaces That Produce Non-standard Refraction of Light
Tamara A. Leskova, A. Alexei Maradudin,

Session 3A3**Mobile Antennas, RF and Wireless Communication****Thursday AM, July 3, 2008****Room C**

Chaired by Rajeev Bansal, Saeed M. Khan

- 08:00 Investigation of Pear-shaped Monopole Antenna
Giorgi N. Ghvedashvili, D. G. Kakulia, Kakhaber N. Tavzarashvili, T. L. Gogua,
- 08:20 Numerical and Experimental Investigation of the Characteristics of a High Gain Wi-Fi Antenna
Saeed M. Khan,
- 08:40 Design of Multiband Balanced Folded Dipole Antenna Based on a Dual-arm Structure for Mobile Handsets
Dawei Zhou, Raed A. Abd-Alhameed, Chan H. See, Peter S. Excell,
- 09:00 Wideband Loaded Wire Bow-tie Antenna for Near Field Imaging Using Genetic Algorithms
S. W. J. Chung, Raed A. Abd-Alhameed, Chan H. See, Peter S. Excell,
- 09:20 A Novel CPW-fed Bow-tie Slot Antenna for 5.8 GHz RFID Tags
Fei Lu, Quanyuan Feng, Shiyu Li,
- 09:40 A Mode Based Model for Radio Wave Propagation in Storm Drain Pipes
Ivan L. Howitt, Muhammad Safeer Khan, Jumanah Shireen Khan,
- 10:00 **Coffee Break**
- 10:20 Active Quasi-circulator for Wireless Communication
Wai Yin Mung, Wing Shing Chan,
- 10:40 Unequally Biased Amplifier with Enhanced Efficiency
Tik Shun Leung, Wing Shing Chan,
- 11:00 Handset Beamforming Synthesis Using PSO for 4G Mobile Communication Systems
Korany R. Mahmoud, M. El-Adawy, Sabry M. M. Ibrahim, Rajeev Bansal, S. H. Zainud-Deen,
- 11:20 A New Call Handoff Technique for Next Generation Systems
Partha Pratim Bhattacharya, Manidipa Bhattacharya,

Session 3A4**Electromagnetic Modeling, Inversion and Applications 2****Thursday AM, July 3, 2008****Room D**

Organized by Ganquan Xie, Michael Oristaglio, Jianhua Li

Chaired by Jianhua Li

- 08:00 A GLEMFCSC Coupled Modeling and Inversion for Ice-ing Disaster on High Voltage Lines
Ganquan Xie, Jianhua Li, Feng Xie,
- 08:20 Validation of 2D FDTD Ground Penetrating Radar Modeling for Bridge Deck Evaluation by 3D FDTD
He Zhan, K. Belli, S. Wadia-Fascetti, Carey M. Rappaport,
- 08:40 Characterization of a GPR Antenna for Excitation of a 2D Finite-difference Time Domain Model of Reinforced Bridge Decks
Kimberly Belli, Carey M. Rappaport, S. Wadia-Fascetti,
- 09:00 Detecting Tunnels and Monitoring Internal Motion Using Cross-well Radar
Arvin M. Farid, Karen Cui, Edward Vaisman, Jose Angel Martinez Lorenzo, Carey M. Rappaport,
- 09:20 Using Circular Support Information for Microwave Imaging
Raphaël Lencrerot, Amélie Litman, Hervé Tortel, Jean Michel Geffrin,
- 09:40 Analysis of Electromagnetic Susceptibility Data
Hai-Tao Cai, Jianshu Luo,
- 10:00 **Coffee Break**
- 10:20 The Computation of Electromagnetic Field on Torus Knots
Jianshu Luo, Xufeng Zhang,
- 10:40 Analysis of a 1:2 Rectangular Waveguide Power Divider for Phased Array Application Using Multiple Cavity Modeling Technique
Debendra Kumar Panda, Ajay Chakraborty,
- 11:00 Electromagnetic Green's Function in Spherical or Cylindrical System
Jianhua Li, Ganquan Xie, Lee Xie,
- 11:20 Localization of 2D PEC Scatterers by a Multi-bistatic Stepped Frequency Radar
Adriana Brancaccio, Colomba Di Dio, Giovanni Leone,

Session 3A5
Poster Session 3

Thursday AM, July 3, 2008

9:00 AM - 11:00 AM

Room E

- 1 Retrieval of Higher Order Ocean Wave Spectra from Sunlint
Geoff P. Cureton, Stuart J. Anderson, M. J. Lynch, B. T. McGann,
- 2 Monitoring of Satellite Thermal Pattern of Ocean Front between Coastal and Ocean Water
Shigehisa Nakamura,
- 3 Radar Cross Section of Simple and Complex Targets in the C-band: A Comparison between Anechoic Chamber Measurements and Simulations
Mauro A. Alves, Inácio M. Martins, Marcelo A. S. Miacci, Mirabel C. Rezende,
- 4 Angular Radiation of Gold Nanoshells
Ying Hu, Rebekah Drezek,
- 5 Analysis of Two-dimensional Scattering by a Periodic Array of Conducting Cylinders Using the Method of Auxiliary Sources
Naamen Hichem, Taoufik Aguil,
- 6 The Study of Electromagnetic Wave's Absorbing in Micro-periodical Structure
Yan Zhou,
- 7 Scattering by Lossless Double-negative Metamaterial Slabs
Gianluca Gennarelli, Giovanni Riccio,
- 8 Mie Resonances in Small Particles with Electric and Magnetic Properties
Braulio García-Cámara, Fernando Moreno, Francisco González, José María Saiz, Gorden Videen,
- 9 Light Scattering by Interacting Electric and Magnetic Polarizable Particles
Olivier Merchiers, Fernando Moreno, Francisco González, José María Saiz,
- 10 Fractal Cantor Multilayer in Rectangular Metal Waveguide
Francesco Chiadini, Vincenzo Fiumara, I. Gallina, S. T. Johnson, Antonio Scaglione,
- 11 Rectangular Junction Ferrite Component in Millimeter Waves
D. Vincent,

- 12 Modelling SIW Resonators Using Support Vector Regression Machines
Giovanni Angiulli, D. de Carlo, S. Tringali, Giandomenico Amendola, E. Arneri,
- 13 Microwave Unpolar Organic Reactions Using Microwave Absorber
Chunyan Huo, Jianhua Chen, Haisheng Xu, Dong Shen,
- 14 Direct Observation of Higher-order Whispering-gallery Modes in a Defect-free Surface Micro-structure VCSEL
Chih-Yao Chen, Yuan Yao Lin, Tsin-Dong Lee, Ray-Kuang Lee,
- 15 Surface-structure-assisted Unidirectional Lasing from a Deformed VCSEL
Chih-Yao Chen, Yuan Yao Lin, Tsin-Dong Lee, Ray-Kuang Lee,
- 16 A Novel Broadband Compact Circular Disk Microstrip Antenna for Wireless Applications
Husam El-Din Ahmed Osman, Esmat Abdel-Fattah Abdallah, Abdel-Hamid Abdel-Rhim,
- 17 Parametric Amplification of Space Charge Waves in n-GaN Film
Abel García-Barrientos, Volodymyr V. Grimalsky,
- 18 Miniaturized Bandpass Filter with Self-biased Magnetic Films
Guomin Yang, Andrew Daigle, Xing Xing, Jianwei Wang, Nian-Xiang Sun,
- 19 On the Scattering of Ultra-wideband Signals from Objects behind Opaque Structures
Xiaoyang Huang, Hong-Liang Cui, Ke Wang,
- 20 Seawater pH Monitoring Using Long Period Grating Sensors
Ke Wang, Denis Klimov, Zbigniew Kolber,

Session 3A6
Photonics, Plasmonic & Nano Scale
Electromagnetic

Thursday AM, July 3, 2008

Room F

Chaired by Er Ping Li, Bernard Didier F Casse

- 08:00 Different Unexpected Squeezing of Light in the Short and Long Chain of Coupled Silver Nanowires
Hong-Song Chu, W.-B. Ewe, E.-P. Li,
- 08:20 Cavity-modulated Resonant Tunneling Effects of Surface Plasmon Polaritons
Yung-Chiang Lan, Chang-Che Jung, Peng-Hsiao Lee,

- 08:40 Dispersive Properties and Superluminal Propagation of Surface Plasmon Polaritons in Linear Chains of Metallic Nanoshperoids
Alexander A. Govyadinov, Vadim A. Markel,
- 09:00 Artifacts in Near-field Scanning Optical Microscope Spectroscopy and Imaging of Nanoparticles
Shih-Hui Chang, Yun-Chorng Zhang,
- 09:20 Observation of Coulomb Noises Assisted Single-electron Tunnel in Nanopillar Transistor
Yue-Min Wan, S. Y. Chen, C. A. Chen, H. C. Hsu,
- 09:40 Vibrations and Mechanically-induced Electrical Currents in Nanopillars Transistor
Yue-Min Wan, Hein-Tien Lin, Chih-An Chen, Hsiang-Chen Hsu,
- 10:00 **Coffee Break**
- 10:20 Design of Electrical and Optical Parameters of Photonic Crystal-based Chromatic Dispersion Compensator
C. E. Png, Er Ping Li, Soon Thor Lim, Gi-Ho Park,
- 10:40 Alternative Routes to Engineer Negative-index Optical Elements for Future Optoelectronics Systems
Bernard Didier F Casse, R. K. Banyal, W. Lu, S. Selvarasah, Y. J. Huang, Mehmet Dokmeci, Srinivas Sridhar,
- 11:00 Experimental Investigation of Transformer Coupled Toroidal Discharges
Igor Maksimovich Ulanov, Mikhail Vitalievich Isupov, A. Yu. Litvinsev,
- 11:20 Lateral Displacements of an Electromagnetic Beam Transmitted and Reflected from a Gyrotropic Slab
Hui Huang, Yu Fan, Bae-Ian Wu, Jin Au Kong,
- 11:40 Ultra-short Photonic Crystal All-optical Switch
Armaghan Eshaghi, S. Mahdi Moghadasi,

Session 3A7a
Terahertz Theory, Measurements, and Applications

Thursday AM, July 3, 2008

Room G

Organized by Lisa Marie Zurk

Chaired by Lisa Marie Zurk

- 08:00 Detection and Classification of Explosives Using Terahertz Synthetic Aperture Spectroscopic Imaging
John F. Federici, Yew Li Hor, Ivan Zorych, Zhiwei Liu, Zoi-Heleni Michalopoulou, Robert B. Barat, Dale E. Gary,

- 08:20 Near-field THz Microscopy with Conical Dielectric Probes
Manoja D. Weiss, Scott Schafer, John A. Scales,
- 08:40 Particle-in-cell Simulation of a Novel High Power Terahertz Vacuum Electron Device
Hai Zhang, Jianguo Wang, Changjiang Tong,
- 09:00 THz Scattering from Random Rough Surfaces
Scott Schecklman, Garth Sundberg, Lisa M. Zurk, Antao Chen, Mohammad Hassan Arbab,
- 09:20 3D Scattering by Large Inhomogeneous 2D Objects: Validation of a Full-wave 2.5D VIE Solver with Millimeter-wave Gaussian Beam and Microwave Experiments
Sara van den Bulcke, Ann Franchois, Jean Michel Geffrin, Lixiao Zhang, Johan Stiens,
- 09:40 Bow-tie Wideband Antenna Design for CW THz Photonic Transmitters
Jamal Zbitou, Christophe Minot, Xavier Begaud, Bernard Huyart,
- 10:00 **Coffee Break**

Session 3P1
Computational Electromagnetics

Thursday PM, July 3, 2008

Room A

Chaired by Weng Cho Chew, Hao Gang Wang

- 13:00 Multilevel Green's Function Interpolation Method Using Novel Partitioning Techniques for Modeling Composite Metallic and Dielectric Objects
Yan Shi, Hao Gang Wang, Long Li, Chi Hou Chan,
- 13:20 Accurate Field Distribution Models for RFID Applications Using Hybrid Computational Electromagnetics Techniques
Raed A. Abd-Alhameed, Peter S. Excell, Chan H. See, Dawei Zhou, K. N. Ramli,
- 13:40 Time Domain Modeling of Invisible Electromagnetic Shells
Cedric Blanchard,
- 14:00 Variational Integrators for Maxwell's Equations with Sources
Ari Stern, Yiyong Tong, Mathieu Desbrun, Jerrold E. Marsden,
- 14:20 Efficient Evaluation of 2D Sommerfeld Integrals Encountered in the Dielectric Half-space Problem by Use of Numerically Determined Steepest-descent Paths
Amit Hochman, Yehuda Leviatan,

- 14:40 Formulation of the MoM in Space Domain with Two Sets of Basis Functions to Analyze a Microstrip Transmission Lines
M. Bassem Ben Salah, Chaker Essid, Abdelaziz Samet,
- 15:00 **Coffee Break**
- 15:20 Mesh-free Waveguide Mode Computation
Klaus Krohne, Gi-Ho Park, Erping Li,
- 15:40 Development, Characterization and Simulation of Flexible Single-Layer X-Band Microwave Absorbers Based on Conducting Polyaniline
Luiza de C. Folguera, Mauro A. Alves, Marcelo B. Perotoni, Mirabel C. Rezende,
- 16:00 Efficient Numerical Strategy for the Coupling of the Fast Multipole Method and a Microlocal Discretization for Maxwell's Equations
E. Darrigrand, L. Gatard, Katherine Mer-Nkonga,
- 16:20 A New Scheme for PML Type Absorbing Boundary Condition Applying Uniaxial-pseudo Propagation Technique for Multi-dimensional Wave Analysis
Kensuke Sasaki, Yukihiisa Suzuki,
- 16:40 A Simple and Efficient Implementation of the Well-conditioned Electric-field Integral Equation
Xin-Qing Sheng, Chu-Qiang Deng,

Session 3P2a
Scattering by Ordered and Disordered Media: Photonic Applications 2

Thursday PM, July 3, 2008
Room B

Organized by Gerard Berginc

 Chaired by Gerard Berginc, Alexei Maradudin

- 13:20 Full-wave Modeling of Experimental Random Metal Films
Piotr Nyga, Uday K. Chettiar, Mark D. Thoreson, Zhengtong Liu, Vladimir P. Drachev, Alexander V. Kildishev, Vladimir M. Shalaev,
- 13:40 High-resolution Population Density Imaging of Random Scatterers through Cross-spectral Coherence in Matched Filter Variance
Mark Andrews, Zheng Gong, Daniel Cocuzzo, Purnima Ratilal,
- 14:00 1D Magnetophotonic Crystals Exhibiting Optical Tamm States
Taichi Goto, Alexander V. Baryshev, Mitsuteru Inoue, Alexander M. Merzlikin, Alexey P. Vinogradov, Alexander B. Granovsky,

- 14:20 A New Fully Automated Setup for 3D Infrared Wide Band BSDF Measurements and Application to BSDF Models
Thomas Lanternier, Marie Cerisier, Laure Eupherte, Olivier Gilbert,

15:00 **Coffee Break**

Session 3P2b
3D Electromagnetic Imaging for Geophysical Applications

Thursday PM, July 3, 2008
Room B

Organized by Gregory A. Newman

 Chaired by Gregory A. Newman

- 15:20 3D Magnetotelluric Imaging for Geothermal Resource Assessment at Glass Mountain, California
Randall Mackie, William Cumming,
- 15:40 The Influence of Electrical Anisotropy in 3D Marine CSEM Surveys
Gregory A. Newman, Micheal Commer,
- 16:00 Three-dimensional Combined Inversion of Marine Controlled-source and Magnetotelluric Data
Micheal Commer, Gregory A. Newman,
- 16:20 Forward and Inverse Models of Electromagnetic Scattering from Layered Media with Slightly Rough Interfaces
Alireza Tabatabaenejad, Mahta Moghaddam,
- 16:40 Inversion Study of a Large Marine CSEM Survey
James J. Carazzone, Tom Allen Dickens, Kenneth E. Green, Charles Jing, Leslie A. Wahrmond, Denny E. Willen, Micheal Commer, Gregory A. Newman,
- 17:00 Numerical Reconstruction of Permeability Material Using 3-D T - Ω Formulation of Finite Element Method
Faleh Yassine, E. Chaker, Khebir Ahmed, K. B. Ammar, S. Abdelaziz,

Session 3P3
Antenna Theory and Microstrip Antennas

Thursday PM, July 3, 2008
Room C

 Chaired by Carey M. Rappaport, Dayalan Prajith Kasilingam

- 13:00 Symbolic Derivation of Spectral Green's Functions for Anisotropic Multilayer Structures
Ildefonso Bianchi, J. C. da S. Lacava,
- 13:20 Array Synthesis by Using Singular Value Decomposition
José A. Martínez Lorenzo, Carey M. Rappaport, Johanna M. LoTempio,
- 13:40 SVD-beam-shaping Synthesis Method
Borja González Valdés, José A. Martínez Lorenzo, Antonio García Pino, Carey M. Rappaport,
- 14:00 Design Optimization of an Inverted V-dipole
Johanna M. LoTempio, José Angel Martínez-Lorenzo, Carey M. Rappaport, Herbert Aumann,
- 14:20 Design of Beam Steering Antenna Array for RFID Reader Using Fully Controlled RF Switches
Dawei Zhou, Raed A. Abd-Alhameed, Peter S. Excell, Chan H. See, Musa M. Abusitta, Y. F. Hu, S. M. R. Jones, Neil J. McEwan,
- 14:40 Performance Analysis of Wearable Microstrip Antennas with Low Conductivity Materials
Erdem Yilmaz, Dayalan Prajith Kasilingam,
- 15:00 **Coffee Break**
- 15:20 Optimization Using Surrogate Models in Materials-based Electromagnetic Design
Orkun Karabasoglu, Gullu Kiziltas,
- 15:40 The Design and Optimization of Planar LPDAs
Ahmad A. Gheethan, Dimitris E. Anagnostou,
- 16:00 Radiation Efficiency of the Metamaterial Zero-order Resonator Antenna
David Vrba, Milan Polívka,
- 16:20 Application of the Neural Network to the Synthesis of Vertical Dipole Antenna over Imperfect Ground
Rached Salem,
- 16:40 Design of Four Iterative Circular Shaped Fractal Antenna for Wireless Applications
Raj Kumar, Yogesh Thakare, Mahesh Barari,
- 17:00 Low-sidelobe Microstrip Array with Circular Polarization for RFID Application
Zhu Sun, Shun-Shi Zhong, Xiao-Rong Tang, Kuang-Da Chen,

Session 3P4
Plasmonics, Metamaterials, and
Magneto-Optics

Thursday PM, July 3, 2008

Room D

Organized by Yakov M. Strel'niker, David J. Bergman

Chaired by Yakov M. Strel'niker, David J. Bergman

- 13:00 Manipulating the Properties of a Meta-material by Applying a Strong Magnetic Field
Yakov M. Strel'niker, David J. Bergman,
- 13:20 The Magnetic Manipulation of Surface Plasmons — Consideration of Possible Technologies
Dave M. Newman, M. Lesley Wears, Raphael J. Matelon,
- 13:40 Imaging by a Planar Lens in Quasi-electrostatic and Far Field Regimes
A. L. Efros, N. A. Kuhta, V. A. Podolskiy,
- 14:00 The Negative Refraction of a Surface Plasmon Polariton
Tamara A. Leskova, A. Alexei Maradudin,
- 14:20 Plasmonic Nanostructures and Polarization of Light
Aurelien Drezet, Cyriaque Genet, Thomas W. Ebbesen,
- 14:40 Application of the General Theory of Exact Relations to Fiber-reinforced Conducting Composites with Hall Effect
Yury Grabovsky,
- 15:00 **Coffee Break**
- 15:20 Metamaterials for the Extreme Control of Light
Alexander V. Kildishev, Evgenii E. Narimanov, Wen-shan Cai, Uday K. Chettiar, Vladimir M. Shalaev,
- 15:40 Nano-magnetophotonics
Rintaro Fujikawa, Alexander V. Baryshev, Mitsuteru Inoue,
- 16:00 Models and Devices Based on Thin-layer Metamaterials
Andrey N. Lagarkov, Vladimir N. Kisel,
- 16:20 Theory of the Universal Red Shift in the Optical Response of Gold/DNA Nanocomposites
David G. Stroud,
- 16:40 Phase Behavior of DNA-linked Gold Nanoparticle Assemblies
Ching-Hwa Kiang,

- 17:00 Cloaking by Reaction through Plasmonic Resonance
Ross C. McPhedran, G. W. Milton, Nicolae A. Nicorovici, Lindsay C. Botten,

**Session 3P5
 Poster Session 4**

**Thursday PM, July 3, 2008
 2:00 PM - 4:00 PM
 Room E**

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| <p>1 Observations of Cavity Dipole Solitons and Vortex Soliton Clusters in VCSELs with a Surface Photonic Crystal Structure
 <i>Yuan Yao Lin, Tsin-Dong Lee, Ray-Kuang Lee,</i></p> <p>2 Fresnel Rhomb and Other Devices for Handling and Teaching Polarization
 <i>Boris Ya. Zeldovich, I. V. Ciapurin, C.-C. Tsai,</i></p> <p>3 Simple Way for Introducing the Optical Theorem for Non-spherical Particles
 <i>Piero Bruscaaglioni,</i></p> <p>4 Simultaneous Switching Noise Mitigation in High-speed Circuits Using Ring-type High-impedance Surface Structures
 <i>Chin-Sheng Chang, Ding-Bing Lin, Kuo-Chiang Hung, I-Tseng Tang, Mau-Phon Houng,</i></p> <p>5 The Effect of the Microwave Emitted by Mobile Phones on the <i>in Vitro</i> and <i>in Vivo</i> Neuronal Survival in Rat Central Nervous System
 <i>Yongjian Zhu,</i></p> <p>6 Locally Resonant Cavity Cell Model for Three-layer Electromagnetic Band-gap (EBG) Structures
 <i>S. Mahdi Moghadasi, Armaghan Eshaghi,</i></p> <p>7 Suspended Electromagnetic Band-gap (EBG) Structures for Wideband Low Frequency Applications
 <i>S. Mahdi Moghadasi, Armaghan Eshaghi,</i></p> <p>8 Multiband Mushroom-like Electromagnetic Band-gap (EBG) Structures
 <i>S. Mahdi Moghadasi, Armaghan Eshaghi,</i></p> <p>9 Design of High Performance FPGA Based Face Recognition System
 <i>Imtiaz Ahmad Sajid, M. M. Ahmed, I. Taj, M. Humayun, F. Hameed,</i></p> <p>10 High Sensitivity of Phase-based Surface Plasmon Resonance in Nano-cylinder Array
 <i>Bing-Hung Chen, Yih-Chau Wang, Jia-Hng Lin,</i></p> | <p>11 Left-handed Zeroth Order Resonator on Ferrite Substrate
 <i>Mahmoud A. Abdalla, Zhirun Hu,</i></p> <p>12 The Collinear Anisotropic Diffraction of Light by the Standing Wave along <i>X</i>-axis of Lithium Niobate Crystal
 <i>Yuri A. Zyuryukin, Alexander N. Yulaev,</i></p> <p>13 Bi-frequency Pendulum on a Rotary Platform: Modeling Various Optical Phenomena
 <i>M. J. Soileau, Boris Ya. Zeldovich,</i></p> <p>14 Strength of Electromagnetic Reflection
 <i>Sergiy Mokhov, Boris Ya. Zeldovich,</i></p> <p>15 Similarity between Two Targets and Its Application to Polarimetric Target Detection for Sea Area
 <i>Wentao An, Weijie Zhang, Jian Yang, Wen Hong,</i></p> <p>16 Design of Multilayer Frequency Selective Surfaces Using Non-conventional Substrates
 <i>Yong Zhou, Fabio Urbani,</i></p> <p>17 Features and Mechanism of Satellite Infrared Anomaly before Ocean Earthquakes
 <i>Shanjun Liu, Lixin Wu, Qunlong Chen, Guoliang Li,</i></p> <p>18 Experimental Study on the Role of Water in the TIR Anomaly before Earthquake
 <i>Shanjun Liu, Qunlong Chen, Guoliang Li, Lixin Wu,</i></p> <p>19 Surface Latent Heat Flux (SLHF) Prior to Major Coastal and Terrestrial Earthquakes in China
 <i>Jinping Li, Lixin Wu, Huanping Wu, Shanjun Liu, Jieqing Yu,</i></p> <p>20 Surface Signature over Scattering Mechanism of Targets in Imaging Polarimetric Radars
 <i>Bijan Zakari Gatabi, Ayaz Ghorbani, H. Amindavar, Michele Galletti,</i></p> |
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**Session 3P6
 Optics and Photonics**

**Thursday PM, July 3, 2008
 Room F**

Chaired by Keith Iain Hopcraft, Takahiro Numai

- 13:00 Influence of Frequency Allocations and Optical Filters on FDM Optical Fiber Communications
Shinya Kojima, Takahiro Numai,
- 13:20 Intermediate Rytov-Berry-Chiao Phase and Rotation Sensors
N. B. Baranova, N. V. Tabiryan, C.-C. Tsai, Boris Ya. Zeldovich,
- 13:40 Chirped Higher Order Optical Solitons
Kaliyaperumal Nakkeeran, K. W. Chow, Krishnamoorthy Senthilnathan, P. K. A. Wai,

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| <p>14:00 Dispersion-managed Fiber Systems with Zero Hamiltonian
<i>A. B. Moubissi, Kaliyaperumal Nakkeeran, Abdosllam M. Abobaker, A. B. Ravi,</i></p> <p>14:20 Suppression of FWM Noises in FDM Lightwave Transmission Systems by Frequency, Polarization, and Bit-phase Allocations
<i>Takahiro Numai,</i></p> <p>14:40 Suppression of FWM Noises in FDM Lightwave Transmission Systems by Modified Repeated Unequally-spaced Frequency Allocations
<i>Shinya Kojima, Takahiro Numai,</i></p> <p>15:00 Coffee Break</p> <p>15:20 Fluctuations in the Zeros of Differentiable Gaussian Processes
<i>Keith Iain Hopcraft, Eric Jakeman, J. M. Smith,</i></p> <p>15:40 The Statistics of Caustics
<i>Oliver E. French, P. C. Chang, Keith Iain Hopcraft, Eric Jakeman, John G. Walker,</i></p> <p>16:00 The Extraction of Higher-order Field Correlations from a First-order Interferometer
<i>Scott Shepard,</i></p> <p>16:20 2-port Vectorial THz Electro-optic Sampling System
<i>Loïc Meignien, J. Mangeney, P. Crozat,</i></p> <p>16:40 Ray-optics of Wave Propagation through a Hollow Waveguide
<i>Md. Abdul Matin, Abdul Matin Patwari, Satya Prasad Majumder, Rummana Matin, Saeed M. Khan,</i></p> <p>17:00 The Effect of Reflectivity Dispersion on Gap Solitons in a Bragg Grating
<i>D. Royston Neill, Javid Atai, Boris A. Malomed,</i></p> <p>17:20 An Adaptive Spectroellipsometric Identifier for Ecological Monitoring of the Aquatic Environment
<i>Ferdinant A. Mkrtchyan, V. F. Krapivin, V. I. Kovalev, V. V. Klimov,</i></p> | <p>08:00 Scattering of Electromagnetic Waves by Inhomogeneous Dielectric Gratings Loaded with Two Adjacent Perfectly Conducting Strips — The Case of TM Waves
<i>Tsuneki Yamasaki, Ryosuke Ozaki, Takashi Hinata,</i></p> <p>08:20 Application of a Modified Broyden's Method in the Finite Difference Method for Electromagnetic Field Solutions
<i>Boguslaw Oleksiejuk, Andrew Nafalski,</i></p> <p>08:40 Radar Cross Section Analysis of a Finite Parallel-plate Waveguide with Four-layer Material Loading: Part I — The Case of <i>E</i> Polarization
<i>Jianping Zheng, Kazuya Kobayashi,</i></p> <p>09:00 Radar Cross Section Analysis of a Finite Parallel-plate Waveguide with Four-layer Material Loading: Part II — The Case of <i>H</i> Polarization
<i>Erhao Shang, Kazuya Kobayashi,</i></p> <p>09:20 A Reduced Integral Equation for Stationary Currents in Stratified Media
<i>Ioan R. Ciric,</i></p> <p>09:40 The Complex Faraday Tensor for Relativistic Evolution of a Charged Particle in a Constant Field
<i>Yaakov Friedman, Michael Danziger,</i></p> <p>10:00 Coffee Break</p> <p>10:20 Electromagnetic Information Theory for Wireless and Antenna Systems
<i>F. K. Gruber, E. A. Marengo,</i></p> <p>10:40 Spatial Filtering Characteristics of Scattered Fields by Inhomogeneous Waveguide Grids for X-ray Image Diagnosis
<i>Yasumitsu Miyazaki,</i></p> <p>11:00 Scalar Approximation to Describe Depolarized Light
<i>C.-C. Tsai, B. Ya. Zeldovich,</i></p> <p>11:20 Volume Singular Integral Equation Method for Determination of Effective Permittivity of Meta- and Nanomaterials
<i>Yury V. Shestopalov, Yury G. Smirnov, Vadim V. Yakovlev,</i></p> <p>11:40 Propagation and Scattering Characteristics of Microwaves over Forests in WiMAX Wireless Communications Using FDTD Method
<i>Yasumitsu Miyazaki, Takuya Takada, Koichi Takahashi,</i></p> |
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- Session 4A1**

Novel Mathematical Methods in Electromagnetics 1

Friday AM, July 4, 2008

Room A

Organized by Kazuya Kobayashi, Yury V. Shestopalov

Chaired by Kazuya Kobayashi, Yury V. Shestopalov

Session 4A2**Progress on Theory and Numerical Algorithm for Solving the Inverse Scattering Problems****Friday AM, July 4, 2008****Room B**

Organized by Aria Abubakar, Dominique Lesselier

Chaired by Aria Abubakar, Peter M. van den Berg

- 08:20 Subspace and Bayesian Compressive Sensing Methods in Imaging
E. A. Marengo,
- 08:40 Parallel Processing of Forward-backward Time-stepping Method for Time Domain Inverse Scattering
T. Moriyama, Y. Yamaguchi, K. A. Hong Ping, T. Tanaka, T. Takenaka,
- 09:00 On Combining Model Reduction and Gauss-Newton Algorithms for Inverse Frequency Domain Maxwell Equation
Mikhail Zaslavsky, Vladimir Druskin,
- 09:20 3D Gauss-Newton Quantitative Microwave Imaging Using a Preconditioned LSQR Algorithm and a Constrained Line-search Applied to Breast Imaging
Jürgen De Zaeytijd, Ann Franchois,
- 09:40 Progress of a High-resolution 3-D Microwave Imaging System for Breast Cancer Detection
Qing Huo Liu, Chun Yu, John Stang, Mengqing Yuan, Rhett T. George, Gary A. Ybarra, William Thomas Joines,
- 10:00 **Coffee Break**
- 10:20 A 3D Level Set Technique for Monitoring Conductive Fluids in Reservoirs
Oliver Dorn, Rossmay Villegas,
- 10:40 Exploiting Support Information and Lamé Curves in 2D Inverse Scattering Problems
Michele D'Urso, Ilaria Catapano, Lorenzo Crocco, Tommaso Isernia, Amélie Litman,
- 11:00 Retrieval of an Unknown Number of Buried Spheres by Differential Evolution with Multi-resolution Multi-zone Features
Arnaud Bréard, G. Perrusson, Dominique Lesselier,
- 11:20 Dort Method as an Imaging Tool for Extended Targets
X. Zhang, Hervé Tortel, Jean Michel Geffrin, Amélie Litman, Pierre Sabouroux,

Session 4A3a**Passive and Active Microwave Circuits****Friday AM, July 4, 2008****Room C**

Chaired by Yang Du

- 08:00 On the Development of Tunable Microwave Devices for Frequency Agile Applications
Jia-Sheng Hong, Young-Hoon Chun,
- 08:20 Usage of RBF Neural Network for the Implementation of a Microwave Waveguide Ten-port Reflectometer
Juan Monzó-Cabrera, J. P. Pedreño-Molina, A. Toledo-Moreo, Alejandro Díaz-Morcillo,
- 08:40 A Compact Ultra-wideband Bandpass Filter with Low Insertion Loss Using Stub Circuits with Defected Ground Structure
Wen-Jeng Lin, I-Tseng Tang, Ding-Bing Lin, Chi-Min Li, Min-Yuan Chiu, Mau-Phon Houng,
- 09:00 Measurement of the Dielectric Constant of Liquids Using a Hybrid Cavity-ring Resonator
Mohamed Salah Kheir, Hany F. Hammad, Abbas S. Omar,
- 09:20 A 802.11a Pulse-swallow Integer-N Frequency Synthesizer
Cheng-Chan Tien, Tsung-Mo Tien, Christina F. Jou,
- 09:40 Microwave Assisted Processing of $\text{Sm}(\text{Zn}_{0.5}\text{Ti}_{0.5})\text{O}_3$ and ZnO-TiO_2 Dielectric Resonators
S. Roopas Kiran, V. R. K. Murthy, Venkatachalam Subramanian,
- 10:00 **Coffee Break**

Session 4A3b**Microelectronic Packaging 1****Friday AM, July 4, 2008****Room C**

Organized by Henning Braunsch, Kaladhar Radhakrishnan

Chaired by Henning Braunsch, Kaladhar Radhakrishnan

- 10:20 Introduction of an ECT Simulator for Microelectronic Packaging
Tian Xiao, Mengqing Yuan, Joon-Ho Lee, Qing Huo Liu,
- 10:40 Simulation of Multiscale Circuit Problems Using Equivalence Principle Algorithm
Maokun Li, Weng Cho Chew, Zhiguo Qian,

- 11:00 A Full-wave Wide-band Surface-integral-equation-based Field Solver
Nur Kurt-Karsilayan, Krzysztof A. Michalski,
- 11:20 Evolving a 3-D Model for Determining the Impact of Reference Plane Discontinuities
Richard Mellitz, Ted Ballou,
- 11:40 Optimization of Vertical Interconnect of a Microprocessor Package Using a Fast Full-wave Electromagnetic Analysis Tool
Arun V. Sathanur, Vikram Jandhyala, Kemal Aygun, Henning Braunsch, Zhichao Zhang,

Session 4A4

Photonic Crystals and Metamaterials 1

Friday AM, July 4, 2008

Room D

Organized by Arthur McGurn

Chaired by Arthur McGurn

- 08:00 Transmission Spectra Changes Produced by Decreasing Compactness of Opal like Structures
Angel Andueza, Roberto Echeverria, Joaquin Sevilla,
- 08:20 Clusters of Sub-wavelength Metallic Cylinders as a Convenient Meta-material in the Visible EM Spectrum
David J. Bergman,
- 08:40 Influence of the Number of Layers in the Transmission Properties of Close Packed Structures of Macroscopic Size Dielectric Spheres
Angel Andueza, Roberto Echeverria, Joaquin Sevilla,
- 09:00 Theory of Luminescence of One-dimensional Resonant Photonic Crystals
L. I. Deych, M. V. Erementchouk, Alexander A. Lisyansky, E. L. Ivchenko, M. M. Voronov,
- 09:20 Transmission through Nonlinear Barriers and Junctions
Arthur McGurn,
- 09:40 Impedance in Photonic Crystals
Lindsay C. Botten, Felix Lawrence, Kokou Dossou, C. Martijn de Sterke,
- 10:00 **Coffee Break**
- 10:20 Theory of Negative Refraction in Arrays of High Index Rods
Didier Felbacq, Kevin Vynck, E. Centeno, A. I. Cabuz,

- 10:40 Sensitivity of the Resonance Characteristics of SRR and DSRR (Double-Sided SRR) Type Metamaterials to the Changes in Substrate Parameters and the Usefulness of DSRR Structure for Reduced Electrical Size
Evren Ekmekci, Gonul Turhan-Sayan,
- 11:00 Influence of Evanescent Waves on Beam Propagation in Photonic Crystals
Didier Felbacq, Brahim Guizal,
- 11:20 Effect of Negative Refraction on Anderson Localisation
Ara. A. Asatryan, Lindsay C. Botten, M. A. Byrne, Valentin D. Freilikher, S. A. Gre-deskul, Ilya V. Shadrivov, Ross C. McPhedran, Yuri S. Kivshar,
- 11:40 Surface Electromagnetic Waves on Two-dimensional Doubly Periodic Perfectly Conducting Surfaces
A. A. Maradudin, Tamara A. Leskova, Ingve Simonsen,

Session 4A5

Advances in Simulation and Design of Photonic Micro- and Nano-structures

Friday AM, July 4, 2008

Room E

Organized by Svetlana V. Boriskina

Chaired by Svetlana V. Boriskina

- 08:00 Theoretical Analysis of Sharp Resonances and Resonance Shifts in Silicon Microspheres
Shu-Chia Shiu, Cha-Hsin Chao, Shih-Che Hung, Ching-Fuh Lin,
- 08:20 Spectral Response and Emission Characteristics of Isolated and Clustered Micro-resonators
K. Bhowmick, T. M. Benson, Svetlana V. Boriskina, U. Kuhl, H.-J. Stöckmann,
- 08:40 Enhanced Tunability, Switching Functionality and Polarization Splitting in Microdisk Photonic Molecules
Svetlana V. Boriskina,
- 09:00 An Efficient Optical Waveguide Mode Solver Based on the Source-model Technique
Amit Hochman, Yehuda Leviatan,
- 09:20 The Interplay of Plasmonic and Channel Waveguide Dispersions in the Transmission Spectrum of a Single Metallic Nanoslit
Shih-Hui Chang, Yu-Lun Su,

- 09:40 Plasmonic Nanoantenna Arrays for the Visible Range
Vladimir M. Shalaev, Zhengtong Liu, Reuben Bakker, Vladimir P. Drachev, Alexander V. Kildishev, Alexandra Boltasseva, Rasmus H. Pedersen,
- 10:00 **Coffee Break**
- 10:20 Coupling between Fundamental Whispering Gallery Modes in Chains of Microspheres
Lev I. Deych, C. Schmidt, A. Chipouline, Thomas Pertsch, Andreas Tünnermann,
- 10:40 Optical Negative Index Materials: The Plasmonic Approach
Gennady Shvets, Y. Urzhumov, M. Davanco, S. Forrest, Vitaliy Lomakin,
- 11:00 Thermal Radiation in Microstructured Photonic Reservoirs
Marian Florescu,
- 11:20 Fullwave Simulation of the Interaction between a Molecule and a Photonic Antenna
Rodolfo E. Diaz, D. Lim,
- 11:40 Enhanced Light Scattering by a Dipole Placed in a Narrow Gap between Two Metallic Nanobodies
P. I. Geshev,
- 12:00 Modal Analysis of Straight and Bent Photonic Crystal Fibers Using the Boundary Integral Method for Light Transmission, Sensing and Plasmonic Applications
Elio Pone, Maksim Skorobogatiy,
- 09:20 Correlation between Locally Averaged SAR and Temperature Rise Distributions in a Human Body Exposed to RF Fields
Giorgi Bit-Babik, Antonio Faraone, Chung-Kwang Chou, A. Razmadze, R. Zaridze,
- 09:40 Progress in Design of Safe, Effective and Relatively Simple RF Pulses for Transmit Arrays in MRI
Sukhoon Oh, Zhangwei Wang, Sylvie Garrett, Christopher M. Collins,
- 10:00 **Coffee Break**
- 10:20 Experimental Temperature and Specific Absorption Rate Mapping Using MRI in a Transmit-receive Head Coil at 3.0T
Sukhoon Oh, Christopher M. Collins,
- 10:40 Ultra Fast Electromagnetic Field Computation for RF Multi Transmit Techniques in High Field MRI
Bob van den Bergen, Chris C. Stolk, Cornelis A. T. van den Berg,
- 11:00 Development of a Clinically Relevant 7 T MRI Head Scanner
Piotr Starewicz, Shahin Pourrahimi, William Punchard, John Williams,
- 11:20 Optimization of a 7.0 Tesla Receive Coil Array for Brain Imaging by the Surface Integral Equation Method and the Genetic Algorithm
Shumin Wang, Jeff H. Duyn,
- 11:40 Investigation of High Field Transmit B_1 Inhomogeneity by the Time-Domain Finite-Difference/Finite-Element Hybrid Method
Shumin Wang, Jeff H. Duyn,

Session 4A7**Electromagnetics in High Field MRI 1**

Friday AM, July 4, 2008**Room G**

Organized by Giorgio Bonmassar

Chaired by Giorgio Bonmassar

- 08:20 RF Tissue Heating Due to Metallic Implants during MRI
Chung-Kwang Chou,
- 08:40 Resistive Tapered Stripline for Deep Brain Stimulation (DBS) Leads at 7 T MRI: Specific Absorption Rate Analysis with High-resolution Head Model
Leonardo M. Angelone, E. Eskandaar, Giorgio Bonmassar,
- 09:00 Ultimate SAR and Ideal Current Patterns in Parallel Transmission
Riccardo Lattanzi, Aaron K. Grant, Yudong Zhu, Daniel K. Sodickson,

Session 4P1**Novel Mathematical Methods in Electromagnetics 2**

Friday PM, July 4, 2008**Room A**

Organized by Kazuya Kobayashi, Yury V. Shestopalov

Chaired by Kazuya Kobayashi, Yury V. Shestopalov

- 13:20 Applications of the Darwin Lagrangian Approach in Electromagnetism
Hanno Essén,
- 13:40 Numerical Calculation of Diffracted Electromagnetic Waves by a Circular Disk of Perfect Conductor Using Multiple Precision Arithmetic
Takashi Kuroki, Teruhiro Kinoshita, Toshiko Shibazaki,

- 14:00 Estimating a Statistical Property of a Domain Boundary Geometry from a Set of Noisy Solutions to the Helmholtz Equation
John F. Fletcher, P. Wadhams, Mark Spivack,
- 14:20 Body Fitted Grid Generation Method with Moving Boundaries and Over Set Grid Generation Method
Hiroshi Iwamatsu, Ryo Fukumoto, Shuichi Masuko, Michiko Kuroda,
- 14:40 Differential or Integral Equations in Electromagnetics: What's Better
Alexander B. Samokhin,
- 15:00 **Coffee Break**
- 15:20 From Transversality Condition to Vector Symmetry of the Representation of Electromagnetic Beams
Chun-Fang Li,
- 15:40 Electromagnetic Model for the Formation of the Sombrero Rings of Saturn
Vladimir V. Tchernyi (Cherny),
- 16:00 Efficient Computational Technique for Size and Shape Effects in Periodic Electromagnetic Bandgap Structures of Magnetic Nanoparticles and Nanowires
Galina S. Makeeva, Oleg A. Golovanov, Martha Pardavi-Horvath,
- 16:20 Computational Algorithm for Bifurcation Analysis of Threshold Behavior in Three-dimensional Systems of Magnetic Nanoelements
Galina S. Makeeva, Oleg A. Golovanov, Martha Pardavi-Horvath,
- 16:40 Using Necessary and Sufficient Conditions for the Existence of Bifurcation Points of the Nonlinear Maxwell's Operator for the Numerical Analysis
Galina S. Makeeva, Oleg A. Golovanov, Martha Pardavi-Horvath,

Session 4P2a**Transient Effects in Electromagnetic Pulse Propagation****Friday PM, July 4, 2008****Room B**

Organized by Heejeong Jeong

Chaired by Heejeong Jeong

- 13:00 Transitional Characteristics of Optical Precursors between Two Different Parameter Regimes
Heejeong Jeong, Ulf L. Österberg, Tobias Hansson,

- 13:20 The Effect of Conductivity on the Brillouin Precursor
Natalie A. Cartwright, Kurt Edmund Oughstun,
- 13:40 Comparison of Optical Pulse Propagation in Water and Acetonitrile
Marc Currie,
- 14:00 Propagation of 100-fs Laser Pulses on-and-off Water Resonances in the NIR
David Lukofsky, Heejeong Jeong, Jonathan Bessette, Ulf Österberg,
- 14:20 Ultrawideband Dispersive Pulse Propagation in Double-resonance Lorentz Model Dielectrics
Kurt Edmund Oughstun,
- 14:40 Conception and Realization of the Manual and Programmable Command of Stimulating Electric Muscular
Seddik Bri, L. Zenkour,

15:00 **Coffee Break****Session 4P2b****Scattering and Rough Surface Problem****Friday PM, July 4, 2008****Room B**

Chaired by Giovanni Franco Crosta, Arnaud Coatanhay

- 15:20 Feature Extraction and Classification of Wide Angle Optical Scattering Patterns from Single Aerosol Particles
Giovanni Franco Crosta, Gustavo Eddino Fernandes,
- 15:40 Carbothermal Reduction of Magnetite — Carbon Black Composites Using Microwave Heating
Kotaro Ishizaki, Sebastien Vaucher, Yoko Yamada Pittini, Manuela Stir, Radu Nicula,
- 16:00 Wave Structure Functions of Multiply Scattered Electromagnetic Waves by Anisotropic Magnetized Turbulent Plasma Layer
George Vakhtang Jandieri, Akira Ishimaru, V. G. Jandieri, A. G. Khantadze, I. B. Shirokov, Yu. B. Gimpilevich, Zh. M. Diasamidze,
- 16:20 A Circulant Preconditioned Banded Matrix Iterative Method for EM Scattering from Randomly Rough Surfaces
Yang Du, Jin Au Kong,
- 16:40 Electromagnetic Detectability of the Oil Slicks on a Sea Surface in Bistatic Configuration
Arnaud Coatanhay, C. Gervaise,

- 17:00 Surface Integral Scattering Formulation for the EM Wave Scattering from 3D Particles of Arbitrary Shape: Surface Plasmon Resonances in Metallic Nanoantennas
Rogelio Rodríguez Oliveros, V. Giannini, Jose Antonio Sánchez-Gil,
- 17:20 Electromagnetic Waves Propagation above Rough Surface: Application to Natural Surfaces
Othmane Benhmmamouch, Laurent Vaitilingom, Ali Khenchaf, Natacha Caouren,

Session 4P3

Microelectronic Packaging 2

Friday PM, July 4, 2008

Room C

Organized by Henning Braunisch, Kaladhar Radhakrishnan
Chaired by Henning Braunisch, Kaladhar Radhakrishnan

- 13:40 An Analytical Method to Calculate via Capacitance
Yaojiang Zhang, Jun Fan,
- 14:00 A Hollow Dielectric Pipe Admittance Tunnel for the Evaluation of Printed Circuit Board Dielectrics
Rodolfo E. Diaz, M. Shen, R. Ormeno,
- 14:20 Rough Surface Effect on Power Absorption by Signal Traces: Modeling Wave Propagation in a Randomly Rough Parallel Plate Waveguide
Ruihua Ding, Leung Tsang, Henning Braunisch,
- 14:40 Highly Compact Embedded Duplexer Implementation for WiMAX Dual-band Front-end Module with Organic Package Substrate
Kyungo Kim, Taeui Kim, Donghwan Lee, Sung Yi,
- 15:00 **Coffee Break**
- 15:20 Package-embedded Passive Components for High-speed Wired and Wireless Communication Systems
Telesphor Kamgaing, Emile Davies-Venn, Kemal Aygun, Kaladhar Radhakrishnan,
- 15:40 On-chip Electro-thermal Analysis Using Electromagnetic Modeling Tools
Lijun Jiang, Seshadri Kolluri, Barry J. Rubin, Howard Smith, Alina Deutsch, Jason Gill, Kaushik Chanda, Evan Colgan, Jamil A. Wakil,
- 16:00 Effect of Power Supply Noise on Clock Jitter and Data-clock Synchronization in Microprocessors
Isaac Kantorovich, Chris Houghton,

- 16:20 FDTD/FETD Modeling of Plasmonic Structures for Optical/CMOS Integration
Fernando Lisboa Teixeira, K.-Y. Jung, Burkay Donderici, Ronald M. Reano,

Session 4P4

Photonic Crystals and Metamaterials 2

Friday PM, July 4, 2008

Room D

Organized by Arthur McGurn

Chaired by Arthur McGurn

- 13:20 Application of Defect Induced Microwave Band Gap Structure for Non-destructive Evaluation and the Construction of a Frequency Selector Switch
E. D. V. Nagesh, N. Yogesh, Venkatachalam Subramanian,
- 13:40 Controllable Microwave Transmission in a Waveguide with a Lateral Variable Periodic Profile
Victor A. Pogrebnyak, James J. Whalen,
- 14:00 Towards R-space Bose-Einstein Condensation of Photonic Crystal Exciton Polaritons
Dmitri L. Boiko,
- 14:20 Transmission Lines Based on Metamaterial Structures for Si-MMICs
S. El Rai, A. Pawlikiewicz, R. Tempel, Dieter Jäger,
- 14:40 Electric and Magnetic Resonances in Double Stacking Split Rings
Lei Zhou, Xueqin Huang, Yi Zhang, S. T. Chui,
- 15:00 **Coffee Break**
- 15:20 Abnormal Radiation Pattern of Metamaterial Waveguide
Andrey N. Lagarkov, V. N. Semenenko, Alexey A. Basharin, N. P. Balabukha,
- 15:40 A Three Output Ports Add-drop Filter Based on Photonic Crystals
Faraz Monifi, A. Ghaffari, Mehrdad Djavid, Mohammad Sadegh Abrishamian,
- 16:00 A New Bandstop Filter Based on Photonic Crystals
Faraz Monifi, Mehrdad Djavid, Afshin Ghaffari, Mohammad Sadegh Abrishamian,
- 16:20 Power Splitter with Adjustable Output Power Levels Based on Photonic Crystal Waveguide Directional Coupler
Afshin Ghaffari, Mehrdad Djavid, Faraz Monifi, Mohammad Sadegh Abrishamian,

- 16:40 Power Splitters with Different Output Power Levels Based on Directional Coupling
Afshin Ghaffari, Mehrdad Djavid, Faraz Monifi, Mohammad Sadegh Abrishamian,
- 17:00 A New Bi-periodic Photonic Crystal Y-splitter
Afshin Ghaffari, Faraz Monifi, Mehrdad Djavid, Mohammad Sadegh Abrishamian,

Session 4P5**Professor Jin Au Kong Memorial Session****Friday PM, July 4, 2008****Room E**

Organized by Weng Cho Chew, Tarek M. Habashy

Chaired by Weng Cho Chew, Tarek M. Habashy

- 13:20 Waves in Layered Media
Weng Cho Chew,
- 13:40 Large-scale Inverse Scattering for Geophysical Applications
Tarek M. Habashy,
- 14:00 Topics in Microelectronics
Henning Braunsch,
- 14:20 Electromagnetic Composite Materials and Metamaterials
Alain C. Priou,
- 14:40 Optical Wave Scattering from Random Media and Rough Surfaces: Tailoring Light in Disordered Materials
Gerard Berginc,
- 15:00 **Coffee Break**
- 15:20 Full Wave Analysis for Finlines and Antennas with Metamaterial
Humberto Cesar Chaves Fernandes,
- 15:40 Wiener-Hopf Analysis of Canonical Scattering Problems
Kazuya Kobayashi,
- 16:00 Electromagnetic Scattering and Filtering in Random Media for Image Sensing
Yasumitsu Miyazaki,
- 16:20 Microwaves and Special Fiber Optics
Hung-Chia Huang,

Session 4P6a**Electromagnetics in High Field MRI 2****Friday PM, July 4, 2008****Room F**

Organized by Giorgio Bonmassar

Chaired by Giorgio Bonmassar

- 13:00 Parallel Transmission: A Comprehensive RF Safety Concept
Ingmar Graesslin,
- 13:20 Ultra-small-sample Molecular Structure Detection Using Microslot Waveguide Nuclear Spin Resonance
Yael Maguire, I. L. Chuang, Neil Gershenfeld,
- 13:40 Basic and Tailored RF Shimming in a Multi-transmit Whole Body MR System
Ulrich Katscher,
- 14:00 SAR in Parallel Transmission
Ingmar Graesslin, Dennis Glaesel, Sven Biederer, Ferdinand Schweser, Peter Vernickel, Peter Börner, Bjoern Annighoefer, Henry Stahl, Henk Dingemans, Giel Mens, Paul Harvey, Ulrich Katscher,
- 14:20 First Look at 7 Tesla Localized RF Excitation/Reception without B₁ Measurements
Tamer S. Ibrahim, Yik-Kiong Hue, Lin Tang,
- 14:40 Hypercapnia-induced Changes in Loss Tangent at Microwave Frequencies
Gilbert Jerome Beers, Y. Iris Chen, Kenneth K. Kwong, Giorgio Bonmassar, Leonardo M. Angelone, Jerome L. Ackerman,
- 15:00 **Coffee Break**

Session 4P6b**Localized Waves****Friday PM, July 4, 2008****Room F**

Organized by Hugo E. Hernández-Figueroa, Michel Zamboni-Rached, Erasmo Recami

Chaired by Hugo E. Hernández-Figueroa, Erasmo Recami

- 15:20 An Introduction to Localized Waves (Beams or Pulses)
Erasmo Recami,

- 15:40 Programmable Ultrashort-pulse Localized Waves
Ruediger Grunwald, Martin Bock, Silke Huferath, Susanta Kumar Das, Stefan Osten, Peter Staudt, Gero Stibenz,
- 16:00 Spatial and Spatio-temporal Wave Localization in Periodic Media
Davide Janner, S. Longhi, V. Pruneri,
- 16:20 Spatiotemporally Localized Luminal and Superluminal Null Electromagnetic Waves
Ioannis M. Besieris, Amr M. Shaarawi,
- 16:40 Nonlinear Trapping of Light Pulses by Photonic Potentials
O. V. Farberovich, S. Bar-Ad, Victor Fleurov,
- 17:00 Self-organized Propagation of Spatiotemporal Dissipative Solitons in Saturating Nonlinear Media
Vladimir Skarka, N. B. Aleksic,
- 17:20 Subluminal Localized Waves
Michel Zamboni-Rached, Leonardo A. Ambrosio, Hugo E. Hernández-Figueroa,
- 17:40 Nonlinear Effects in Electromagnetic Field Computations and Related Physical Processes in Nonlinear Media
R. P. Sharma,

Session 4P7**Mathematical Models for Light Scattering Applications including Nanooptics and Biophotonics**

Friday PM, July 4, 2008**Room G**

Organized by Yuri A. Eremin

Chaired by Yuri A. Eremin

- 13:40 Light Scattering by Human Erythrocyte: Different Shape Models
Elena Eremina, Natalia V. Grishina,
- 14:00 Analysis of Evanescent Waves Scattering by a Single Particle on a Layered Interface for Total Internal Reflection Microscopy (TIRM)
Elena Eremina, Thomas Wriedt, Laurent Helden,
- 14:20 Application of Microscopic Probes to DNA Sequencing: Thermal Fluctuations and EM Scattering in Near Field
Alex Bijamov, Fridon Shubitidze, Dmitri Vezenov,
- 14:40 Classical Theory of Optical Nonlinearities Due to Electron Confinement in Conducting Nanoparticles
George Y. Panasyuk, John C. Schotland, Vadim A. Markel,

15:00 Coffee Break

- 15:20 Light Transmission through Nanohole in Film in the Evanescent Waves Area Examination via Discrete Sources Method
Yuri A. Eremin, Elena Eremina, Natalia V. Grishina, Thomas Wriedt,
- 15:40 Spectral Scattering Properties of Nanohole in Film in the Evanescent Waves Area Analysis via Discrete Sources Method
Natalia V. Grishina, Yuri A. Eremin,
- 16:00 Far-field Electromagnetic Wave Scattering from Optically Rough Surfaces: Comparison of Measured and Calculated Results
John C. Stover, Vladimir V. Lopushenko,
- 16:20 Far-field Electromagnetic Wave Scattering from Optically Rough Surfaces: Computer Model Based on Mean Field Theory
Vladimir V. Lopushenko,

Session 5A1**EM Methods for ICs or Computational Electromagnetics**

Saturday AM, July 5, 2008**Room A**

Organized by Hao Gang Wang

Chaired by Hao Gang Wang

- 08:20 Inductance Extraction in ICs using Multilevel Green's Function Interpolation Method with Volume Loop Bases
Hao Gang Wang, Peng Zhao,
- 08:40 Fabrication and Characterization of Fully On-chip C-band Microwave Resonators with Increased Q-factor and Reduced Chip Size
Rohat Melik, Hilmi Volkan Demir,
- 09:00 Scale-changing Technique for the Electromagnetic Modeling of Multi-scale Structures
Herve Aubert,
- 09:20 An Efficient Space Domain Formulation of the MOM Method for Planar Circuits
Chaker Essid, M. Bassem Ben Salah, Faleh Yassine, Abdelaziz Samet, Ammar B. Kouki,
- 10:00 **Coffee Break**
- 10:20 Scattering from the Flat Strip Geometries in the Layered Medium by Using the Sinc Based Method of Moments
Fadıl Kuyucuoğlu, Taner Oğuzer, İbrahim Avgin,

- 10:40 A New Monte Carlo Methodology for the Solution of Partial Differential Equations Subject to Neumann and Mixed Boundary Conditions
Kausik Chatterjee, M. Sandora, C. W. Yu, S. Srinivasan, J. Poggie,
- 11:00 A Quasi-Monte Carlo Solver for Partial Inductances in IC Interconnect Structures
I. Dalal, D. Stefan, C. W. Yu, S. Srinivasan, N. Chitrik, M. Sandora, J. Salomon, Kausik Chatterjee,

Session 5A2a**Inverse and Forward Problems in Radiative Transport****Saturday AM, July 5, 2008****Room B**

Organized by Vadim A. Markel

Chaired by Vadim A. Markel

- 08:00 An Efficient Numerical Method for the Radiative Transport Equation: Method of Rotated Reference Frames
M. Machida, G. Panasyuk, V. A. Markel, J. C. Schotland,
- 08:20 Utilizing the Radiative Transfer Equation in Optical Tomography
Tanja Tarvainen, Marko Vauhkonen, Ville Kolehmainen, Jari P. Kaipio, Simon R. Arridge,
- 08:40 Radiance Calculations for Transport Equations with Differential and Integral Scattering Operators
Kevin G. Phillips, Carlo Lancellotti,
- 09:00 Fluorescence Lifetime Imaging Using the Equation of Radiative Transfer and Level Sets
Oliver Dorn,
- 09:20 Mesoscale Optical Tomography
Lucia Florescu, John C. Schotland, Vadim A. Markel,
- 09:40 Optical Imaging and Spectroscopy in Layered Tissues
Arnold D. Kim, Pedro Gonzalez-Rodriguez,
- 10:00 **Coffee Break**

Session 5A2b**Electromagnetics and Photonics: New Applications and Methods 1****Saturday AM, July 5, 2008****Room B**

Organized by Humberto Cesar Chaves Fernandes

Chaired by Humberto Cesar Chaves Fernandes, José Edimar Barbosa Oliveira

- 10:20 Non Perturbing, 3-Axis Electric Field Measurements Using Electro-optic Sensors
Anthony Garzarella, Dong Ho Wu,
- 10:40 New Metamaterial Using Dynamic Analysis at Millimeter Waves
Humberto Cesar Chaves Fernandes, Davi Bibiano Brito,
- 11:00 A New Application Metamaterial Antenna
Humberto Cesar Chaves Fernandes, M. Bonfim L. Aquino,
- 11:20 Spectral Enhancement of the SPOT Imagery Data to Assess Marine Pollution near Port Said, Egypt
Mona Fouad Kaiser, H. Aboulela, H. A. El-Serehy, H. Ezz Edin,
- 11:40 Modal Propagation Analysis Method for the Design of MMI Coupler Based Microring Resonators
Laurence W. Cahill, Thanh Trung Le,

Session 5A3**Medical and Industrial Applications of EM Field****Saturday AM, July 5, 2008****Room C**

Organized by Jan Vrba

Chaired by Jan Vrba

- 08:20 Medical Imaging and Diagnostics Based on Microwaves
Jan Vrba, Ladislav Oppl, Radim Zajicek, Lukáš Vísek, David Vrba, Jan Vrba,
- 08:40 Medical Diagnostics Using Reflection Method and Waveguide Probes — Feasibility Study
Radim Zajicek, Tomáš Smejkal, Ladislav Oppl, Jan Vrba,
- 09:00 Intracavitary Applicators for Thermotherapy
Jan Vrba, Katerina Novotna, Marika Pourova,
- 09:20 Applicators for Treatment of Atherosclerosis
Katerina Novotna, Jan Vrba,

09:40 Theory of Evanescent Mode Applicators
Jan Vrba, Paolo Togni, Jan Vrba, David Vrba,

10:00 **Coffee Break**

10:20 Design of an Exposure Chamber for Biological Experiments
Lukáš Víšek, Jan Vrba, Ladislav Oppl,

10:40 Hyperthermia Applicator for Small Superficial Tumor Treatment
Paolo Togni, Jan Vrba, Luca Vannucci,

11:00 Measurement of Yeast Cell Electrical Oscillations around 1 kHz
Michal Cifra, Jiří Pokorný, František Jelínek, Jiří Hašek,

11:20 Comparison of Possibilities Utilization Open — Resonator Type and Meandering Type of Microwave Applicators for Textile Industry
Marika Pourová, Jan Vrba,

Session 5A4
Photonic Crystals and Metamaterials 3

Saturday AM, July 5, 2008

Room D

Organized by Arthur McGurn

Chaired by Arthur McGurn

08:00 Reflection-free Waveguides in a Gyromagnetic Photonic Crystal
Marin Soljacic,

08:20 Photonic Crystal Concept Applied to Diffractive Optics for Novel Electromagnetic Wave Propagation Control Devices
Ming Li, Xinhua Hu, Zhuo Ye, Kai-Ming Ho,

08:40 Line Source Wave Scattering by Line Inhomogeneities inside Left-handed Material Slab: Green Function Approach
Yuru Nicolaevich Barabanenkov, M. Yu. Barabanenkov, S. A. Nikitov,

09:00 Zero- $\bar{n}$ Bandgap in Photonic Crystal Superlattices at the Near-infrared
Serdar Kocaman, Rohit Chatterjee, Nicolae C. Panoiu, Mingbin Yu, Dim-Lee Kwong, Richard M. Osgood, Jr., Chee Wei Wong,

09:20 A Tunable Short-length Photonic Crystal Wavelength Separator
Armaghan Eshaghi, S. Mahdi Moghadasi,

09:40 Guiding Waves through Waveguide Bends by Meta-material Blueprints
Burkay Donderici, Fernando Lisboa Teixeira,

10:00 **Coffee Break**

10:20 Non-classical Light Generation by a Single-emitter Photonic-crystal Laser
Lucia Florescu,

10:40 The Dynamical Process and the Causality Limitation of the Dispersive Cloak
Xunya Jiang,

11:00 The New Nonlinear Phenomena in the Photonic Crystals Around the Self-collimation Frequency
Xunya Jiang,

Session 5A5
Nanoscale Materials - Magnetic and Optical Properties

Saturday AM, July 5, 2008

Room E

Organized by Latika Menon

Chaired by Latika Menon

08:00 Dual Magnetism in Fe-doped Anatase Nanorods
Laura H. Lewis, Y. Ding, W.-Q. Han,

08:20 Multi-component Nanoparticles by Organic Solution Phase Synthesis
Hao Zeng, Savas Delikanli,

08:40 Magnetoplasmons and Quasiparticles for Quantum-dots in Graphene
Oleg L. Berman, Godfrey Gumbs,

09:00 Negative Permittivity and Permeability of a Composite Filled with Layered Microspheres
Nicola Bowler, Jin Liu,

09:20 Two-photon Absorption Spectra of Cis- and Trans-bifullerene[60]-pentacene Adducts Based on First-principle Simulation
W.-D. Cheng, H. Hu, J.-Y. Wang,

09:40 Self-assembled Magnetic Nanodot Array
Hao Zeng, Chaehyun Kim,

10:00 **Coffee Break**

10:20 Poynting Vector, Second Law of Thermodynamics and Negative Refraction
Vadim A. Markel,

10:40 Magnetostatic Interactions in Partially Shielded Polyaniline-ferromagnet Composite Nanowire Arrays
Adam L. Friedman,

- 11:00 Photoconductive Switch Based on ZnS Nanobelts Thin Film
Bo Yang, Tong Zhang, Xuejun Zheng,
- 11:20 Raman and Photoluminescence Studies on CVD Grown GaN Nanowires
Zhen Wu, Myung Gwan Hahm, Yung Joon Jung, Latika Menon,
- 11:40 Ferromagnetic and Magnetic Semiconductor Nanodot Arrays Fabricated Using Porous Alumina Masks
S. Bennett, Latika Menon, Donald Heiman,
- 12:00 Microwave Characterization of Magnetic Nanoclusters Embedded in Metal-Oxides
Christian Brosseau, Vincent Castel, Jamal Ben Youssef,
- 12:20 Nanophotonic Negative-index Optical Metamaterials: New Concepts in Negative Refraction and Imaging
Srinivas Sridhar,

Session 5A7

Extended/Unconventional Electromagnetic Theory, EHD (Electrohydrodynamics)/EMHD (Electromagnetohydrodynamics), Electrobiolgy

Saturday AM, July 5, 2008

Room G

Organized by Hiroshi Kikuchi

Chaired by Hiroshi Kikuchi

- 08:20 Extending the Theory of Non-quasi-neutral Plasmas
Dirk K. Callebaut, Hiroshi Kikuchi,
- 08:40 A Novel Parametrically Amplifying Traveling Fast-wave Antenna (PATA) with a High Gain and Directivity as a Modern Version of the Historical Slow-wave Beverage Antenna Utilizing an Induced Fast Surface Wave by an External Sky Wave: Analogous to Traveling-wave Tube Amplification and Negative Resistivity of Esaki Diodes
Hiroshi Kikuchi, Sigeobu Tsuruoka, Tsunehiro Obata,
- 09:00 Analysis and Design of Minigenerator
Pavel Fiala, Tomas Jirku,
- 09:20 An Electric Field Test Using the MRI
Pavel Fiala, Karel Bartusek,
- 10:00 **Coffee Break**
- 10:20 Numerical Modelling of the Special Light Source with Novel R-FEM Method
Pavel Fiala, Eva Kroutilova, Tomas Kriz,

- 10:40 The Measurement of Temperature Characteristics of Cu Bulk Resistivity
Karel Bartusek, Pavel Fiala, Premysl Dohnal,
- 11:00 Processing of MR Images in Temporomandibular Joint Examination
Karel Bartusek, Zdenek Smékal, Ondrej Liberda, Andrea Sprlakova,
- 11:20 Can the Wave Equation Yield a Photon Structure?
Dirk K. Callebaut,

Session 5P1

Computational Electromagnetics - Combined Modeling Methods

Saturday PM, July 5, 2008

Room A

Organized by Hugo E. Hernández-Figueroa, F.

Anibal Fernández

Chaired by Hugo E. Hernández-Figueroa, F. Anibal Fernández

- 13:00 Mixed Finite-element Time-domain Method for Simulating Doubly Dispersive Media
Burkay Donderici, Fernando Lisboa Teixeira,
- 13:20 Analytical Linking of Numerical Computational Domains
Phillip Donald Sewell, David W. P. Thomas, Jim Wykes, Ana Vukovic, Christos Christopoulos, Trevor Mark Benson,
- 13:40 Probabilistic Approach of Electromagnetic Interaction Problems Using Quadrature Rules
Ousmane Oumar Sy, J. A. H. M. Vaessen, M. C. van Beurden, Antonius G. Tjhuis, B. L. Michielsen,
- 14:00 Linear and Non-linear Optical Waveguiding in Liquid Crystal Devices
Jeroen Beeckman, Richard James, F. Anibal Fernandez, Eero Willman, Kristiaan Neyts,
- 14:20 Computational Modeling of Bound and Radiation Mode Optical Electromagnetic Fields in Multimode Dielectric Waveguides
David R. Selviah, Ioannis Papakonstantinou,
- 14:40 Software Implementation of a New Multi-scale Method for Fractal-shaped Structures' Diffraction Analysis
Taha Ben Salah, Taoufik Aguilí,
- 15:00 **Coffee Break**

- 15:20 2D and 3D Finite Element Method Strategies for Computer-aided Design Purposes in the Time-harmonic Maxwell's Equations
Valentín de la Rubia, Jesús Rubio, Juan Zapata,
- 15:40 Electro-hydrodynamics of Liquid Crystals
Richard James, Eero Willman, F. Anibal Fernández, S. E. Day,
- 16:00 The Shape of Saturn's Moon Titan from Radar Scattering Properties
Howard A. Zebker,
- 16:20 Influence of a Logging Tool on Modes of Noncircular Fluid-filled Boreholes in Elastic Formations
Ergun Simsek, Bikash K. Sinha,
- 16:40 Fast Calculation of the Diffraction Operator Kernel Used by the Wave Concept Iterative Process (WCIP) for Problems of Scattering and Radiation by Planar Circuits in Free Space
Tarek Bdour, N. Ammar, Taoufik Aguil, Henri Bau-drant,
- 17:00 Electromagnetic Investigation of Scattering by Arbitrarily Shaped Structures in Free Space Using a Full Wave Transverse Formulation (TWF)
Tarek Bdour, N. Ammar, Taoufik Aguil, Henri Bau-drant,
- 17:20 Inversion 2D in the Measures of the Resistivity of the Ground
Celsa Herminia de Melo Maranhão, Valcir João da Costa Farias, Brígida Ramati Pereira da Rocha,
- 17:40 Forest Effects on Lightning Discharge Signals in the Amazon Region: Preliminary Results
Valcir João da Cunha Farias, Brígida Ramati Pereira da Rocha, José Pissolato Filho,
- 13:40 Design and Analysis of Resonant Leaky-mode Broad-band Reflectors
Mehrdad Shokooh-Saremi, Robert Magnusson,
- 14:00 Design of Two-band 150–220 GHz Superconducting Bolometric Detection Structure
Dominique Raully, Alessandro Monfardini, Angel Colin, Pascal Febvre,
- 14:20 A Magneto-dielectric Hologram as an Efficient Computational Boundary for Domain Decomposition
Rodolfo E. Diaz, Anastasios H. Panaretos,
- 14:40 Nanowire-based Superconducting Single-photon Detectors for Infrared Single-photon Source Characterization
Martin J. Stevens, Burm Baek, Richard P. Mirin, Sae Woo Nam, Robert H. Hadfield,
- 15:00 **Coffee Break**
- 15:20 Rigorous Coupled-wave Analysis of Electromagnetic Wave Diffraction by Photo-induced Plasma Gratings
Krzysztof A. Michalski,
- 15:40 Stability and Interactions of Moving Bragg Grating Solitons in a Semi-dual Core System
Yazhuo Li, Javid Atai,
- 16:00 Highly Linear Optical Modulators Based on Gires-Tournois and Double Ring Assisted Mach-Zehnder Interferometers
William dos Santos Fegadolli, José Edimar Barbosa Oliveira, Bráulio Fernando R Sakamoto,
- 16:20 Plastic Optical Fiber Microbend Sensors
William dos Santos Fegadolli, José Edimar Barbosa Oliveira, Vilson Rosa De Almeida,

Session 5P2**Electromagnetics and Photonics: New Applications and Methods**

Saturday PM, July 5, 2008**Room B**Organized by Humberto Cesar Chaves Fernandes
Chaired by Humberto Cesar Chaves Fernandes, José Edimar Barbosa Oliveira

- 13:20 Multilayer Antenna with Metamaterial and Arbitrary Substrate
Humberto Cesar Chaves Fernandes, R. R. C. França, A. F. Gomes,

Session 5P3**Microwave and Millimeter-wave Devices and Circuits with CAD**

Saturday PM, July 5, 2008**Room C**Organized by Subal Kar
Chaired by Subal Kar

- 13:00 Design of a Broadband Filter
Manidipa Bhattacharya,
- 13:20 Smart Use of Non Uniform Transmission Lines to Control Oscillator and Power Amplifier Harmonics
Mohamed Boussalem, B. Roucariès, F. Choubani, J. David, R. Crampagne,
- 13:40 Numerical Characterization of Novel Schemes for Millimeter-wave Signal Generation by Optical Heterodyning
Subal Kar,

- 14:00 Left Handed Maxwell (LHM) System: A New Direction for Microwave and Millimeter-wave Research
Subal Kar, Debashree Banerjee, Tapashree Roy,
- 14:20 Simulation Studies on Broadband LNA Design: A Distributed Approach
Paramita Biswas, Arijit Majumder, Subal Kar,
- 14:40 A CAD of Frequency Tripler at Microwave and Millimeter Wave Frequencies
Arun Kumar, Bijit Biswas, P. K. Saha,
- 15:00 **Coffee Break**
- 15:20 CAD of Microstrip Mixer at Microwave and Millimeter Wave Frequencies
Arun Kumar, G. Arun Kumar, P. K. Saha,
- 15:40 Scale Model Hardware Characterization of an Optical Phase-locked Loop (OPLL) Microwave Photonic Transmitter
Subal Kar, Somak Bhattacharyya, Sujoy Mondal, Kasturi Mukherjee, Dibakar Deb, Dipankar de Sarkar,
- 16:00 Computer-aided Analysis of an Optical Heterodyning Scheme for Ultra-stable Microwave Signal Generation and Its Scale-model Hardware Characterization
Subal Kar, Dipankar de Sarkar, Paramita Das, Sudipta Banerjee, Somak Bhattacharyya,

**Session 5P4a
Metamaterials**

Saturday PM, July 5, 2008

Room D

Chaired by Richard D. Averitt, Hongsheng Chen

- 13:00 Dynamical Control of Terahertz Metamaterial Resonance Response Using Bimaterial Cantilevers
Hu Tao, Andrew Strikwerda, Chris Bingham, Willie J. Padilla, Xin Zhang, Richard D. Averitt,
- 13:20 Controlling the Emission of Electromagnetic Sources
Yu Luo, Jingjing Zhang, Lixin Ran, Hongsheng Chen, Jin Au Kong,
- 13:40 Cylindrical Cloak Created with Multilayered Material
Hongsheng Chen, Sheng Xi, Baile Zhang, Bae-Ian Wu, Jin Au Kong,
- 14:00 Scattering by a Left-handed Particle on a Left-handed Slab or Surface
Oliver E. French, Keith Iain Hopcraft, Eric Jakeman,
- 14:20 Effect of Losses in a Layered Structure Containing DPS and DNG Media
João R. Canto, Sérgio A. Matos, Carlos R. Paiva, Afonso M. Barbosa,

- 14:40 Complex Aberration Effect in Moving Dispersive DNG Media: A Spacetime Algebra Approach
Sérgio A. Matos, J. R. Canto, Carlos R. Paiva, Afonso M. Barbosa,

15:00 **Coffee Break**

- 15:20 Rainbow and Blue-shift Effect of a Dispersive Spherical Invisibility Cloak with a Nonmonochromatic Plane Wave Passing through
Baile Zhang, Bae-Ian Wu, Hongsheng Chen, Jin Au Kong,

Session 5P4b

Modeling and Simulations in Materials Science

Saturday PM, July 5, 2008

Room D

Organized by Ali Zaoui

Chaired by Ali Zaoui

- 15:40 Wide Band Gap Semiconductor High-power Coherent THz Source
V. I. Litvinov, H. Morkoc, Jinqiao Xie,
- 16:00 Morphological Characterization of Two-dimensional Random Media and Patterns by Fractional Differentiation
Giovanni Franco Crosta,
- 16:20 Microwave Characterization of Nickel
Stepan Lucyszyn,
- 16:40 Theoretical Study of the High Pressure Phase Transitions in the Calcite Rock
Ali Zaoui,
- 17:00 A Closed Form Analysis on Generalized Scaling for Forecasting Heating Patterns during Microwave Processing
Madhuchhanda Bhattacharya, Tanmay Basak,
- 17:20 Dielectric Mixtures, Structure/property Relations and Spectral Density Representation
Enis Tuncer, Gunnar A. Niklasson,
- 17:40 Electromagneto-mechanical Coupling Response of Plasto-ferrites
Christian Brosseau, Wilfried NDong,

Session 5P5**Medical Electromagnetics, RF Biological
Effect and Biological Media**

Saturday PM, July 5, 2008**Room E**Chaired by Chung-Kwang Chou

- 13:20 Rotation of the Leaky Dielectric Particle in a Rotating Electric Field
Yuli Dolinsky, T. Elperin,
- 13:40 Developments in Voxel Models and Whole-body Averaged SAR Calculations at the HPA
Peter Dimbylow,
- 14:00 Theoretical Analysis of Temperature Elevation in a Human Body Exposed to Millimeter Wave
Akio Kanezaki, Taiji Sakai, Soichi Watanabe, Aki-masa Hirata, Hiroshi Shirai,
- 14:20 A Non-surgical Interrogating Vector Field Brain Activity Recovery Method
D. Cohoon, Grant Erdmann, R. Albanese, J. Harvey, R. Medina, S. Samn,

- 14:40 Resonance as a Tool to Transfer Information to Living Systems: The Effect of 7 Hz Calcium Ion Energy Resonance on Human Epithelial Cells (HaCaT) Differentiation

Antonella Lisi, Alberto Foletti, Mario Ledda, Flavia De Carlo, Livio Giuliani, Enrico D'Emilia, Settimio Grimaldi,

15:00 Coffee Break

- 15:20 Temperature Induced Changes of Spontaneous Photon Emission from Human Hands
Michal Cifra, Eduard P. A. van Wijk, Roeland van Wijk,
- 15:40 A Microdosimetry Analysis from ELF up to MW Range for the Study of the Bioelectromagnetic Interaction
Caterina Merla, Micaela Liberti, Francesca Apollonio, Guglielmo D'Inzeo,
- 16:00 Detection and Identifications of Biological and Artificial Materials Characterized by Their Optical Rotation and Circular Dichroism Based on Mueller Matrix Measurements
Ezekiel Bahar,

PIERS SURVEY

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

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

Name: _____ Position: _____
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Address: _____ Fax: _____

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Date: _____

A1. For the next PERS to be held on 23–27 March, 2009 in Beijing, CHINA,

() I will be interested in organizing and chairing a session, the proposed title is

B. For past PERS, I attended

- | | | |
|--------------------------------|--------------------------------|--------------------------------|
| () 1st PERS1989 in Boston | () 2nd PERS1991 in Cambridge | () 3rd PERS1993 in Pasadena |
| () 4th PERS1994 in Noordwijk | () 5th PERS1995 in Seattle | () 6th PERS1996 in Innsbruck |
| () 7th PERS1997 in Hong Kong | () 8th PERS1997 in Cambridge | () 9th PERS1998 in Nantes |
| () 10th PERS1999 in Taipei | () 11th PERS2000 in Cambridge | () 12th PERS2001 in Osaka |
| () 13th PERS2002 in Cambridge | () 14th PERS2003 in Singapore | () 15th PERS2003 in Honolulu |
| () 16th PERS2004 in Pisa | () 17th PERS2004 in Nanjing | () 18th PERS2005 in Hangzhou |
| () 19th PERS2006 in Cambridge | () 20th PERS2006 in Tokyo | () 21st PERS2007 in Beijing |
| () 22nd PERS2007 in Prague | () 23rd PERS2008 in Hangzhou | () 24th PERS2008 in Cambridge |

C. I have the following comments about PERS:

PIERS 2009 in Beijing

Progress in Electromagnetics Research Symposium

23 – 27 March, 2009

Beijing, CHINA

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SUGGESTED TOPICS:

- | | |
|--|--|
| 1 Electromagnetic theory | 2 Computational electromagnetics, hybrid methods |
| 3 Spectra, time, and frequency domain techniques | 4 Fast iteration, large scale and parallel computation |
| 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 7 SEPTEMBER 2008

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

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PRESENTING AUTHORS MUST PRE-REGISTER BY 7 NOVEMBER 2008

Each presenting author is limited to present no more than three papers in oral and poster sessions, and must pre-register by paying a **non-refundable** fee of **US\$395** before **7 November 2008**. For students with valid identification, the non-refundable pre-registration fee is **US\$195**. Registration fee will be raised to **\$500** after **7 November 2008**. 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.

	WEDNESDAY AM 8:00 JULY 2		WEDNESDAY PM 13:00 JULY 2	THURSDAY AM 8:00 JULY 3	THURSDAY PM 13:00 JULY 3	
ROOM A	2A1 - Efficient Electromagnetic Solvers for Large Problems		2P1 - Computer Aided Modeling, Design and Optimization	3A1 - Electromagnetic Scattering and Absorption	3P1 - Computational Electromagnetics	
ROOM B	2A2 - Remote Sensing		2P2 - Theory, Modeling and Inversion of Controlled-source Electromagnetic and Magnetotelluric for Geophysical Applications	3A2 - Scattering by Ordered and Disordered Media: Photonic Applications 1	3P2a - Scattering by Ordered and Disordered Media: Photonic Applications 2	3P2b - 3D Electromagnetic Imaging for Geophysical Applications
ROOM C	2A3a - Interaction of Waves and Media	2A3b - Electromagnetic Theory	2P3 - Electromagnetics Wave and Media: RF and Microwave Applications including Emerging Technologies for Future Wireless Communication Systems	3A3 - Mobile Antennas, RF and Wireless Communication	3P3 - Antenna Theory and Microstrip Antennas	
ROOM D	2A4 - Electromagnetic Modeling, Inversion and Applications 1		2P4 - Electromagnetic Field in Optical Materials and EM Field Dispersion in Photonic Crystals	3A4 - Electromagnetic Modeling, Inversion and Applications 2	3P4 - Plasmonics, Metamaterials, and Magneto-Optics	
ROOM E	2A5 - Poster Session 1		2P5 - Poster Session 2	3A5 - Poster Session 3	3P5 - Poster Session 4	
ROOM F	2A6 - Electromagnetic Compatibility 1		2P6a - Electromagnetic Compatibility 2	2P6b - Advances in Numerical Methods for Photonics Simulation	3A6- Photonics, Plasmonic & Nano Scale Electromagnetic	3P6 - Optics and Photonics
ROOM G				3A7a - Terahertz Theory, Measurements, and Applications		

	FRIDAY AM 8:00 JULY 4		FRIDAY PM 13:00 JULY 4		SATURDAY AM 8:00 JULY 5		SATURDAY PM 13:00 JULY 5	
ROOM A	4A1 - Novel Mathematical Methods in Electromagnetics 1		4P1 - Novel Mathematical Methods in Electromagnetics 2		5A1 - EM Methods for ICs or Computational Electromagnetics		5P1 - Computational Electromagnetics - Combined Modeling Methods	
ROOM B	4A2 - Progress on Theory and Numerical Algorithm for Solving the Inverse Scattering Problems		4P2a - Transient Effects in Electromagnetic Pulse Propagation	4P2b - Scattering and Rough Surface Problem	5A2a - Inverse and Forward Problems in Radiative Transport	5A2b - Electromagnetics and Photonics: New Applications and Methods 1	5P2 - Electromagnetics and Photonics: New Applications and Methods	
ROOM C	4A3a - Passive and Active Microwave Circuits	4A3b - Microelectronic Packaging 1	4P3 - Microelectronic Packaging 2		5A3 - Medical and Industrial Applications of EM Field		5P3 - Microwave and Millimeter-wave Devices and Circuits with CAD	
ROOM D	4A4 - Photonic Crystals and Metamaterials 1		4P4 - Photonic Crystals and Metamaterials 2		5A4 - Photonic Crystals and Metamaterials 3		5P4a - Metamaterials	5P4b - Modeling and Simulations in Materials Science
ROOM E	4A5 - Advances in Simulation and Design of Photonic Micro- and Nano-structures		4P5 - Professor Jin Au Kong Memorial Session		5A5 - Nanoscale Materials - Magnetic and Optical Properties		5P5 - Medical Electromagnetics, RF Biological Effect and Biological Media	
ROOM F			4P6a - Electromagnetics in High Field MRI 2	4P6b - Localized Waves				
ROOM G	4A7 - Electromagnetics in High Field MRI 1		4P7 - Mathematical Models for Light Scattering Applications including Nanooptics and Biophotonics		5A7 - Extended/Unconventional Electromagnetic Theory, EHD (Electrohydrodynamics)/EMHD (Electromagnetohydrodynamics), Electrobiolgy			