PIERS 2007 Beijing

Progress In Electromagnetics Research Symposium

Program

March 26–30, 2007
Beijing, CHINA

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Progress in Electromagnetics Research Symposium
March 26–30, 2007
Beijing, CHINA

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- College of Information Science and Technology, Beijing Institute of Technology
- BIT Center for Electromagnetic Simulation
- MIT Center for Electromagnetic Theory and Applications/Research Laboratory of Electronics
- The Electromagnetics Academy

2007 NSFC WORKSHOP ON METAMATERIALS

2007 NSFC Workshop on Metamaterials, in conjunction with PIERS 2007, will be held in Beijing, 26 March, 2007. The workshop is co-sponsored by National Natural Science Foundation of China and all PIERS participants are free to attend this workshop.
Workshop participants should send the workshop registration form to PIERS OFFICE in advance.
Detailed descriptions of NSFC workshop can be found on the PIERS website at www.piers.org.

SYMPOSIUM SITE

The 2007 Progress in Electromagnetics Research Symposium will be held on March 26–30, 2007, at the Central Garden Hotel, Beijing, China. During the Symposium, the PIERS office will be in the Central Garden Hotel. Workshop and PIERS registration starts Monday morning.

REGISTRATION

The PIERS technical sessions and NSFC Workshop will begin on Monday morning, March 26, 2007 at the Central Garden Hotel in Beijing, China. You may register in the PIERS Office on Monday, March 26, from 8:00 to 18:00, or during the Symposium from 8:00 through 17:00, March 27–30.

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 break, interactive areas, and technical sessions if a name badge is not visible.

SPECIAL EVENTS

Opening Reception

On Monday, March 26, 2006, from 11:30 to 13:30, symposium reception with buffet lunch will take place at the Central Garden Hotel. For registered PIERS participant, the reception fee is free. For unregistered companions, the price is RMB100 (CNY100) per person. Please make online reservation in advance at PIERS website.

Symposium Banquet

On Wednesday evening, March 28, 2007, 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 RMB300 (CNY300) per person. Please online make reservation in advance and pay cash at PIERS check-in desk.

PIERS ONLINE

Information on PIERS 2007 Beijing and future PIERS is posted at www.piers.org.

GUIDELINES FOR PRESENTERS

Oral Presentations

Each session room is equipped with a stationary computer connected to a LCD projector (beamer). Presenters choosing to use electronic presentation must load their presentation files in advance onto the central PIERS computer in the PIERS office. The PIERS computer is equipped with a USB port and a CD-ROM drive. Please load your presentation files to the PIERS computer at PIERS OFFICE at least half-day before your session.

A technician personnel will be available to assist you and test your presentation at the PIERS office. Presenters can only use the session computer for their presentation and are not allowed to detach the session computer and attach their own notebook/laptop to the LCD projector. Presenters choosing to use overhead projector with transparencies, please inform PIERS OFFICE to prepare in advance.

Scheduled time slots for presentation are 20 minute each, including questions and discussions. Presenters are required to report to their session room and to their session Chair at least 10 minutes prior to the start of their session. The session chair must be presented 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 paper and refrain from changing paper presentation sequence.

Poster Presentations

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

The poster session 1 will be 9:00 to 17:00 on Monday, March 26, 2006 and the poster session 2 will be 9:00 to 17:00 on Tuesday, March 27, 2006. All presenters are required to mount their papers at the beginning of the session and remove them at the end of their sessions.

Presenters should post time slots of their presence on the panel and be present for interactive questions within the posted time slots.

ACCOMMODATION

Participants are responsible for making their own housing arrangements. The information below is provided for your convenience. Hotel Reservation Form is available online. Please visit PIERS 2007 website for detailed information.

Central Garden Hotel Accommodations

Central Garden Hotel
18 Xie Street Gaoliangqiao,
Xizhimenwai Ave, Haidian District, Beijing

Phone: 86-10-51568888
Fax: 86-10-51566789
Email: garden@centralgardenhotel.com

GENERAL INFORMATION

LANGUAGE

The official language for the Symposium is English. However, in the public society, Chinese mandarin is commonly spoken in Beijing.

CURRENCY AND CREDIT CARDS

Chinese currency is RMB with its monetary unit RMB *Yuan*. The exchange rate is 1 USD for about 7.8 RMB. The credit cards and cash in US dollars are acceptable on the hotel registration desk in Central Garden Hotel. This is also the case in most large shopping centers and other hotels.

TAX AND TIP

Tipping is by no means a traditional Chinese custom. Please help keep the good custom and do not tip a waiter/waitress or a taxi driver and other persons who provides regular service. Take back any change that is rightfully yours. All the shopping is free of tax. Bargaining is necessary on buying merchandise especially from Street Markets.

TAXI

Usually, a taxi is available along the roadsides, while you wave for it. However, on main streets it is only available at taxi stops or in front of a hotel.

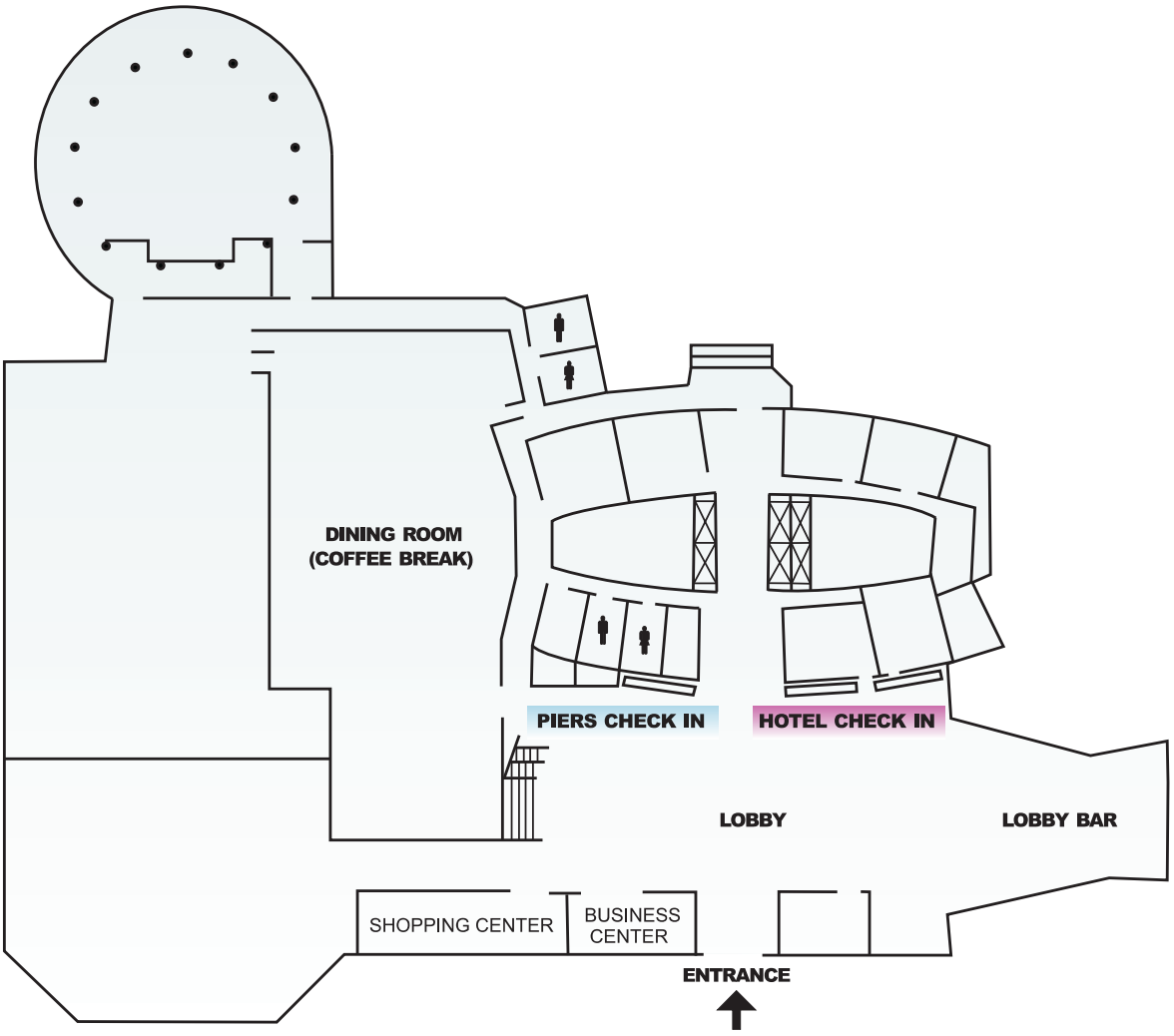
BUSINESS OPENING HOURS

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

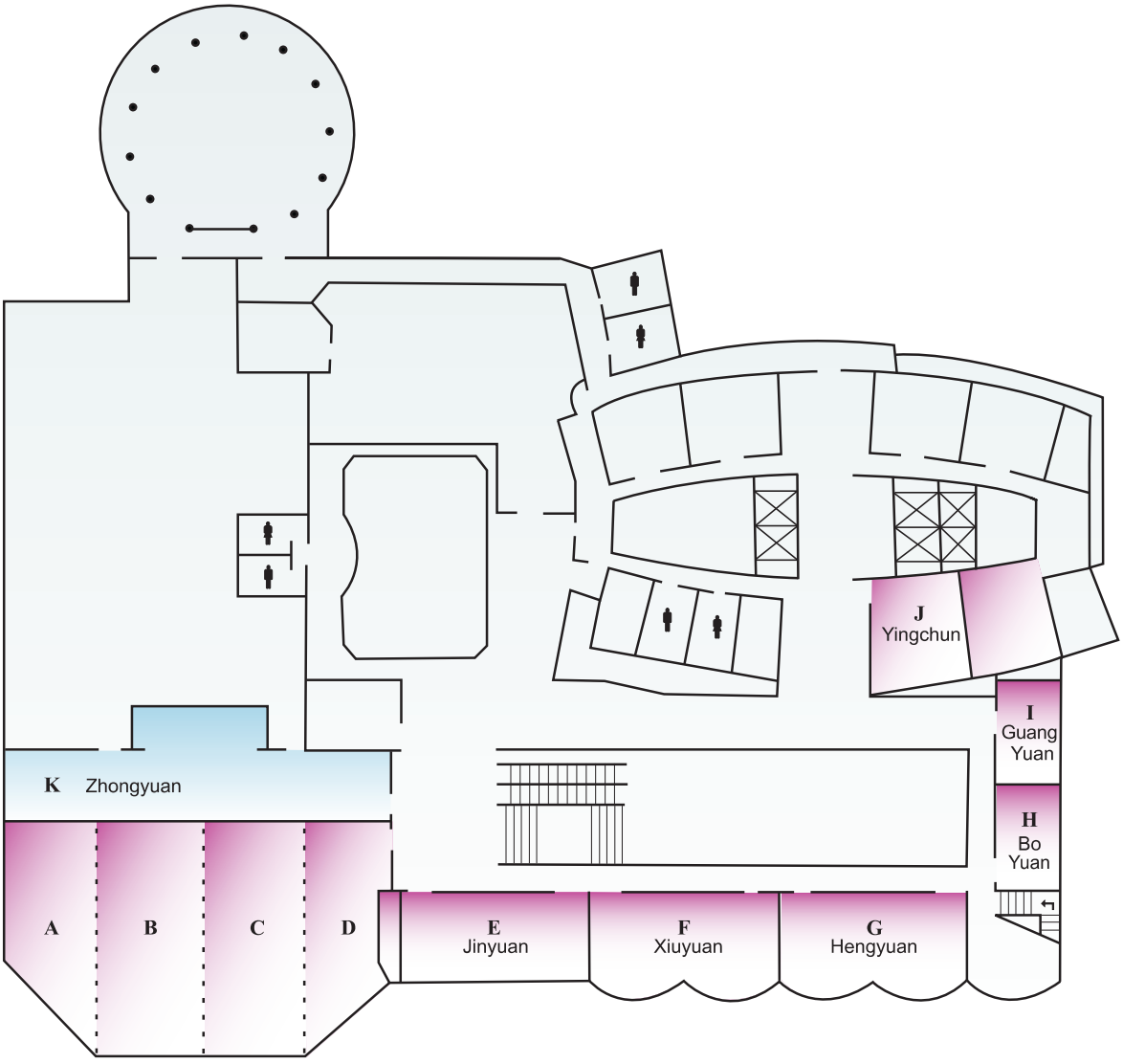
ELECTRICITY

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

MAP OF CONFERENCE SITE



Hotel Lobby & Check-In Desk



Hotel Meeting Floor 2

PIERS 2007 BEIJING TECHNICAL PROGRAM

Session 1A1
NSFC Workshop on Metamaterials 1

Monday AM, March 26, 2007

Room C (Zhongyuan)

Chaired by Shanjia Xu, Daozhong Zhang

08:00 Design of a Compact 5-bit Time Delay Module with Left-handed Transmission Lines
Qi Zhu, Lijun Chen, Wenhui Mao, Shanjia Xu,

08:20 Design of Left-handed Time Delay Lines
Lijun Chen, Qi Zhu, Shanjia Xu,

08:40 Equivalency of Left-handed Materials and Left-handed Transmission Lines
Qi Zhu, Lu Han, Shanjia Xu,

09:00 Design of Left-handed Microstrip Antenna
Qi Zhu, Wei Lu, Shanjia Xu,

09:20 New Microstrip Filters With Composite Right/Left-handed Transmission Line
Qi Zhu, Yuanfeng She, Shanjia Xu,

09:40 Analyzing of Coupling Region for CRLH/RH TL Coupler with Lumped-elements
Y. Wang, Y. Zhang, F. Liu,

10:00 **Coffee Break**

10:20 Experimental Demonstration of Non-near-field Image Formed by Negative Refraction
Zhifang Feng, Xiangdong Zhang, Kun Ren, Shuai Feng, Zhi-Yuan Li, Bingying Cheng, Daozhong Zhang,

10:40 Imaging Properties of a Superlens Based on Metal-dielectric Composites of Nonspherical Particles
Lei Gao,

11:00 Anisotropic Perfect Lens Configuration: Sub-diffraction Imaging through Compensated Bilayer of Anisotropic Metamaterials
Yijun Feng,

11:20 Relativistic Energy Loss and Induced Photon Emission in the Interaction of a Left-handed Sphere with an External Electron Beam
Xiangdong Zhang, Jinying Xu,

Session 1A2
Polarimetric Radar Remote Sensing

Monday AM, March 26, 2007

Room B (Zhongyuan)

Organized by Jian Yang

Chaired by Jian Yang

08:20 Principal Component Analysis (PCA) in the Context of Radar Polarimetry
W.-M. Boerner, E. Lüneburg, A. Danklmayer,

08:40 On the Geršgorin Theorem Applied to Radar Polarimetry
E. Lüneburg, A. Danklmayer, W.-M. Boerner,

09:00 Multitemporal C-Band Radar Measurement on Rice Fields
Ka-Sing Lim, Chue-Poh Tan, Jun-Yi Koay, Voon-Chet Koo, Hong-Tat Ewe, Yew-Chiong Lo, Azmah Ali,

09:20 An Unsupervised Classification Using IHSL Transform, FCM Algorithm and XB Index for Fully Polarimetric SAR Data
Fang Cao, Wen Hong, Yirong Wu,

09:40 A Hybrid Entropy Decomposition and Support Vector Machine Method for Agricultural Crop Type Classification
Chue-Poh Tan, Hong-Tat Ewe, Hean-Teik Chuah,

10:00 **Coffee Break**

10:20 Iteration Based Polarimetric SAR Image Classification
Jian Yang, Xiaoli She, Tao Xiong,

10:40 Coherence Enhancement for Polarimetric SAR Interferometry
Tao Xiong, Jian Yang, Weijie Zhang, Yoshio Yamaguchi, Hiroyoshi Yamada,

11:00 Initial Polarimetric Calibration Results of ALOS PALSAR
T. Moriyama, M. Shimada, M. Watanabe,

11:20 Classification of Targets on Road by Fully Polarimetric and Real-time FM-CW Radar
J. Nakamura, M. Ikarashi, K. Aoyama, M. Mitamura, Y. Yamaguchi, H. Yamada, N. Yamada, Y. Uehara,

11:40 Polarimetric Observation of the Trees in the X and Ku-band by FM-CW SAR System
K. Aoyama, M. Ikarashi, J. Nakamura, Y. Yamaguchi, H. Yamada,

Session 1A3
Periodical Structure, EM Theory and Applications

Monday AM, March 26, 2007

Room A (Zhongyuan)

Chaired by Kiyotoshi Yasumoto, Hean-Teik Chuah

08:00 Analysis of Circular Waveguide Periodically Filled with Magnetized Ferrite
K. Yasumoto, T. Terasaka,

08:20 Frozen Modes in Periodic Dielectric Structures
A. Figotin, I. Vitebskiy,

08:40 Application of the Array Scanning Method to 1D-periodic Microstrip Lines
R. Rodríguez-Berral, F. Mesa, P. Baccarelli, P. Burghignoli,

09:00 Closed-form Expressions for Layered Media Green's Functions that are Reliable Both in the Near Field and in the Far Field
R. R. Boix, F. L. Mesa, F. Medina,

09:20 Coupling of Microstrip Lines Exciting the Magnetostatic Surface Waves
Jae-Hyun Lee,

09:40 Analyses of Multimode Forming Process in a Microwave-heating Cavity
Jirun Luo,

10:00 **Coffee Break**

10:20 Electromagnetic Momentum in Dielectrics — Abraham-Minkowski and All That
R. N. C. Pfeifer, T. A. Nieminen,

10:40 Continuous Time Model Predictive Control for a Magnetic Bearing System
Jianming Huang, Liuping Wang, Yang Huang,

11:00 Several Rules about the Magnetic Moment of Rotational Charged Bodies
Guo-Quan Zhou,

11:20 Key Technologies of Magnetic Confinement Superconducting Tokamak Device
Songtao Wu, Weiyue Wu, Yingnan Pan, Damao Yao, Wenge Chen, Wanjiang Pan, Siyue Chen, Peide Weng, Mingda Gao, Yuanxi Wan,

Session 1A4
Safety Issues of Wireless Communication

Monday AM, March 26, 2007

Room D (Zhongyuan)

Organized by Chung-Kwang Chou

Chaired by Chung-Kwang Chou

08:40 Studying the Accuracy of FDTD Analysis for Human Exposure Evaluations in the Vicinity of a Base Station Antenna
S. Ilvonen, K. Karkkainen, T. Uusitupa, I. Laakso, K. Nikoskinen,

09:00 Electromagnetic Field Estimations Considering of Implantable Cardiac Pacemaker EMI from Cellular Radios in Elevators
Y. Abiko, L. Harris, T. Hikage, T. Nojima, A. Simba, S. Watanabe, T. Shinozuka,

09:20 A Study on Mobile Phone Attaching Positions and Usage Patterns by Korean Youngsters
Y. M. Gimm, S. B. Lee, H. T. Oh, Y. P. Kim,

09:40 The Effects of 884 MHz GSM Wireless Communication Signals on Self-reported Symptoms and Sleep — An Experimental Provocation Study
Bengt Arnetz, Torbjörn Åkerstedt, Lena Hillert, Arne Lowden, Niels Kuster, Clairy Wiholm,

10:00 **Coffee Break**

10:20 Behavioral and Cognitive Effects of MW Electromagnetic Field Exposures
Sheila A. Johnston,

10:40 Radiofrequency Exposure and Human Health
J. A. Elder, C-K. Chou, J. J. Morrissey,

11:00 International Standards to Regulate RF Exposure
C-K. Chou, R. C. Petersen,

Session 1AP
Poster Session 1

Monday AM, March 26, 2007
9:00 AM - 17:00 PM
Room K (Zhongyuan)

1 Unusual Transimission Properties of Waves in One-dimensional Random System Containing Left-handed Material
Yunxia Dong, *Xiangdong Zhang*,

2 Twin Tunneling Modes in Sandwich Structures with Symmetry Single-negative Media
J. W. Dong, *H. C. Huang*, *H. Z. Wang*,

3 Design Negative Index Materials with Ferrites
Rui-Xin Wu,

4 Design of Dual-linearly-polarized Microstrip Array with CRLT as Feed Line
Qi Zhu, *Lei Wu*, *Shanjia Xu*,

5 Improved Structures of Left-handed Transmission Line
Qi Zhu, *Fan Yu*, *Shanjia Xu*,

6 A New Frequency Selective Surface Composed of Left-handed Materials
Weihai Fang, *Shanjia Xu*,

7 Analysis of Scattering and Radiation Characteristics for Stepped Left-handed Slab Waveguide Operating in Evanescent Surface Mode
Meng Huang, *Shanjia Xu*,

8 A Novel Microstrip Antenna Array Fed with Composite Right-left Handed Transmission Line
Yan Li, *Shanjia Xu*, *Zhongxiang Zhang*,

9 A Novel Super Wideband Compact Filter Based on Dual-layer Left-handed Materials for Millimeter-wave Applications
Tao Lu, *Shanjia Xu*,

10 Leaky Characteristics of a Channel Guide Antenna Filled with Left-handed Material
Yongmei Pan, *Shanjia Xu*,

11 A Novel 2-D Uniplanar Structure Design with Composite Right-left Handed Transmission Line
Qingfeng Zhang, *Shanjia Xu*,

12 A Novel Feeding Network of 2-dimension Microstrip Patch Arrays with Composite Right/left-handed Transmission Lines
Zhongxiang Zhang, *Shanjia Xu*,

13 Design of High Power Phase Shifter with Left-handed Transmission Line
Qi Zhu, *Shaoyong Wang*, *Jun Zhang*, *Shanjia Xu*,

14 The Loss and Chromatic Dispersion Characteristics of the Microstructured Optical Fibres with Large Mode Area
Yuanyuan Zhao, *Shuguang Li*, *Zhiyuan Zhang*, *Tianfu Xu*,

15 Numerical Simulation and Analysis on Mode Property of Photonic Crystal Fiber with High Birefringence by Fast Multipole Method
Wei Song, *Yuanyuan Zhao*, *Yu Bao*, *Shuguang Li*, *Zhiyuan Zhang*, *Tianfu Xu*,

16 A Comparison of Performance of Four Methods in Solving Time Domain Integral Equations for Arbitrarily Shaped Conducting Bodies
Xinpu Guan, *Shaogang Wang*, *Yi Su*, *Junjie Mao*,

17 A Method to Reduce the Oscillations of the Solution of Time Domain Integral Equation Using Laguerre Polynomials
Xinpu Guan, *Shaogang Wang*, *Yi Su*, *Junjie Mao*,

18 An Integer-N Frequency Synthesizer Applied to MB-OFDM UWB 5th Band Group
Cheng-Chan Tien, *Tsung-Mo Tien*, *Christina F. Jou*,

19 Effective Conductivities for Both Sides of Copper Foil Coating Surface of Dielectric Substrate at 60 GHz
F. Kuroki, *R. Masumoto*, *R. Tamaru*,

20 Transition between NRD Guide and Microstrip Line with Low Permittivity Dielectric Substrate at 60 GHz
F. Kuroki, *H. Sugimoto*, *T. Yoneyama*,

21 A Primary Radiator Using Vertical Strip Transmission Line for Millimeter-wave Planar Antenna Applications
F. Kuroki, *M. Okiyokota*,

22 A Comparator Applied in Current Detect of Synchronous Rectifications
Maomao Sun, *Quanyuan Feng*, *Hongbo Ma*,

23 Single-end Measurement of Polarization Mode Dispersion in Optical Fibers with Polarization-dependent Loss
H. Dong, *P. Shum*,

24 Advances in Signal Processing to Reduce Lift-off Noise in Eddy Current Tests
M. Cacciola, *A. Gasparics*, *F. C. Morabito*, *M. Versaci*, *V. Barrile*,

25 A Compact Printed Antenna with Band-stop Characteristic for UWB Application
Seokjin Hong, *Heejun Lee*, *Soonyong Lee*, *Jaehoon Choi*,

26 A Low-power Quadrature VCO Using Current-reused Technique and Back-gate Coupling
Yu-Ching Tsai, Yi-Shing Shen, Christina. F. Jou,

27 A Fully-integrated, Low Power, Fast-locking, Integer-N Frequency Synthesizer for MB-OFDM UWB System
Shih-Hao Tarng, Yu-Ching Tsai, Christina. F. Jou,

28 A 0.7 V Transformer-feedback CMOS Low-noise Amplifier for 5-GHz Wireless LAN
H. I. Wu, R. S. Fan, C. F. Jou,

29 A 0.75 V CMOS Low-noise Amplifier for Ultra Wideband Wireless Receiver
Hui-I. Wu, Zi Hao Hsiung, Christina F. Jou,

30 Adaptive Selection of Sampling Interval in Frequency Domain for Estimating the Poles of Scatterers
Shaogang Wang, Xinpu Guan, Dangwei Wang, Xingyi Ma, Yi Su,

31 Bandwidth Enhancement Technique in Microstrip Antenna for Wireless Applications
RSA Raja Abdullah, D. Yoharaaj, Alyani Ismail,

32 Geometry of the Scattering Disc in Physical Channel Modeling
Mohammed T. Simsim, Noor M. Khan, Rodica Ramer,

33 Design and Analysis of the Novel Test Tube Magnet for Portable NMR Device
Jizhong Chen, Yiming Zhang, Jijun Xiao,

34 Optimization Method for Passive Pole Pieces Design
Le Wang, Haitao Zhu, Xiaoyu Song, Zhe Jin, Xin Tang, Weiming Wang,

35 Verification of BGA Package in RF Application
Zhihong Dong, Zhiping Yu,

36 Measurement of Radio Frequency Magnetic Field
K. Bartusek, E. Gescheidtova,

37 Temporal Analysis of Visual Search Task by Transcranial Magnetic Stimulation
Sheng Ge, Shoogo Ueno, Keiji Iramina,

38 Excitation of Hypersound Due to Coupling with Space Charge Waves in GaN Films
V. V. Grimalsky, S. V. Koshevaya, L. M. Gaggero-S., F. Diaz-A.,

39 Electron Spectrum of Single n-type δ-doped Quantum Wells in Si
I. Rodriguez-Vargas, L. M. Gaggero-Sager, V. V. Grimalsky, M. E. Mora-Ramos, R. Pérez-Alvarez1,

40 Shielding Design for Power Frequency Magnetic Field Produced by Substations
Haiyu Yu, Li Hao, Jiansheng Yuan,

41 Analytical Design and Simulation Rescaling of Magnetically Insulated Transmission Lines
Xiangmin Jin, Jiansheng Yuan,

42 Analysis on the Shielding Effect of the Power Transformer Tank
Duo Chen, Haiyu Yu, Jiansheng Yuan,

43 A Miniaturized 2.45 GHz RFID Tag Antenna Using Planar Impedance Transformer
Zhiguang Fan, Shan Qiao, Jiangtao Huangfu, Lixin Ran,

44 Simulation Study for the Decoding of UHF RFID Signals
Shengli Wang, Shan Qiao, Shaoyuan Zheng, Zhiguang Fan, Jiangtao Huangfu, Lixin Ran,

45 A System Design for the Reader of Microwave Radio Frequency Identification
Changzhan Gu, Zhiguang Fan, Shaoyuan Zheng, Jiangtao Huangfu, Lixin Ran,

46 Effects of Giant Optical Anisotropy in R-plane GaN/AlGaN Quantum Wells by Valence Band Mixing
Chun-Nan Chen, Kao-Feng Yarn, Win-Jet Luo, Jih-Chen Chiang, Ikai Lo, Wan-Tsang Wang, Ming-Hong Gau, Hsiu-Fen Kao, Meng-En Lee, Wei-Ching Chuang, Wen-Chung Chang, Tsung-Chan Cheng,

47 Monitoring the Earth, Ocean, and Atmosphere with Hyperspectral Remote Sensors
Daniel K. Zhou,

48 Determination of the Border for Resistive Oil and Gas Reservoir by Parameter of Deviation Rate
Jingtian Tang, Jifeng Zhang, Bing Feng, Ye Wang,

Session 1P1
NSFC Workshop on Metamaterials 2

Monday PM, March 26, 2007

Room C (Zhongyuan)

Chaired by Ji Zhou, Lixin Ran

13:20 Active Controllable Single Side Double S-shaped Metamaterial
Dongxing Wang, Lixin Ran, Hongsheng Chen, Bae-Ian Wu, Tomasz M. Grzegorczyk, Jin Au Kong,

13:40 Isolation Study in Antenna Systems Using Left-handed Metamaterials
James Chen, Hongsheng Chen, Bae-Ian Wu, Jin Au Kong, Tomasz M. Grzegorczyk,

14:00 Two-dimensional Cross Embedded Metamaterials
J. Zhang, *H. Chen*, *L. Ran*, *Y. Luo*, *J. A. Kong*,

14:20 Negative Refractive Metamaterial Composite of Pure Dielectric Resonators
Liang Peng, *Lixin Ran*, *Hongsheng Chen*, *Haifei Zhang*, *Tomasz M. Grzegorczyk*, *Jin Au Kong*,

14:40 Experimental Study of the Transmission Property of Anisotropic Left-handed Materials
Hai Fei Zhang, *Yu Zhong*, *Li Xin Ran*, *Jin Au Kong*,

15:00 **Coffee Break**

15:20 Realization of Left-handed Materials Using Ferroic Materials
Yang Bai, *Ji Zhou*, *Bo Li*, *Lijie Qiao*,

15:40 Tunable Metamaterials Based on Nematic Liquid Crystals
Qian Zhao, *Lei Kang*, *Bo Du*, *Bo Li*, *Ji Zhou*,

16:00 Rigorous Study of the Magnetic Resonances in Metallic Double Split Rings: Lower Frequency Limit and Bi-anisotropy
Lei Zhou, *S. T. Chui*, *C. T. Chan*,

16:20 Negative Refraction in Composites with Array of Coplanar Metallic Double Rings
Xingye Ji, *Ping Chen*, *Rui-Xin Wu*,

16:40 Frequency Selectivity of THz Transimission of Subwavelength Metal Fractal Structures
Guozhong Zhao, *Yan Tian*, *Cunlin Zhang*, *Guozhen Yang*,

Session 1P2a
Rough Surface Scattering and Related Phenomena

Monday PM, March 26, 2007

Room B (Zhongyuan)

Organized by Zu-Han Gu, Michel Josse

Chaired by Zu-Han Gu, Michel Josse

13:00 Inverse Scattering for a 1-D Surface Reconstruction
Zu-Han Gu, *Anting Wang*,

13:20 Control of Coherence of Laser Beam for Optical Communication in Turbulent Atmosphere
Zu-Han Gu,

13:40 Transfer Process of Power between Cores in a Random Waveguide System
Akira Komiyama,

14:00 Control of the Coherence of the Light Scattered from a Two-dimensional Randomly Rough Surface
Tamara A. Leskova, *Alexei A. Maradudin*, *Eugenio R. Méndez*, *Zu-Han Gu*,

14:20 The Use of Broad Band Illumination in Place of Ensemble Averaging for Averaging over Speckles in Rough Surface Scattering
A. A. Maradudin, *Tamara A. Leskova*, *Eugenio R. Méndez*, *Zu-Han Gu*,

14:40 Spectral Changes of Stochastic Electromagnetic Beams on Propagation in Turbulent Atmosphere
Jixiong Pu, *Olga Korotkova*, *Emil Wolf*, *Lifeng Shi*, *Ziyang Chen*, *Tao Wang*,

15:00 **Coffee Break**

Session 1P2b
Remote Sensing and Scattering

Monday PM, March 26, 2007

Room B (Zhongyuan)

Chaired by Paolo Pampaloni, Martti Hallikainen

15:20 Bistatic Electromagnetic Scattering from Randomly Rough Surfaces
Y. Du, *H. Y. Chen*, *Y. Qi*, *J. A. Kong*,

15:40 Monitoring of Satellite Thermal Plareau in Relation to Concentration of Infrared Beams out of Sea Surface Waves
S. Nakamura,

16:00 Monitoring Satellite Thermal Pinnacle in Relation to Spacial Spectrum of Sea Surface Waves
S. Nakamura,

16:20 Data-derived SEA for Time Domain EMI Sensing of UXO
K. Sun, *K O'Neill*, *B. E. Barrowes*, *F. Shubitidze*, *I. Shamatava*, *J. P. Fernández*, *K. D. Paulsen*,

16:40 Automated Passive Ground Remote Surveillance of Critical Oil & Gas Transport Infrastructures
Karl F. Kaspareck, *E. Poggiagliolmi*,

17:00 The Iterative Classification Method Based on Unsupervised Classification of Fully Polarimetric SAR Images
Xiu-Qing Liu, *Ru-Liang Yang*,

Session 1P3a
Theory of Debye plasmas, Screened Coulomb Potentials, Radiation from Weakly Coupled Plasmas

Monday PM, March 26, 2007

Room A (Zhongyuan)

Organized by Peter Winkler

Chaired by Peter Winkler, Werner Dappen

13:20 Bound States and Resonance States of H^- and He Embedded in Debye Plasma Environments
Sabyasachi Kar, *Y. K. Ho*,

13:40 The Use of the Virial Theorem and Sum-rules in Atomic Structure Calculations
Krishna Lamichhane, *Peter Winkler*,

14:00 Line-broadening due to Plasma Fluctuations
Peter Winkler,

14:20 X-ray Line Emission from Weakly Coupled Plasmas
R. C. Mancini,

14:40 Coulomb Screening in Solar Physics
Werner Dappen,

15:00 **Coffee Break**

Session 1P3b
Optical Fiber and Wireless Communication

Monday PM, March 26, 2007

Room A (Zhongyuan)

Organized by Weiwei Hu

Chaired by Zhigang Zhang, Weiwei Hu

15:20 Stochastic Perturbation of Parabolic Law Optical Solitons
Anjan Biswas,

15:40 Dynamic Response of Discrete Fiber Raman Amplifiers to Multi-channel Randomly Variable Packet Traffic
Johann Gest, *Lawrence R. Chen*,

16:00 An Implementation of Novel Numerical Method for Generating Differential Group Delay Distribution in Single Mode Fibers
Abhijit S. Chitambar, *K. Sivaprasad*, *Charles H. Bianchi*,

16:20 The Branly Effect Elucidated
C. Hirlimann,

16:40 A Faster Approximation of Forward Scattering by Gradient-index Particles
Xiangzhen Li, *Xiang'e Han*, *Renxian Li*, *Huifen Jiang*,

17:00 An optimized Scheme for Optical Phased Array Beam Steering Controlled by Wavelength
Ying Zhao, *Xiaozhou Yang*, *Qin Cai*, *Weiwei Hu*,

17:20 A Structure Design for the Expansion of Fiber Element Radiation Scope in Optical Phased Array
Yanyun Yang, *Cheng Hong*, *Weiwei Hu*, *Anshi Xu*,

Session 1P4
New Challenges and Opportunities in Computational Electromagnetics

Monday PM, March 26, 2007

Room D (Zhongyuan)

Organized by Jianming Jin, Dan Jiao

Chaired by Jianming Jin, Dan Jiao

13:20 A Diagonal Split-cell Model for the High-order Symplectic FDTD Scheme
Wei Sha, *Xianliang Wu*, *Mingsheng Chen*,

13:40 Multi-physics Simulations of Ion Trap Chemical Sensing
Wei Xu, *Meng Yu*, *Zheng Ouyang*, *R. Graham Cooks*, *William Chappell*,

14:00 Parallel Computational Electromagnetic Method, PCEM, for IC Interconnect and Packaging Analysis
L. J. Jiang, *J. D. Morsey*, *B. J. Rubin*, *A. Deutsch*,

14:20 Application of Numerical Electromagnetics to Power Delivery Design in ULSI
Sourav Chakravarty,

14:40 A Highly Efficient Finite Element Domain Decomposition Method for Analysis of Large-scale Photonic Crystal Problems
Y. J. Li, *J.-M. Jin*,

15:00 **Coffee Break**

15:20 On High-capacity Computational Electromagnetic Solutions for Future High-speed IC Design
Dan Jiao, *Changhong Dai*, *Shiuh-Wuu Lee*,

15:40 Applying Equivalence Principle Algorithm in Mixed Scale Electromagnetic Problems
Weng Cho Chew, *Mao-Kun Li*,

16:00 2nd Order ABC in Vector Finite Element Methods for Inhomogeneous Media
Seung-Cheol Lee, *Vineet Rawat*, *Jin-Fa Lee*,

16:20 Application of Rational Function Approximation Technique to Hybrid FE/BI/MLFMA for 3D Scattering
Zhen Peng, Xin-Qing Sheng,

16:40 A Twofold Iterative Algorithm with Multilevel ILU Preconditioning of Hybrid FE/BI/MLFMA for 3D Scattering
Zhen Peng, Xin-Qing Sheng,

Session 1P5
Inverse Problem in the Mechanics, Materials and Electromagnetics

Monday PM, March 26, 2007

Room E (Jinyuan)

Organized by Ganquan Xie, Jianhua Li

Chaired by Ganquan Xie, Jianhua Li, Hai-Tao Cai

13:00 A GL Metro Carlo EM Inversion
Ganquan Xie, Jianhua Li, Lee Xie, Feng Xie,

13:20 A 3D GL EM Modeling and Inversion for Forest Exploration and Felling
Jianhua Li, Ganquan Xie, Lee Xie, Feng Xie,

13:40 GL Electromagnetic Field Modeling and Inversion in Communication of the Deer
Jianhua Li, Feng Xie, Lee Xie, Jing Li, Ganquan Xie,

14:00 The Problem of an Elastic Wave on Magnetic Field
Hai-Tao Cai,

14:20 The Application of BP Neural Network for the Forecast of EEG Signal
Muzhou Hou, Xuli Han, Xian Huang,

14:40 Multi-grid Method of Quasi Elastic Fluid Flow
Xuequan Li, Haitao Cai, Hongwei Zhang, Yinghao Cai,

15:00 **Coffee Break**

15:20 Result Concerning Delay-Dependent Exponential Stability of Delayed Neural Networks
Xin-Ge Liu, Hai-Tao Cai, Mei-Lan Tang,

15:40 The Electromagnetic Stirring System in the Continuous Casting
J. Li, G. Xie, J. H. Li, Z. Q. Liao, H. H. Li,

16:00 Thermal Stress Analysis of Functionally Graded Cemented Carbides
Ziqian Huang, Haitao Cai, Baiyun Huang,

16:20 Magnetic Resonance Electrical Impedance Tomography
Jijun Liu,

16:40 Inversion of the Wideband High-frequency Electromagnetic Data
S. T. Zheng, Z. F. Zeng, S. X. Liu, F. S. Liu,

17:00 Nondestructive Testing in Mechanical Engineering by Wave Inversion
Chien-Chang Lin, Ganquan Xie, Jianhua Li,

Session 2A1
Novel Theoretical Advances and Potential Applications of Metamaterials

Tuesday AM, March 27, 2007

Room C (Zhongyuan)

Organized by Jan Zehentner, Nader Engheta

Chaired by Jan Zehentner, Nader Engheta

08:00 Wave Propagation along Periodic Arrays and Lattices of Metamaterial Particles with Dominant Higher-order Multipolar Polarizabilities
Jingjing Li, Andrea Alù, Nader Engheta,

08:20 Particular Properties in the Dielectric Response of Negative-permittivity Scatterers
A. Sihvola,

08:40 Characterization of Resonant Modes in a Cube of SRR's
J. D. Baena, L. Jelinek, R. Marqués, J. Zehentner,

09:00 Accurate Analysis of Metamaterials Involving Finite Arrays of Split-ring Resonators and Thin Wires
Levent Gürel, "nobreakspaceÖzgür Ergül, Alper Ünal,

09:20 A Magnetic Metamaterial Composed of Randomly Oriented SRRs
L. Jelínek, J. Macháč, J. Zehentner,

09:40 Quasi-isotropic Frequency Selective Surface
J. D. Baena, J. Mock, L. Jelinek, J. Gollub, D. R. Smith, R. Marqués,

10:00 **Coffee Break**

10:20 Novel Metamaterial Coupled-line Couplers: Theory and Implementations
C. Caloz, H. V. Nguyen, Y. Zhang,

10:40 Compact Rat-race Hybrid Based on Complementary Split Rings Resonators
G. Sisó, J. Bonache, M. Gil, I. Gil, J. García-García, F. Martin,

11:00 High-pass Filters Implemented by Composite Right/Left Handed (CRLH) Transmission Lines Based on Complementary Split Rings Resonators (CSRRs)
Marta Gil, *Jordi Bonache*, *Jordi Selga*, *Joan García-García*, *Ferran Martín*,

11:20 Novel Reconfigurable Left-handed Unit Cell for Filter Applications
Branka Jokanovic, *Vesna Crnojevic-Bengin*,

11:40 A CRLH Microstrip Delay Line for High-speed Electronic Circuits
S. Sebak, *L. Zhu*, *V. K. Devabhaktuni*, *C. Wang*,

Session 2A2
Remote Sensing of Water Cycle Related Components

Tuesday AM, March 27, 2007

Room B (Zhongyuan)

Organized by Jiancheng Shi

Chaired by Jiancheng Shi, Kun-Shan Chen

08:20 Design and Application of a VNA-based Polarimetric SAR for Deep Soil Moisture Estimation
Wenji Zhang, *Xiaojuan Zhang*,

08:40 Inversion of Permittivities for Layered Rough Surfaces
Xiaorong Lu, *Xiaojuan Zhang*, *Guangyou Fang*,

09:00 A Study on Soil Moisture Estimation with AMSR-E
Jiancheng Shi, *Tom Jackson*, *K. S. Chen*,

09:20 Soil Moisture Algorithm Validation with Ground Based Networks
T. J. Jackson, *M. H. Cosh*, *R. Bindlish*, *J. Du*, *X. Zhan*,

09:40 Effect of Surface Layer Soil Moisture Change Assimilation on the Accuracy of Soil Moisture State Estimated by a Land Surface Model
Ujjwal Narayan, *Venkat Lakshmi*, *Thomas J. Jackson*,

10:00 **Coffee Break**

10:20 Influence of Vegetation Water Content on Scattering Characteristics of Leaves at 19 and 37 GHz Frequencies
Bing Lin, *Wenbo Sun*, *Qilong Min*,

10:40 Experimental Results from a Microwave Multifrequency Radiometer Campaign of Seasonal Snow
Martti Hallikainen, *Panu Lahtinen*, *Timo Piepponen*, *Lauri Honkavaara*, *Aleksis Schäfer*,

11:00 Monitoring Snow Cover Characteristics with Multifrequency Radiometers
M. Brogioni, *G. Macelloni*, *S. Paloscia*, *P. Pampaloni*, *S. Pettinato*, *E. Santi*,

11:20 Validation of Diurnal Cycle and Intra-seasonal Variability of TRMM Satellite Rainfall
Yimin Ji,

Session 2A3
Optical Matter: Modeling and Experimental Realizations 1

Tuesday AM, March 27, 2007

Room A (Zhongyuan)

Organized by Jean-Marc R. Fournier, Tomasz M. Grzegorczyk

Chaired by Jean-Marc R. Fournier, Tomasz M. Grzegorczyk

08:40 Using Optofluidics for Biosensing
Changhuei Yang, *Demetri Psaltis*,

09:00 Interactive Bio-photonics Workstation for Manipulation and Observation in 3D
Jesper Glückstad,

09:20 Optical Trapping on Biological Samples and Its Combination with Other Fields in Optics
Enzo Di Fabrizio,

09:40 A Quantum Electrodynamical Understanding of Optical Binding
David L. Andrews,

10:00 **Coffee Break**

10:20 Optical Binding Force Characterization of Double-droplet Systems
M. Guillon, *B. Stout*,

10:40 Optical Binding
N. K. Metzger, *P. J. Reece*, *E. M. Wright*, *K. Dholakia*,

11:00 Interactions between Particles in an Optical Trap
S. Barland, *G. L. Lippi*, *R. Kaiser*, *J.-M. Fournier*,

11:20 Theoretical Study of Optical Forces and Binding
Jack Ng, *Zhifang Lin*, *Yurong Zhen*, *Zhihong Hang*, *C. T. Chan*, *Ping Sheng*,

Session 2A4
Extended/Unconventional Electromagnetic Theory, EHD/EMHD and Electrobiology 1

Tuesday AM, March 27, 2007

Room D (Zhongyuan)

Organized by Hiroshi Kikuchi

Chaired by Hiroshi Kikuchi, Dirk K. Callebaut

08:00 The Optimal Design of the LVDS Bus with High EMS
K. Radkovsky, M. Kaska, Z. Motycka, P. Drexler, T. Jirku, Z. Szabo, E. Kadlecova, P. Fiala,

08:20 A Passive Optical Location with Limited Range
P. Fiala, T. Jirku, R. Kubasek, P. Drexler, P. Konas,

08:40 Model of a Reactor Chamber with Microwave Heating
Petr Drexler, Tomáš Jirku, Zoltán Szabó, Pavel Fiala,

09:00 Design, Numerical Analysis and Test of HF Absorber
E. Kadlecová, P. Fiala, M. Zeman, M. Steinbauer, Z. Szabó,

09:20 Properties and Numerical Simulation of $CaCl_2.6H_2O$ Phase Change
I. Behunek, T. Bachorec, P. Fiala,

09:40 Turbulence Modeling of Air Flow in the Heat Accumulator Layer
I. Behunek, P. Fiala,

10:00 **Coffee Break**

10:20 Identifying of the Special Purpose Generator Pulses
P. Drexler, P. Fiala,

10:40 A Simple Numerical Simulation of Internal Structure of Particles Test
K. Bartusek, P. Fiala,

11:00 Numerical Model of Optimization of the Lead-acid Accumulator Grids
E. Kadlecova, I. Behunek, P. Fiala,

11:20 Numerical Modeling of the Special Light Source with Novel R-FEM Method
E. Kadlecova, P. Fiala,

11:40 Numerical Modeling of Accuracy of Air Ion Field Measurement
K. Bartušek, P. Fiala, T. Bachorec, E. Kadlecová,

Session 2A5
Microwave Applications in Material Processing and Characterization

Tuesday AM, March 27, 2007

Room E (Jinyuan)

Organized by Juh Tzeng Lue

Chaired by Juh Tzeng Lue, Cheng-Chung Chi

08:20 Microwave Applications in Growth and Physical Property Measurements of Nanomaterials
J. T. Lue, L. W. Chang, H. Y. Miao,

08:40 Complex Dielectric Measurement Using TM_{010} Cylindrical Cavity
Jing Li, C. Richard Liu,

09:00 Spectroscopic Characterization of $Ba(Mg_{1/3}Ta_{2/3})O_3$ Dielectrics for the Application to Microwave Communication
Hsiu-Fung Cheng, Chia-Ta Chia, Hsiang-Lin Liu, Mei-Yu Chen, Yuan-Tai Tzeng, I-Nan Lin,

09:20 Improving the Characteristics of $Ba_2Ti_9O_{20}$ Materials by Using Pre-reacted Ba-Ti-O Compounds
I-Nan Lin, Chi-Ben Chang, Keh-Chyang Leou,

09:40 Dynamic Responses of Carbon Nanotubes Probed with Optical and Terahertz Pulses
Che-Chia Chang, Kuo-Chien Hsu, Hsin-Chia Ho, Shyh-Shii Pai, Cheng-Chung Chi, Shih-Hao Tseng, Nyan-Hwa Tai,

10:00 **Coffee Break**

10:20 Low-temperature Crystallization of Lead Zirconate Titanate Thin Films Using 2.45 GHz Microwaves
T. H. Chang, Ankam Bhaskar, H. Y. Chang, S. Y. Cheng,

10:40 Raman Interpretation of Microwave Properties of $x\mathrm{Ba}(\mathrm{Mg}_{1/3}\mathrm{Ta}_{2/3})\mathrm{O}_3+(1-x)\mathrm{Sr}(\mathrm{Mg}_{1/3}\mathrm{Ta}_{2/3})\mathrm{O}_3$ Ceramics
C.-T. Chia, P.-J. Chang, I.-N. Lin, L.-J. Lin,

11:00 Synthesis of YAG:Ce Phosphor for LEDs by Microwave Sintering
R. S. Liu, I. Baginskiy, J. C. Lin, S. Y. Pu, T. C. Huang,

11:20 Electron Transport in Silicon Point-contact Structures
S. F. Hu, A. Souifi, C. Y. Huang,

11:40 Microwave Near-field Microscope Based on Ferrite-disk MSW Resonators
Michael Sigalov, E. O. Kamenetskii, Reuven Shavit,

Session 2A6a
Biomedical Applications of Light Scattering Methods

Tuesday AM, March 27, 2007

Room F (Xiuyuan)

Organized by Xin-Hua Hu, Gorden Videen

Chaired by Xin-Hua Hu, Gorden Videen

08:00 Femtosecond Biophotonics
Min Gu,

08:20 Image Subtraction Analysis for Finger Color Variation
I. Fujieda, *A. Hori*, *K. Tai*,

08:40 Influence of Micro-particle Surface Roughness on TAOS Patterns: Experimental and Theoretical Studies
Jean-Claude Auger, *Gustavo E. Fernandes*, *Yong-Le Pan*, *Kevin B. Aptowicz*, *Richard K. Chang*,

09:00 The Quest for Detection and Identification of Bioaerosols
Richard K. Chang, *Gustavo E. Fernandes*, *Yong-Le Pan*, *Kevin Aptowicz*, *Ronald G. Pinnick*,

09:20 Angle-resolved Measurement and Simulations of Mueller Matrix Elements of B-cells and HL60 cells
H. Ding, *J. Q. Lu*, *R. S. Brock*, *L. P. Burke*, *D. A. Weidner*, *T. J. McConnell*, *X. H. Hu*,

09:40 ***In Vivo*** Measurement and Modeling of Multispectral Reflectance Images for Melanoma Diagnosis
C. Chen, *K. M. Jacobs*, *J. Q. Lu*, *R. E. Cuenca*, *J. Finley*, *X. H. Hu*,

10:00 **Coffee Break**

Session 2A6b
Medical and Biolgical Applications of Microwaves

Tuesday AM, March 27, 2007

Room F (Xiuyuan)

Chaired by Jan Vrba, Alireza Baghai-Wadji

10:20 Treatment of Solid Malignant Tumors with Microwave Balloon Ablation Catheters and Localized Chemotherapy
Giorgio di Palma, *Ji-Bin Liu*, *Daniel D. Mawhinney*, *Ralph Meyer*, *Adolph Presser*, *Ernest L. Rosato*, *Arye Rosen*, *Fred Sterzer*,

10:40 Vibrational Medicine: A Closer Look at Homeopathics
S. D. R. Bruell,

11:00 Technical Aspects of Research on Interactions between EM Field and Biological Systems
Jan Vrba, *Luca Vannucci*, *Peter Peschke*, *Frantisek Vozeh*, *Max Vojtisek*,

11:20 Microwave Thermotherapy for Cancer Treatment
J. Vrba, *L. Oppl*, *J. Kvěch*, *J. Kubeš*,

11:40 Issues in Wireless Intracranial Pressure Monitoring at Microwave Frequencies
U. Kawoos, *R. V. Warty*, *F. A. Kralick*, *M. R. Tofighi*, *A. Rosen*,

Session 2A7
Electromagnetic Systems and Components for Defense and Security

Tuesday AM, March 27, 2007

Room G (Hengyuan)

Organized by Alberto Jose de Faro Orlando

Chaired by Alberto Jose de Faro Orlando, Fabio D. P. Alves

08:00 Characterization of the Efficiency of Radiation Absorbing Material by Measurement of RCS of Planes and Cylinder in Open Field
Samuel Machado Leal da Silva, *Alberto José de Faro Orlando*, *Mirabel Cerqueira Rezende*,

08:20 Simulation of a Wideband Pulsed Radar for Indoor Environments Using FDTD
Rubem G. Farias, *Victor Dmitriev*, *Francisco Carlos B. F. Müller*, *Domingos Savio das Virgens Alves*,

08:40 Propagation of Electromagnetic Waves in Amazon Rain Forest Environment
Domingos Sávio das Virgens Alves, *Alberto Joséde Faro Orlando*, *Victor Dmitriev*,

09:00 Development of a Methodology for Infrared Aircraft Emission Estimation
R. A. T. Santos, *C. G. R. Taranti*, *F. D. P. Alves*, *J. E. B. Oliveira*,

09:20 Measurements of Reflectivity and Complex Permittivities of Radar Absorbing Materials Based on Conducting Polymers
M. Franchitto, *A. J. F. Orlando*, *R. Faez*, *M. C. Rezende*, *I. M. Martin*,

09:40 Fast Variable Optical Attenuator Using Double Acousto-optic Modulator and Applications
Gefeson Mendes Pacheco,

10:00 **Coffee Break**

10:20 Designing of Wide Band Electrooptic Phase Modulators with Asymmetric CPS Electrodes
Cláudio Kitano, JoséEdimar B. Oliveira,

10:40 Practical Aspects of the Characterization of Ferrite Absorber Using One-port Device at RF Frequencies
A. Côrtes, A. C. C. Migliano, V. L. O. Brito, A. J. F. Orlando,

11:00 NIR, MWIR and LWIR Quantum Well Infrared Photodetector using Interband and Intersubband Transitions
Fabio Durante P. Alves, G. Karunasiri, N. Hanson, M. Byloos, H. C. Liu, A. Bezinger, M. Buchanan, R. A. T. Santos,

11:20 Adaptive Multiple Target Tracking Systems for Airfield Surveillance Radar
H. Deng, P. F. Wang,

11:40 A Fully-packaged Longwave Infrared (LWIR) Quantum Dot Photodetector with High Photodetectivity
Xuejun Lu, Jarrod Vaillancourt, Mark J. Meisner,

Session 2AP
Poster Session 2

Tuesday AM, March 27, 2007
9:00 AM - 17:00 PM
Room K (Zhongyuan)

1 The Features of the Angular Spectrum of Scattered Radiation by Turbulent Collisional Anisotropic Magnetized Plasma
G. V. Jandieri, I. B. Shirokov, V. G. Jandieri, Z. M. Diasamidze,

2 Occupational Exposure Assessment of the Static Magnetic Flux Density Generated by Nuclear Magnetic Resonance Spectroscopy for Biochemical Purposes
Gilbert Decat,

3 A Memory-efficient Strategy for the FDTD Implementation Applied to the Photonic Crystals Problems
Yu Liu, Ziqiang Yang, Zheng Liang,

4 Fast Computation of Electromagnetic Wave Propagation and Scattering for Quasi-cylindrical Geometry
Shaolin Liao,

5 On the Validity of Physical Optics for Narrow-band Beam Scattering and Diffraction from the Open Cylindrical Surface
Shaolin Liao,

6 Beam-shaping PEC Mirror Phase Corrector Design
Shaolin Liao,

7 A Novel Time-domain Integration Method for Transient Analysis of Nonuniform Transmission Lines
M. Tang, J. F. Mao, X. C. Li,

8 Building Optimal Statistical Models with the Parabolic Equation Method
M. Le Palud,

9 Echo Extraction Method for a Ground Penetrating Radar
Yiwei He, Hiroshi Mitsumoto, Zhongquan Ren,

10 Reaction Sintering Process for Improving the Microwave Dielectric Properties of $Ba_2Ti_9O_{20}$ Materials
Ya-Ju Chu, I-Nan Lin,

11 The Study on Anti-jamming Capability of UTP Applied in Vehicle CAN Bus
Longshan Yang, Junzhi Zhang, Lifang Wang,

12 The Growth of Multiwall Carbon Nanotubes by Microwave Plasma Enhanced Chemical Vapour Deposition
L. W. Chang, J. T. Lue, H. Y. Miao,

13 The Quasi-elliptic Bandpass Filter Using Quarter-wavelength Stepped Impedance Resonators
Yu-Wei Chen, Yen-Ju Liu, Min-Hua Ho,

14 New Type Piezomagnetic Ferrite Materials and Their New Applications
Quanlu Li, Yuan Li,

15 Debye Series Analysis of Forward Scattering by a Multi-layered Sphere
Renxian Li, Xiang'e Han,

16 Comparison of Two Drain Modulator for Multi-mode Multi-band Transmitters Employing EER Technique
G. Filice, V. Ferrara,

17 Electronic Structure as a Function of Temperature for Si δ-doped Quantum Wells in GaAs
L. M. Gaggero-Sager, N. Moreno-Martinez, I. Rodriguez-Vargas, R. Pérez-Alvarez, V. V. Grimalsky, M. E. Mora-Ramos,

18 p-n-p δ-doped Quantum Wells in GaAs
L. M. Gaggero-Sager, I. Rodriguez-Vargas,

19 Dynamic Behaviors of PbS Irradiated by Laser Pulse
Jinjing Feng, Jixiang Yan, Shouhuan Zhou,

20 Dynamic Behavior of a Mono-coil Linear Actuator
A. K. Aguillar, J. P. A. Bastos, N. Sadowski, N. J. Batistela,

21 A Novel Design of Narrow Band Filter for Harmonic Generation in Nonlinear Optics
J. J. Wu, T. J. Yang,

22 Time Variant Thresholds — Automatic Adjustment When Filtering Signals in MR Tomography
E. Gescheidtova, R. Kubasek, Z. Smekal, K. Bartusek,

23 A Slotted Coaxial Antenna as an Alternative to Wire Dipole Antennas
M. B. Perotoni, S. E. Barbin,

24 Towards −1 Effective Index with Metallo-dielectric Multilayer
Haitao Jiang, Boris Gralak,

25 Study of Certain Subband-based Adaptive Modulation Schemes in an OFDM System
L. J. Shi, L. Rong, R. F. Lin, Y. Du,

26 Study of the Optimal Switching Levels of Adaptive Modulation for a Two-user System under Constant Power Condition
L. M. Fang, L. Rong, R. F. Lin, Y. Du,

27 Backbone Network Logical Design for Connecting between Sub-networks with WDM System
Amornrat Mahaprom, Noppin Anantrasirichai,

28 Laser Speckle Imaging of a Finger by Scattered Light Optics
A. Kuramoto, A. Hori, I. Fujieda,

29 Electrokinetic Mixing Using Electrical Conductivity Gradients and Electric Field Intensity Perturbations
Win-Jet Luo, Kuo-Ching Chang, Kao-Feng Yarn, Shou-Ping Hsu, I-Ting Hsieh, Jian-Cheng Chen,

30 Modified Plane Wave Expansion Method for the Analysis of Two-dimensional Highly-dispersive Photonic Crystals
K.-H. Chi, W.-L. Yeh, Y.-P. Chiou,

31 Design of a Warehouse Management System Based on RFID
X. Q. Lian, S. H. Ji,

32 Algorithms for Blocking Reclosing onto Permanent Faults and Fault Distance Calculation in DC Traction Power Supply System
Shengtao Fan, Yunhua Li, Xiaqing Li, Shuyou Guo,

33 Nonintrusive Measurement of Electrical Conductivity for a Eucalyptus Fire
Kgakgamatso Mphale, Mal. Heron,

34 Absorption of Microwaves in a Low Intensity Poplar Gum Bark Fire
Kgakgamatso Mphale, Mal. Heron,

35 Numerical Analysis of Curved Surface Perforated Periodically with Apertures
Yulian Liu, Qiang Zhang, Mingchun Hu, Tie Gao,

36 Nano Logical Gate or Quantum Computing
Diyar Bajalan,

37 Design and Performance Evaluation of the ICI Self-cancellation Method in the Wireless OFDM Communication
Yingshan Li, Jin-Kook Chung, Heung-Gyoon Ryu,

38 Unit Cell Models for Composite Right/Left-handed Transmission Lines (CRLH-TL) Metamaterials
Wanzhao Cui, Wei Ma,

39 An Improved Design of Feed-forward Power Amplifier
Hongbo Ma, Quanyuan Feng,

40 Design of a Low Power, High Performance BICMOS Current-limiting Circuit for DC-DC Converter Application
Hongbo Ma, Quanyuan Feng,

41 Analysis of Composite Right/Left-handed Coplanar Waveguide Zeroth-order Resonators with Application to a Band-pass Filter
C. Li, K. Y. Liu, F. Li,

42 A New Type of Microstrip Coupler with Complementary Split-Ring Resonator (CSRR)
K. Y. Liu, C. Li, F. Li,

43 Equations for the Interaction between Deformation and Electromagnetic Field
Jianhua Xiao,

44 Transverse-mode Selection in Optically Pumped Vertical External Cavity Surface Emitting Laser with a Intracavity Lens
X. Hachair, S. Barbay, R. Kuszelewicz,

45 A Novel Analysis for Circular-groove Guide
Yinqin Cheng,

46 The Platform for PolSAR Data Analysis, Processing and Application
Xi Chen, Chao Wang, Hong Zhang,

47 Approximate ML Detection Based on MMSE for MIMO Systems
Fan Wang, Yong Xiong, Xiumei Yang,

48 Enhanced Diffraction in Cholesteric Liquid Crystal Gratings
I.-Min Jiang, Ming-Shan Tsai, Wen-Chi Hung, Wood-Hi Cheng,

Session 2P1
Metamaterials: Physics, Fabrication and Applications

Tuesday PM, March 27, 2007

Room C (Zhongyuan)

Organized by Le-Wei Li, Tie Jun Cui

Chaired by Le-Wei Li, Tie Jun Cui

13:00 Suppression of Surface Wave Coupling of Antenna Systems with Magnetic Metamaterial
Bae-Ian Wu, Hongsheng Chen, James Chen, Tomasz M. Grzegorczyk, Jin Au Kong,

13:20 Coaxial-SRR: a New Geometry to Drastically Reduce the Electrical Size of the SRR
J. D. Baena, J. Gollub, D. R. Smith, R. Marqués,

13:40 Realization of Impedance Boundary in Terms of a Slab of Wave-guiding Medium
I. V. Lindell, A. H. Sihvola,

14:00 Negative Reflections of Electromagnetic and Optical Waves at the Interface of Chiral Medium and Perfectly Conductor
Chao Zhang, Tie Jun Cui,

14:20 Size Reduction of SRRs for Metamaterial and Left Handed Media Design
J. García-García, F. Aznar, M. Gil, J. Bonache, F. Martín,

14:40 S-shaped Patch Antenna Fed by Dual Offset Electromagnetically Coupled for 5–6 GHz High Speed Network
Fitri Yuli Zulkifli, Faisal Narpati, Eko Tjipto Rahardjo,

15:00 **Coffee Break**

15:20 Macroscopic Magnetic Permeability — Positive, Negative, or Complex — of a Composite Medium with Non-magnetic Constituents
David J. Bergman, Uri Evra,

15:40 Realization of Generalized Soft-and-hard Boundary
I. Hanninen, I. V. Lindell, A. H. Sihvola,

16:00 UPML Absorbing Boundary Condition for Truncating the Boundary of DNG Metamaterials
K. S. Zheng, W. Y. Tam, D. B. Ge,

16:20 Near-fields of Split-Ring-Resonator Metamaterials in the NIR
T. Zentgraf, J. Dorfmüller, R. Vogelgesang, J. Kuhl, K. Kern, C. Rockstuhl, C. Etrich, F. Lederer, H. Giessen,

16:40 A Fast Volume-surface Integral Equation Solver for Scattering Properties of NIMs
Y. N. Li, H. Y. Yao, L. W. Li,

17:00 Bandwidth Enhancement of a Dual Band High Gain EBG Antenna
F. Keshmiri, M. Tayarani,

Session 2P2a
Active and Passive Remote Sensing

Tuesday PM, March 27, 2007

Room B (Zhongyuan)

Organized by Jixiang Yan

Chaired by Jixiang Yan, Changming Zhao

13:20 Novel Sequential Monte Carlo Method to Bearing Only Tracking
Hongquan Qu, Shaohong Li,

13:40 Applications of Pseudo-polar FFT in Synthetic Aperture Radiometer Imaging
Cheng Zhang, Ji Wu, Weiying Sun,

14:00 Radar Imaging Simulation of Man-made Target Based on Electromagnetic Model
K. Y. Guo, X. M. Pan, X. Q. Sheng,

14:20 Multi-frequency Microwave Emission of Broadleaf Forests in Italy
E. Santi, G. Macelloni, S. Paloscia, P. Pampaloni, S. Pettinato,

14:40 Backscattering Border Effects for Forests at C-band
L. Villard, P. Borderies,

15:00 **Coffee Break**

Session 2P2b
Scattering and Emission Models for Microwave Remote Sensing

Tuesday PM, March 27, 2007

Room B (Zhongyuan)

Organized by Saibun Tjuatja, Kun-Shan Chen

Chaired by Saibun Tjuatja, Kun-Shan Chen

15:20 Effects of Fresnel Corrections in the Scattered Field of General Ellipsoids
J. Y. Koay, H. T. Ewe, H. T. Chuah,

15:40 A Comparison on the Soil Moisture Retrieval Algorithms by Using Microwave Radiometry
Yuei-An Liou, Tzu-Yin Chang,

16:00 Damage Estimation for Disasters from SAR Images Using Fractal Dimension
Y. C. Tzeng, S. H. Chiu, K. S. Chen,

16:20 Polarimetric Analysis of Radar Scattering from Rough Surface
Kun-Shan Chen, Jong-Sen Lee, J. C. Shi, Hong-Wei Lee,

16:40 A Microwave Emission Model for Lunar Regolith
S. Tjuatja, A. K. Fung, D. Shresta, J. W. Bredow,

17:00 Comparison of Snow Water Equivalence Derived from SnowModel and the Polarimetric Scanning Radiometer in CLPX03
Lingmei Jiang, Jiancheng Shi,

17:20 An Experimental Study of Microwave Imaging through Partitions
J. Bredow, S. Tjuatja, L. Camacho, S. Gunnala,

Session 2P3
Optical Matter: Modeling and Experimental Realizations 2

Tuesday PM, March 27, 2007

Room A (Zhongyuan)

Organized by Jean-Marc R. Fournier, Tomasz M. Grzegorczyk

Chaired by Jean-Marc R. Fournier, Tomasz M. Grzegorczyk

13:40 Toolbox for Calculation of Optical Forces and Torques
T. A. Nieminen, V. L. Y. Loke, G. Knöner, A. M. Brańczyk,

14:00 Radiation Dynamics of Quantum Dots Embedded in Three-dimensional Photonic Crystals
Min Gu,

14:20 Optically-induced Forces in Microphotonics
M. L. Povinelli, M. Lončar, M. Ibanescu, E. J. Smythe, Shanhui Fan, S. G. Johnson, F. Capasso, J. D. Joannopoulos,

14:40 Strength Measurement of Various Interferometric Traps
Jean-Marc Fournier, Pierre Jacquot, Fabrice Merenda, Johann Rohner, René-P. Salathé,

15:00 **Coffee Break**

15:20 The FDTD Computation of Trapping Forces in 2 and 3D Systems
Robert C. Gauthier,

15:40 Nonparaxial Optical Vortices
T. A. Nieminen,

16:00 Radiation Pressure and the Linear and Angular Momenta of Light in Dielectric Media
Masud Mansuripur, Armis R. Zakharian, Jerome V. Moloney,

Session 2P4a
Extended/Unconventional Electromagnetic Theory, EHD/EMHD and Electrobiology 2

Tuesday PM, March 27, 2007

Room D (Zhongyuan)

Organized by Hiroshi Kikuchi

Chaired by Hiroshi Kikuchi, Dirk K. Callebaut

13:00 Laboratory Evidence of Helicity or Vortex Generation in an Electric Quadrupole by a Universal Electric-cusp Type Plasma Reactor: Simulation of Tornadic Thunderstorms
H. Kikuchi,

13:20 Generation of Magnetic Fields: Various Multipolar Seed Fields
D. K. Callebaut, H. Kikuchi,

13:40 Experimental Verification of Active Traveling Wave Antenna (II)
Tsunehiro Obata, Ryo Miyazaki, Hiroto Yamazaki, Hiroshi Kikuchi,

14:00 Numerical Model of Inductive Flowmeter
P. Fiala, T. Jirku, I. Behunek,

14:20 New Numerical Technique for Non-destructive Testing of the Conductive Materials
T. Bachorec, T. Jirku, J. Dedkova,

14:40 Vortices of Electromagnetic Fields in Microwave Structures with Ferrite Samples
Michael Sigalov, E. O. Kamenetskii, Reuven Shavit,

15:00 **Coffee Break**

Session 2P4b
Plasmas: Normal and Unconventional

Tuesday PM, March 27, 2007

Room D (Zhongyuan)

Organized by Dirk K. Callebaut, Hiroshi Kikuchi

Chaired by Dirk K. Callebaut, Hiroshi Kikuchi

15:20 Higher Order Analysis of Plasma Cylinder Waves: Radial Power Law
D. K. Callebaut, G. K. Karugila,

15:40 Perturbation of Singular Chasma Equation
D. K. Callebaut,

16:00 Post-magneto-hydrodynamics
D. K. Callebaut, A. H. Khater,

16:20 Dissipative Instability of Overlimiting Electron Beam in a Nonuniform-cross-section Waveguide
Eduard V. Rostomyan,

16:40 Influence of Dissipation on Instability Caused by Growing of the Negative Energy Wave of Undelimiting E-beam
Eduard V. Rostomyan,

17:00 Helicity or Vortex Generation in Hydrodynamic (HD), Magneto-hydrodynamic (MHD), and Electrohydrodynamic (EHD) Regimes
H. Kikuchi,

Session 2P5
Electromagnetic Modeling and Inversion and Applications

Tuesday PM, March 27, 2007

Room E (Jinyuan)

Organized by Ganquan Xie, Chien-Jang Wu

Chaired by Ganquan Xie, Chien-Jang Wu

13:00 The 3D GL EM-Flow-Heat-Stress Coupled Modeling
G. Xie, J. H. Li, L. Xie, F. Xie, J. Li,

13:20 Reconstructing Properties of Subsurface from Ground-penetrating Radar Data
Hui Zhou, Dongling Qiu, Takashi Takenaka,

13:40 Theory of rf Magnetic Permeability of Nearly Ferroelectric Superconductors in a Parallel Field
Chien-Jang Wu,

14:00 Study on Transmission Characteristic of Split-ring Resonator Defected Ground Structure
Bian Wu, Bin Li, Tao Su, Chang-Hong Liang,

14:20 Fabrication of Polymer Grating with Low-shrinkage Polymers
Wen-Chung Chang, Kun-Yi Lee, Wei-Ching Chuang, Chun-Cheng Lu,

14:40 Analysis and Fabrication of Fiber Optic Collimators
Wen-Chung Chang, Kun-Yi Lee, Wei-Ching Chuang, Chi-Ting Ho, Sheng-Kai Tseng,

15:00 **Coffee Break**

15:20 3D GL EM and Quantum Mechanical Coupled Modeling for the Nanometer Materials
Ganquan Xie, Jianhua Li, Feng Xie, Lee Xie,

15:40 Radiated EMI Recognition and Identification from PCB Configuration Using Neural Network
P. Sujintanarat, P. Dangkham, S. Chaichana, K. Aunchaleevarapan, P. Teekaput,

16:00 The Effect of Shape of Dielectric Rod on the Band Gap of Two-dimensional Photonic Crystal: From Band Structure Point of View
K. P. Chang, S. L. Yang, L. F. Shen, Tzong-Jer Yang,

16:20 Recognition and Identification of Radiated EMI for Shielding Aperture using Neural Network
P. Dangkham, P. Sujintanarat, S. Chaichana, K. Aunchaleevarapan, P. Teekaput,

16:40 High Sensitivity Electro-optic Magnetic Field Probe
W. K. Kuo, J. Y. Kuo,

17:00 Crosstalk and Delay Minimization Using Artificial Neural Networks
A. Ilumoka, R. Srinivasan,

17:20 The Spectral Expansion on the Entire Real Line of Green's Function of the Two-dimension Sommerfeld problem for a Two-layer Medium in the Fundamental Functions of a Nonself-adjoint Sturm-Liouville Operator
E. G. Saltykov,

Session 2P6
Microwave and Millimeter Wave Circuits and Devices, CAD

Tuesday PM, March 27, 2007

Room F (Xiuyuan)

Organized by Hsien-Chin Chiu

Chaired by Hsien-Chin Chiu

13:00 Microstrip Coupled Line Filters with Spurious Band Suppression
M. C. Velázquez-Ahumada, J. Martel, F. Medina,

13:20 Low-pass Elliptic Filters Using Mixed Microstrip-CPW Technologies
M. C. Velázquez-Ahumada, J. Martel, F. Medina,

13:40 An Improved BSIM4 Model for 0.13-μm Gate-length High Linearity CMOS RF Transistors
Chien-Cheng Wei, Chia-Shih Cheng, Shao-Wei Lin, Yong-Jhih Chen, Hsien-Chin Chiu, Wu-Shiung Feng,

14:00 Enhanced Stop-band Rejection by Symmetric Feeding in 1.8 GHz Cross-coupled Planar HTS Microwave Filters
Hui-Kai Zeng, *Kaung-Hsiung Wu*, *Tseng-Ming Uen*, *Yi-Shun Gou*, *Jenh-Yih Juang*,

14:20 A 10-GHz Low Phase Noise Differential Colpitts CMOS VCO Using Transformer Coupling Technology
Chia-Shih Cheng, *Yi-Tzu Yang*, *Chien-Cheng Wei*, *Hsien-Chin Chiu*,

14:40 Design of a CMOS Low-noise Amplifier with a Single Inductor Matching Network for the Ultra-wideband Systems
Jern-Rern Yang, *Huan-Wun Su*,

15:00 **Coffee Break**

15:20 A Fully Integrated CMOS 3.5 GHz WiMAX Voltage Controlled Oscillator
Man-Long Her, *Che-Yao Fan*, *Chun-Chieh Chiu*, *Kei-Fung Lin*,

15:40 Parallel-coupled Bandpass Filter Using Interdigital Fingers and Defected Ground Structure
Man-Long Her, *Wen Ko*, *Ming-Wei Hsu*,

16:00 Parallel-coupled Microstrip Filter Using Stepped-impedance and Over-coupled End Stages for Suppression of Spurious Responses
Shry-Sann Liao, *Shih-Yi Yuan*, *Han-Nien Lin*, *Pou-Tou Sun*, *Kai-Chin Chuang*,

16:20 Error Analysis and Compensation Algorithm for Digital Predistortion Systems
Jianing Zhao, *Jianyi Zhou*, *Ningde Xie*, *Jianfeng Zhai*, *Lei Zhang*,

16:40 Interaction Mechanism of a Field Emission Based THz Oscillator
M. C. Lin, *P. S. Lu*,

Session 2P7a
Compact Multiband Antenna

Tuesday PM, March 27, 2007

Room G (Hengyuan)

Organized by Dajun Cheng

Chaired by Dajun Cheng

13:00 On Antenna Impedance, Bandwidth and Q
Geyi Wen,

13:20 A Small Multi-band MEMS Switched PIFA
K. R. Boyle, *P. G. Steeneken*,

13:40 Compact Multiband, Multiport Patch Antenna
Dajun Cheng,

14:00 Three-band Modified Transmission Line Antennas for Mobile Communication
Takehiko Tsukiji, *Yasunori Kumon*,

14:20 A Novel Compact Artificial Magnetic Conductor Based on Multiple Non-grounded Vias
Seyed Mohammad Amjadi, *Mohammad Soleimani*,

14:40 Frequency Reconfigurable Antennas for Mixed Network Communication
Vijay K. Nair, *Aly E. Fathy*, *Songnan Yang*, *Helen K. Pan*, *Samir El-Ghazaly*,

15:00 **Coffee Break**

Session 2P7b
Planar Antennas and Propagation for Mobile Communications

Tuesday PM, March 27, 2007

Room G (Hengyuan)

Organized by Toshio Wakabayashi

Chaired by Toshio Wakabayashi

15:20 Gain Enhancement for Reflectarray
The Nan Chang,

15:40 Signal Attenuation of Ka Band Noise due to Rain from Small Aperture Antenna
Pongputhai Udomareyasap, *Donekeo Lakanchanh*, *Nipha Leelaruji*, *Narong Hemmakorn*,

16:00 Measurement and Modelling of the Statistical Path Loss Model in the Urban Area of a Typical Brazilian City
R. A. Martins, *A. G. D'Assunção*, *L. M. Mendonça*,

16:20 On Analysis of Planar Antennas Using FDTD Method
K. Niikura, *R. Kokubo*, *K. Southisombath*, *H. Matsui*, *T. Wakabayashi*,

16:40 Design Narrow Slot Antenna for Dual Frequency
C. Chulvanich, *J. Nakasuwan*, *N. Songthanapitak*, *N. Anantrasirichai*, *T. Wakabayashi*,

17:00 A Recursive Street Canyon Model for Low Height Terminal System
S. Kang, *C. Tzaras*,

Session 3A1
Metamaterials towards the Visible

Wednesday AM, March 28, 2007

Room C (Zhongyuan)

Organized by Carsten Rockstuhl

Chaired by Carsten Rockstuhl, Falk Lederer

08:20 Impact of Plasmonic Resonances for Negative Index Materials
Thomas Pertsch, *Frank Garwe*, *Carsten Rockstuhl*, *Uwe Hübner*, *Christoph Etrich*, *Christoph Menzel*, *Ekaterina Pshenay-Severin*, *Arkadi Shipulin*, *Jörg Petschulat*, *Andreas Tünnermann*, *Falk Lederer*,

08:40 Negative-index Metamaterials Have Reached the Visible
G. Dolling, *M. Wegener*, *C. M. Soukoulis*, *S. Linden*,

09:00 Coupling and Losses in Metamaterials
H. Giessen, *T. Zentgraf*, *N. Liu*, *H. Guo*, *H. Schweizer*, *T. Meyrath*, *L. Fu*,

09:20 Magnetic Metamaterials towards Optical Frequencies
M. Kafesaki, *Th. Koschny*, *E. N. Economou*, *C. M. Soukoulis*,

09:40 Equivalent Permittivity and Permeability of Photonic Crystals in the Resonance Domain
R. Pierre, *B. Gralak*, *T. Decoopma*, *G. Tayeb*, *S. Enoch*, *D. Maystre*,

10:00 **Coffee Break**

10:20 Manufacturing and Characterisation of Electromagnetic Metamaterials from the Far to the Near Infrared
H. O. Moser, *B. D. F. Casse*, *M. Bahou*, *Ao Chen*, *P. D. Gu*, *L. K. Jian*, *Shahrain bin Mahmood*, *Li Wen*,

10:40 Strongly Coupled Electro-optic Superlattices and the Potential as Metamaterials
Yalin Lu, *Dajani Iyad*, *R. J. Knize*,

11:00 On a Meta-Meta-Material — A bottom-up Approach for Magnetic Resonances in the Visible
C. Rockstuhl, *F. Lederer*, *T. Scharf*,

11:20 Three-dimensional Metamaterials of Ionic, Metallic and Semiconductor Particles for Near-infrared and Optical Frequencies
V. Yannopapas,

Session 3A2
Direct and Inverse Scattering Problems for Rough Surfaces

Wednesday AM, March 28, 2007

Room B (Zhongyuan)

Organized by Hulya Sahinturk, Ali Yapar

Chaired by Hulya Sahinturk, Ali Yapar

08:00 Electromagnetic Scattering from Rough Heterogeneous Media with Surface Properties Correlated or not with the Volume Distribution
H. Chanal, *P. Borderies*, *J. P. Segaud*, *M. Saillard*,

08:20 Electromagnetic Scattering Analysis from Rough Surfaces via Buried Object Approach and FDTD
Y. Altuncu, *F. Akleman*, *Ö. Özdemir*,

08:40 A Simple Regularization Scheme for Imaging Homogeneous Targets Buried under a Rough Interface
I. Catapano, *L. Crocco*, *T. Isernia*,

09:00 An Analytical Continuation Method for the Reconstruction of Dielectric or Perfectly Conducting Rough Surface Profiles
I. Akduman, *A. Yapar*,

09:20 A Semi-rigorous Method for Scattering from 2D Rough Heterogeneous Surfaces
P. Mallet, *J. P. Segaud*, *C. A. Guérin*, *A. Sentenac*,

09:40 Surface Impedance Modelling of Perfectly Conducting Rough Surface
Ö. Özdemir, *Y. Altuncu*, *H. Şahintürk*, *B. Aslanyürek*,

10:00 **Coffee Break**

10:20 Bistatic Scattering from Three-dimensional Conducting Rough Surface with **UV** Multilevel Partitioning Method
Zhong-Xin Li,

10:40 Scattering from a Dielectric Coating Having Variable Thickness
E. Tetik, *Y. Altuncu*, *Ö. Özdemir*,

11:00 Complex Signal Theory in Electromagnetics: First Analysis, Some Results and Future Challenges
Emilio Gago-Ribas, *María J. González Morales*, *Carlos Dehesa Martínez*, *Raul Mahillo Isla*, *Francisco Varona de Miguel*,

11:20 Reconstruction of Perfectly Conducting Rough Surfaces Beyond a Layered Media
Onur Mudanyalı, *Selda Yıldız*, *Oguz Semerci*,

11:40 A New Approach for the Scattering of Electromagnetic Waves from Dielectric Bodies of Arbitrary Shape
Mehmet Cayoren, *Birol Aslanyurek*,

Session 3A3
Optics and Photonics, Gyrotrons, THz Technology

Wednesday AM, March 28, 2007

Room A (Zhongyuan)

Organized by Jianguo Xin

Chaired by Jianguo Xin, Yi Luo

08:00 The Classical Structure Model of Single Photon and Classical Point of View with Regard to Wave-particle Duality of Photon
Donglin Zu,

08:20 Longitudinal Power Distribution and Corresponding Temperature Distribution in a RF Waveguide CO_2 Laser
A. Rauf, *Bingxin Zhang*, *Jianguo Xin*,

08:40 Optical Near-field Microscopy Using FDTD Method
B. Zakeri, *S. Golmohammadi Heris*,

09:00 Lasing Dynamics of a Novel Silicon Photonic Crystal Cavity
Shouyuan Shi, *Dennis W. Prather*,

09:20 Using Intrinsic Layer to Improve the Efficiency of Organic Solar Cells
Wei Ping Chu, *Yu Sheng Tsai*, *Fuh Shyang Juang*, *Tao Sheng Li*, *Chang Han Chung*,

09:40 Effects of Nitridation Time on Top-emission Inverted Organic Light Emitting Diode
Chien-Chang Tseng, *Liang-Wen Ji*, *Yu-Sheng Tsai*, *Fuh-Shyang Juang*,

10:00 **Coffee Break**

10:20 Monte Carlo Simulation of Phosphor-screened Ultraviolet Light in a White Light-emitting Diode
Chien-Cheng Chang, *Chien-Chung Chang*, *Ruey-Lin Chern*,

10:40 Effects of Isolation-layer on Luminance Efficiency of Organic Light-emitting Diodes
Chang-Han Chung, *To-Sing Li*, *Fuh-Shyang Juang*, *Day-Shan Liu*,

11:00 Beam Propagation in Laser Scattering Communication
Ying Yan, *Jianguo Xin*,

11:20 Entanglement Theory and a q Analogue Entangled State
Huihui Zhang, *A. Rauf*, *Xiaoguang Zhou*,

11:40 Influence of Electro-optic Effect on Wave-guide Efficiency of Optical Fiber with Cladding Made of Uniaxial Crystal Materials
Shanglin Hou, *Chunlian Hu*,

Session 3A4
Novel Mathematical Methods in Electromagnetics

Wednesday AM, March 28, 2007

Room D (Zhongyuan)

Organized by Yury Shestopalov, Kazuya Kobayashi

Chaired by Yury Shestopalov, Kazuya Kobayashi

08:00 Electromagnetic Modeling of the Origin of the Rings of Saturn
Vladimir V. Tchernyi,

08:20 Determination of Permittivity of a Lossy Dielectric Inclusion in a Rectangular Waveguide
Y. V. Shestopalov, *V. V. Yakovlev*,

08:40 A New Iterative Method for Low-frequency 3-D Electromagnetic Scattering on Dielectric Bodies
N. V. Budko, *A. B. Samokhin*, *K. Kobayashi*,

09:00 Development of the Method of Approximate Decomposition for the Solution of Boundary Value Problems for Elliptic Systems in Three-dimensional Case
Y. Shestopalov, *N. Kotik*,

09:20 Diffraction by a Kerr-type Nonlinear Dielectric Layer
Yu. V. Shestopalov, *V. V. Yatsyk*,

09:40 Scattering of Electromagnetic Waves by Multilayered Inhomogeneous Columnar Dielectric Gratings Loaded Rectangular Dielectric Constant
Tsuneki Yamasaki, *Ryosuke Ozaki*, *Takashi Hinata*,

10:00 **Coffee Break**

10:20 Comparative RCS Study of Two Canonical, Parallel-plate Waveguide Cavities with Three-layer Material Loading
Kazuya Kobayashi, *Shoichi Koshikawa*,

10:40 1D Canonical and Perturbed Quantum Potential-well Problem: A Universal Function Approach
I. Ahmed, *A. R. Baghai-Wadji*,

11:00 On the Calculation of Polynomially Perturbed Harmonic Oscillators
P. Peidaee, *A. R. Baghai-Wadji*,

11:20 On the Determination of Eigenpairs of 2D Positive Differential Operators with Periodic Boundary Conditions
A. Rezaee, *A. R. Baghai-Wadji*,

Session 3A5
Plasmonic Nanophotonics

Wednesday AM, March 28, 2007

Room E (Jinyuan)

Organized by Din Ping Tsai, Chien-Cheng Chang

Chaired by Din Ping Tsai, Chien-Cheng Chang

08:40 A Novel Eigenmode Analysis of the Plasmonic Modes in Metal Nanoparticle Periodic Arrays
K. H. Fung, *C. T. Chan*,

09:00 A Theoretical Study of Particle Plasmons for Single and Multiple Metallic Nanospheres
Ruey-Lin Chern, *Chih-Yu Kuo*, *Chien-Cheng Chang*,

09:20 Spectrum Compression of a Short Pulse from a Central Obstructed Circular Aperture in the Far-field
Pin Han,

09:40 Focusing Light with Sub-wavelength Aperture
K. R. Chen,

10:00 **Coffee Break**

10:20 Computational Model of Electromagnetic Propagation through Nanowire with Applications in Nanophotonic Devices
Erping Li, *Hong-San Chu*, *R. Vahldieck*,

10:40 Optimization of the Coupling of the Surface Plasmon Re-emitted from Silver Nanorods
Sheng Chung Chen, *Zheng Yu Lin*, *Dong Lin Li*, *Huai Yi Xie*, *Jun You Iv*, *Kuo Pin Chiu*, *Din Ping Tsai*,

11:00 Manipulating Tunneling Frequencies by Magnetic Fields for Resonant Tunneling Effects of Surface Plasmon Polaritons
Yung-Chiang Lan,

Session 3A6
Wireless Communication Component

Wednesday AM, March 28, 2007

Room F (Xiuyuan)

Organized by Chulhun Seo

Chaired by Chulhun Seo, Hyeong Dong Kim

08:40 Improvement of PAE in Doherty Amplifier Using Dual Bias Control and PBG Structure
Hyoungjun Kim, *Chulhun Seo*,

09:00 Very Low Power Single-ended Cross-coupled Oscillator in CMOS Technology
Jiho Ryu, *Sangwook Nam*,

09:20 Cascode Feedback Amplifier Combined with Resonant Matching for UWB System
Pei-Zong Rao, *Yuh-Chuan Cheng*, *Ching-Piau Liang*, *Shyh-Jong Chung*,

09:40 Compact Surface-mount Wideband and Multi-band Internal Chip Antenna for Mobile Handset
H. C. Choi, *D. S. Shin*, *S. U. Park*, *H. D. Kim*,

10:00 **Coffee Break**

10:20 Broadband Internal Antenna for Mobile DTV Handsets
Seung-Gil Jeon, *Dong-Hyun Seo*, *Yeon-Sik Yu*, *Jae-Hoon Choi*,

10:40 A Compact Band-selective Filter and Antenna for UWB Application
Yohan Jang, *Hoon Park*, *Sangwook Jung*, *Jaehoon Choi*,

11:00 Class E Amplifier for Wireless LAN with Digital Predistortion
Chan Hyuk Park, *Kyung Heon Koo*,

Session 3A7
Microstrip Patch Antennas, Phased Arrays and Optical Beam Forming

Wednesday AM, March 28, 2007

Room G (Hengyuan)

Organized by Baidyanath N. Biswas

Chaired by Baidyanath N. Biswas, Subal Kar

08:20 Decreasing of Mutual Coupling in Array Antennas by Using Fractal Elements
Naser Yousefzadeh, *Changiz Ghobadi*,

08:40 Optical Generation of mm-Wave Signal with Wide Linewidth Lasers for Broadband Communications
B. N. Biswas,

09:00 Characterization of a Self-complementary Sierpinski Gasket Microstrip Antenna
B. N. Biswas, *Rowdra Ghatak*, *Rabindra K. Mishra*, *Dipak R. Poddar*,

09:20 Characteristics Study of Four Coplanar Waveguide Feeding Devices
Wenwen Chai, *Xiaojuan Zhang*, *Jibang Liu*,

09:40 Broadband Microstrip Patch Antenna Fed by a Novel Coupling Device
Wenwen Chai, *Xiaojuan Zhang*, *Jibang Liu*,

10:00 **Coffee Break**

10:20 A Novel Wideband Antenna Design Using U-slot
Wenwen Chai, *Xiaojuan Zhang*, *Jibang Liu*,

10:40 Couple-fed Circular Polarization Bow Tie Microstrip Antenna
Huan-Cheng Lien, *Yung-Cheng Lee*, *Huei-Chiou Tsai*,

11:00 Lightwave Technique of mm-Wave Generation for Broadband Mobile Communication
B. N. Biswas, *A. Banerjee*, *A. Mukherjee*, *S. Kar*,

11:20 Investigate Rectangular Slot Antenna with *L*-shaped Strip
G. Khunead, *J. Nakasuwan*, *N. Songthanapitak*, *N. Anantrasirichai*,

Session 3P1
Novel Materials and Methods in Photonic Crystals

Wednesday PM, March 28, 2007

Room E (Jinyuan)

Organized by Snjezana Tomljenovic-Hanic

Chaired by Snjezana Tomljenovic-Hanic, Christian Grillet

13:00 Microassembly of Rod-connected Diamond Structures at Optical Wavelengths
K. Aoki, *S. Iwamoto*, *Y. Arakawa*,

13:20 Design of high-*Q* Cavities in Photosensitive Material-based Photonic Crystal Slab Heterostructures
S. Tomljenovic-Hanic, *C. M. de Sterke*, *M. J. Steel*, *D. J. Moss*,

13:40 A Macrocell Approach for the Analysis of 2D Photonic Crystals Devices
L. Crocco, *F. Cuomo*, *T. Isernia*,

14:00 Surface Waves in Photonic Crystals
M. Kafesaki, *S. Foteinopoulou*, *T. Koschny*, *E. N. Economou*, *C. M. Soukoulis*,

14:20 Tunable Photonic Crystal Based on SOI
Caihua Chen, *Binglin Miao*, *Dennis W. Prather*,

14:40 Optical Properties of Mesoscopic Systems of Coupled Microspheres
V. N. Astratov, *S. P. Ashili*, *A. M. Kapitonov*,

15:00 **Coffee Break**

15:20 2D Photonic Crystals in Chalcogenide Glass
Cameron Smith, *Christian Grillet*, *Eric C. Mägi*, *Yinlan Ruan*, *Darren Freeman*, *Barry Luther-Davies*, *Steve Madden*, *Andrei Rode*, *Snjezana Tomljenovic-Hanic*, *David Moss*, *Benjamin J. Eggleton*,

15:40 Photonic Crystals in Diamond for Quantum Information Technology
Joseph Salzman,

16:00 Novel Inorganic Compound Glasses for Photonic Crystal and Bandgap Structures
D. Furniss, *A. B. Seddon*,

16:20 Thermal Radiation from Chiral Layer-by-layer Photonic Crystal Structures
Jeffrey Chi Wai Lee, *C. T. Chan*,

16:40 Anomalous Properties of the Band-edge States in Large-sized Two-dimensional Photonic and Phononic Quasicrystals
Y. Lai, *Z. Q. Zhang*, *C. H. Chan*, *L. Tsang*,

17:00 Broadband Slow Light and Nonlinear Switching Devices
G. Böttger, *J.-M. Brosi*, *A. Maitra*, *J. Wang*, *A. Y. Petrov*, *M. Eich*, *J. Leuthold*, *W. Freude*,

Session 3P2
Advanced Inverse Scattering Techniques for Non-invasive Diagnostics Applications

Wednesday PM, March 28, 2007

Room F (Xiuyuan)

Organized by Lorenzo Crocco, Ibrahim Akduman

Chaired by Lorenzo Crocco, Ibrahim Akduman

13:00 Dealing with Aspect-limited Data through an Innovative Microwave Imaging Multi-source Technique — Potentialities and Limitations
D. Franceschini, *M. Benedetti*, *M. Donelli*, *P. Rocca*, *A. Massa*,

13:20 Closed Approximation for one Dimensional Scattering of an Inhomogeneous Anisotropic Medium in Time-domain and its Inverse Scattering Solution
L.-L. Li, *F. Li*,

13:40 Permittivity Variation Reconstruction in Longitudinally Inhomogeneous Dielectric Loaded Waveguides
F. Akleman, *A. Yapar*,

14:00 Testing the Iterative Multiscaling Method against Experimental Data — On the Effects of the Electromagnetic Source Modeling in the Reconstruction Process
D. Franceschini, *M. Donelli*, *G. Franceschini*, *P. Rocca*, *A. Massa*,

14:20 The Singular Sources Method — A Non-iterative Scheme for Medium Reconstrucions
R. W. E. Potthast,

14:40 A 'No-sampling' Implementation of the Linear Sampling Method
R. Aramini, *M. Brignone*, *M. Piana*,

15:00 **Coffee Break**

15:20 Time-domain Microwave Tomography for Breast Cancer Detection
Toshiyuki Tanaka, *Jessi Johnson*, *Shoichi Saruwatari*, *Takashi Takenaka*,

15:40 Optimized Design of Microwave Tomography Techniques for Breast Cancer Detection
I. Catapano, *L. Crocco*, *M. D'Urso*, *A. Morabito*, *T. Isernia*,

16:00 A Non-invasive Electromagnetic Diagnostic Technique Based on Neural Networks
S. Caorsi, *G. Cevini*,

16:20 A New Algorithm for the Shape Reconstruction of Perfectly Conducting Objects
Mehmet Cayoren, *Ibrahim Akduman*, *Ali Yapar*, *Lorenzo Crocco*,

16:40 Recent Advances in the Iterative Multizooming Reconstruction of Nonmeasurable Equivalent Current Densities for Non-invasive Diagnostic Applications
P. Rocca, *D. Franceschini*, *M. Donelli*, *A. Massa*, *G. L. Gragnani*,

17:00 Terrain Classification and Pure Target Detection Based on Entropy/Eigenvector Decomposition in Imaging Radar Polarimetry
B. Zakeri, *A. Ghorbani*, *Michele Galletti*,

Session 3P3
Adaptive, Multifrequency and Wideband Antennas for Wireless Systems

Wednesday PM, March 28, 2007

Room G (Hengyuan)

Organized by Dariush Mirshekar-Syahkal, Amit Mehta

Chaired by Dariush Mirshekar-Syahkal, Amit Mehta

13:00 Making Quarter Wavelength Notch Antennas Wideband
P. J. Massey, *K. R. Boyle*, *A. J. M. de Graauw*, *M. Udink*, *D. L. Raynes*,

13:20 Folded Loop Antenna and Folded Dipole Antenna with Wideband Characteristics
S. Tanaka, *H. Morishita*,

13:40 A Frequency Notched Inverted-trapezoid UWB Antenna
Min Ding, *Ronghong Jin*, *Junping Geng*,

14:00 On the Design of Multipole Band-notched UWB Planar Monopole Antennas with Good Frequency Selectivity
Ren-Ching Hua, *Chin-Feng Chou*, *Tzyh-Ghuang Ma*,

14:20 Radiation Characteristic of Tapered Slot Antenna with Some Configuration and Feeding System
Akinori Matsui,

14:40 The Design of an UWB Antenna with Notch Characteristic
Jaehoon Choi, *Seokjin Hong*, *Uisheon Kim*,

15:00 **Coffee Break**

15:20 Development of an Omnidirectional and Low-VSWR Ultra Wideband Antenna
A. Maeda, *T. Kobayashi*,

15:40 CPW-fed Ultra Wideband Printed Monopole Antennas with Tapered Ground Plane
Wei Wang, *Xian-Ling Liang*, *Shun-Shi Zhong*,

16:00 Adaptive Wideband Beamforming with Combined Spatial/Temporal Subband Decomposition
Wei Liu, *Richard Langley*,

16:20 Rectangular S Antenna and Its Implementation for Beam Adaptive Applications
A. Mehta, *D. Mirshekar-Syahkal*,

16:40 Overview and Development of HIS Based Low Profile Spiral Antenna for Beam Adaptive Applications
A. Mehta, *D. Mirshekar-Syhakal*, *H. Nakano*, *A. Sanada*,

17:00 Small Loop and Helical Antennas for Mobile Systems
Wee Sang Park,

17:20 Analysis of a Reconfigurable Radiation Leaky-wave Antenna with Integrated MEMS-based Structures
G. H. Huff,

17:40 Wideband Traveling-wave Antennas for Base-station of Mobile Communications
Wei Shen, *Wen-Xun Zhang*,

Session 3P4
Plasmonics: Nanoscale, Ultrafast, Anisotropic, Nonlinear, and Active Phenomena

Wednesday PM, March 28, 2007

Room H (Boyuan)

Organized by David J. Bergman, Mark I. Stockman

Chaired by David J. Bergman, Mark I. Stockman

13:00 Light Localization in Quasi-periodic Nano-photonics Carpets
N. I. Zheludev, F. M. Huang, Y. Chen, F. J. Garcia de Abajo,

13:20 Dynamics of Surface Electromagnetic Modes in Nanohole Arrays
T. V. Shahbazyan, A. S. Kirakosyan, M. Tong, Z. V. Vardeny,

13:40 Magnetic Plasmon Propagation along a Chain of Connected Subwavelength Resonators at Infrared Frequencies
H. Liu, D. A. Genov, D. M. Wu, Y. M. Liu, J. M. Steele, C. Sun, S. N. Zhu, X. Zhang,

14:00 Optical Nanoantennas to Enhance Single-molecules and Solid-state Emitters
M. Agio, F. Kaminski, L. Rogobete, S. Kühn, U. Hå kanson, G. Mori, V. Sandoghdar,

14:20 Plasmonics — The Missing Link between Nanoelectronics and Microphotonics
Mark L. Brongersma, Rashid Zia, Jon Schuler,

14:40 Sub-wavelength Energy Localization and Superfocusing throughout the Spectrum with Plasmonics
Stefan A. Maier, Steve R. Andrews, W. Ding, M. T. Burnett, Francisco García-Vidal, Luis Martín-Moreno,

15:00 **Coffee Break**

15:20 Nanoscale Imaging and Ultrafast Processes in Plasmonic Heterostructures
G. P. Wiederrecht,

15:40 Direct Observation of Negative Refraction at Visible Frequencies in Metal-insulator-metal Waveguide
H. J. Lezec, J. A. Dionne, H. A. Atwater,

16:00 Photon Control by Plasmonic Metamaterials
T. Tanaka, S. Kawata,

16:20 Nanoplasmonics: Generation and Control of Nanoscale Optical Fields
Mark I. Stockman, David J. Bergman,

16:40 Active Plasmonic Materials and Devices
Harry A. Atwater, Henri J. Lezec, Albert Polman, Jennifer A. Dionne, Domenico Pacifici, Carrie M. Ross, Matthew J. Dicken, Julie S. Biteen, Hans J. Mertens, Ernst Jan Vesseur, Luke A. Sweatlock,

17:00 Transmission of Light through Periodic and Quasi-periodic Arrays of Subwavelength Apertures
A. I. Fernández-Domínguez, Luis Martin-Moreno, Francisco J. Garcia-Vidal,

17:20 Linear, Nonlinear and Ultrafast Behavior of Surface Plasmon Polaritons in Nanostructures
M. Sandtke, R. J. P. Engelen, J. Prangsma, J. A. H. van Nieuwstadt, R. H. Harmsen, S. Enoch, L. Kuipers,

Session 3P5
Electromgnetics in Lightning Research

Wednesday PM, March 28, 2007

Room I (Guangyuan)

Organized by Marcos Rubinstein

Chaired by Marcos Rubinstein, Rajeev Thottappillil

13:20 Modeling Lightning Attachment to Tall Towers
Rajeev Thottappillil, Nelson Theethayi,

13:40 Discussion on the Influence of the Time Derivative of the Current and the Charge Acceleration on the Radiation Fields from Lightning Channels
Marcos Rubinstein, Rajeev Thottappillil, Farhad Rachidi,

14:00 Evaluation and Comparison of the Striking Distance and the Interception Distance Concepts for Lightning Protection
M. Vargas, H. Torres, V. Rakov,

14:20 New Approaches to Model Lightning Radiated Fields When Considering Tortuous and Branched Channels
M. Vargas, J. Herrera, H. Torres,

14:40 Equivalent Approaches for Computing Electromagnetic Fields from an Extending Lightning Discharge
Rajeev Thottappillil, Vladimir A. Rakov,

15:00 **Coffee Break**

15:20 On the Determination of the Spatial-temporal Behavior of the Lightning Return Stroke Current by Multiple Field Measurements
D. Pavanello, M. Rubinstein, F. Rachidi,

15:40 On the Need for Guidelines for the Reporting of Electromagnetic Field Measurements from Lightning
M. Rubinstein, D. Pavanello, F. Rachidi,

Session 3P6a
Electromagnetic Scattering: Theory and Applications

Wednesday PM, March 28, 2007

Room J (Yingchun)

Chaired by Hong-Tat Ewe, Evgeny Popov

13:20 Electromagnetic Scattering from an Arbitrarily Shaped Three-dimensional Inhomogeneous Bianisotropic Body
C. Mei, *M. Hasanovic*, *J. K. Lee*, *E. Arvas*,

13:40 Numerical Analysis of a Virtual Optical Probe Based on Surface Plasmon Polariton
Jiying Xu, *Jia Wang*, *Boxiong Wang*,

14:00 The T-matrix of the Homogeneous Anisotropic Sphere: Applications to Orientation Averaged Resonant Scattering
Brian Stout, *Michel Nevière*, *Evgeny Popov*,

14:20 Directivity of Light Transmission through a Single Subwavelength Aperture without Plasmon Resonance
Evgeni Popov, *Nicolas Bonod*, *Michel Nevière*,

14:40 Scattering by a Finite Strip Under Complex Beam Incidence—Asymptotic Evaluation in the Complex Space Domain
M.J. González-Morales, *E. Gago-Ribas*,

15:00 **Coffee Break**

Session 3P6b
EM Signatures for Natural and Man-made Objects

Wednesday PM, March 28, 2007

Room J (Yingchun)

Organized by Xiaojian Xu, Hongcheng Yin

Chaired by Xiaojian Xu, Hongcheng Yin

15:20 Transient Scattering from Arbitrarily Shaped Two-dimensional Objects Located on a Rough Surface
Min Zhang, *Hongcheng Yin*, *Zhen Cao*,

15:40 ISAR Image Modeling of Aircraft with Propeller Blades
Xiaojian Xu, *Yao Qin*,

16:00 A High-frequency Hybrid Method to Calculate EM Scattering of a Three-plate Cavity
Kai Cui, *Xiaojian Xu*, *Shiyi Mao*,

16:20 The MOM Solution Combining Hybrid Domain Bases and Wire-grid Model for Scattering by Complex Targets
Fangzhi Geng, *Chunzhu Dong*, *Hongcheng Yin*, *Chuangming Tong*,

16:40 EM Scattering from Complex Targets above a Slightly Rough Surface
Chunzhu Dong, *Chao Wang*, *Xiao Wei*, *Hongcheng Yin*,

17:00 A Hybrid FDTD/TD-PO Approach for Analysis of Small Radiating Source Close to Large PEC Object
Lingxia Yang, *Debiao Ge*, *Xiaojuan Hu*,

17:20 Application of TF/SF Formulation and KSIR Near-to-far Field Extrapolation Technique in 3-D FDFD
Xiaojuan Hu, *Debiao Ge*, *Lingxia Yang*,

Session 4A1a
Biophotonics and Plasmonics

Thursday AM, March 29, 2007

Room C (Zhongyuan)

Organized by Muttukrishnan Rajarajan

Chaired by Muttukrishnan Rajarajan, Jiri Homola

08:00 Effects of Different Parameters on Attenuation Rates in Circular and Arch Tunnels
Kamran Arshad, *Ferdinand Katsriku*, *Aboubaker Lasebae*,

08:20 Design and Characterization of Biophotonics Devices
M. Rajarajan, *C. Themistos*, *B. M. A. Rahman*, *K. T. V. Grattan*,

08:40 Plasmonics in Metal-clad Terahertz Waveguides
Muttukrishnan Rajarajan, *Christos Themistos*, *B. M. A. Rahman*, *Kenneth T V Grattan*,

09:00 Plasmonics: Controlled Sub-wavelength Confinement of Electromagnetic Radiation for Enhanced Spectroscopy and Sensing
Stefan A. Maier, *M. T. Burnett*, *Steve R. Andrews*, *W. Ding*, *Francisco García-Vidal*, *Luis Martín-Moreno*,

09:20 Surface Plasmon Resonance Based Biosensors
J. Homola,

09:40 Spectroscopic Properties of Arrays of Core-shell Au Nanorods
R. Atkinson, *W. Hendren*, *G. Wurtz*, *P. Evans*, *W. Dickson*, *R. Pollard*, *A. V. Zayats*,

10:00 **Coffee Break**

Session 4A1b
Nanotechnology

Thursday AM, March 29, 2007

Room C (Zhongyuan)

Chaired by Ari H. Sihvola

10:20 Modeling of Carbon Nanotube Antennas
A. Traille, M. M. Tentzeris,

10:40 Numerical Simulation Analysis of an Optical Virtual Probe Based on Surface Plasmon Polaritonic Band-gap Structures
Qingyan Wang, Jia Wang, Shulian Zhang,

11:00 Hybrid Numerical Simulation of Electrostatic Force Microscopes Considering Charge Distribution
U. B. Bala, M. Greiff, W. Mathis,

11:20 Energetical Model Interpretation of Thermal Stability by Changing Direction of the Magnetization of Nano Magnetic Structure
D. Bajalan,

11:40 Innovation Use of Nano Technology in Magnetic Storage Devices
Diyar Bajalan,

Session 4A2
Low Frequency EM Wave Seabed Logging to Indicate the Existence of Hydrocarbon Layers 1

Thursday AM, March 29, 2007

Room B (Zhongyuan)

Organized by F. N. Kong

Chaired by F. N. Kong, Leiv-J. Gelius

08:00 Characteristics of Scattered Fields from Hydrocarbon Layers in Seabed Logging
F. N. Kong, S. E. Johnstad, T. Roesten,

08:20 Modeling the Response of a Seafloor Antenna in the Limits of Low Frequency and Shallow Water
L.-J. Gelius,

08:40 Comparison of Different Finite-difference Schemes of Modeling Marine Controlled-Source Electromagnetic Fields for Hydrocarbon Exploration
Dagang Wu, Ji Chen, Ce Liu,

09:00 The New Progress in Near-surface Seafloor Exploration by Transient Electromagnetic Method
Jun Lin, Changsheng Liu, Yan Wang, Fengdao Zhou, Hui Li,

09:20 Study of the High Frequency Magnetotelluric Sounding for Prospecting the Deep and Periphery Mine by RRI Inversion
Jingtian Tang, Ye Wang, Xiao Xiao, Jifeng Zhang, Huakun Du, Caikun Gao,

09:40 Modeling of 3D MCSEM and Sensitivity Analysis
Zhanxiang He, Zhigang Wang, Gang Yu, Kurt Strack, Haiying Liu,

10:00 **Coffee Break**

10:20 The Electromagnetic Responses of Under Seabed Layer and Inversion Method Study
Z.-F. Zeng, L.-H. Wang, S.-T. Zheng, F.-S. Liu, Y.-M. Wang,

10:40 Remote-control in Transient Electromagnetic System for Shallow Seafloor
Y. Wang, J. Lin, G. H. Zhou, F. D. Zhou, C. S. Liu, H. Li,

11:00 Modeling of Seabed Logging Data for a Sand-shale Reservoir
Zhong Wang, Leiv -J. Gelius,

11:20 Multi-component Processing of Sea Bed Logging Data
L.-J. Gelius,

11:40 Comparison of Antenna Types and Orientations for Detecting Hydrocarbon Layers in Seabed Logging
S. E. Johnstad, H. Westerdahl, F. N. Kong, Z. Wang,

Session 4A3
Dissipative Solitons 1

Thursday AM, March 29, 2007

Room A (Zhongyuan)

Organized by Nail Akhmediev

Chaired by Nail Akhmediev, Philippe Grelu

08:00 Nonlinear Dynamics of Temporal Optical Soliton Molecules in Lasers
Ph. Grelu, M. Grapinet, J. M. Soto-Crespo, N. Akhmediev,

08:20 Realization of a Cavity-soliton Laser Based on Broad-area Vertical-cavity Devices with Frequency-selective Feedback
T. Ackemann, Y. Tanguy, A. Scroggie, A. Yao, W. J. Firth, G.-L. Oppo, P. Paulau, A. V. Naumenko, N. A. Loiko, R. Jäger,

08:40 Nonlocal Stabilization of Vortex Beams in a Self-focusing Atomic Vapor
M. Saffman, S. Skupin, W. Królikowski,

09:00 Localized Structures as Spatial Hosts for Unstable Modes
A. Lampert, E. Meron,

09:20 Pulse Dynamics in Mode-locked Lasers
S. T. Cundiff, J. K. Wahlstrand, J. Willits, R. P. Smith, C. R. Menyuk,

09:40 Noise, Convection and Inhomogeneity for Controlling and Trapping Optical Dissipative Solitons
M. Taki,

10:00 **Coffee Break**

10:20 Dynamics of a Semiconductor Laser with Two External Cavities
A. N. Pisarchik, *F. R. Ruiz-Oliveras*,

10:40 Incoherent Writing and Erasure of Cavity Solitons in an Optically Pumped Vertical-cavity Semiconductor Optical Amplifier
S. Barbay, *Y. Ménesguen*, *X. Hachair*, *L. Leroy*, *I. Sagnes*, *R. Kuszelewicz*,

11:00 Excitability Mediated by Localized Structures in Kerr Cavities
Damià Gomila, *Adrian Jacobo*, *Manuel A. Matías*, *Pere Colet*,

11:20 Dissipative Structures in Metamaterial Optical Resonators
P. Tassin, *P. Kockaert*, *N. Veretenov*, *G. Van der Sande*, *I. Veretennicoff*, *M. Tlidi*,

11:40 Stability of Dissipative Solitons as Solutions of Asymmetrical Complex Cubic-quintic Ginzburg-Landau Equation
V. Skarka, *N. B. Aleksić*, *D. Gauthier*, *D. V. Timotijević*,

Session 4A4
Integral Equations and Fast Solvers

Thursday AM, March 29, 2007

Room D (Zhongyuan)

Organized by Levent Gurel

Chaired by Levent Gurel, Jukka O. Sarvas

08:20 A Matrix-friendly Formulation of Layered Medium Green's Function
W. C. Chew, *J. L. Xiong*, *M. A. Saville*,

08:40 Numerical Study of the Green's Function Approximation Using Radial Basis Function Interpolations
Hao Gang Wang, *Chi Hou Chan*,

09:00 Improved Interpolation of Evanescent Plane Waves for Fast Multipole Methods
Henrik Wallén,

09:20 Searching for Electrostatic Resonances in Metamaterials Using Surface Integral Equation Approach
A. Sihvola, *P. Ylä-Oijala*, *S. Järvenpää*, *M. Taskinen*,

09:40 Design and Implementation of a Multilevel Fast Multipole Algorithm by combining Python, SciPy, C++ and Fortran
Idesbald van den Bosch, *Marc Acheroy*, *Jean-Paul Marcel*,

10:00 **Coffee Break**

10:20 Comparing the Multipole Series and Inhomogenenous Plane-wave Approaches in Broadband MLFMA
J. Sarvas,

10:40 Efficient Preconditioning Strategies for the Multilevel Fast Multipole Algorithm
Levent Gürel, *Tahir Malas*, *Özgür Ergül*,

11:00 The Edge Finite Element Method for Magnetic Fields Excited by Artificial Source in Frequency Domain
Zhifeng Xu, *Baiyao Ruan*,

11:20 The Distributions of Electromagnetic Fields Excited by Magnetic Dipole on Ragged Surface
Baiyao Ruan, *Zhifeng Xu*,

Session 4A5
Electromagnetic and Seismic and Flow Field Imaging in the Geophysical and Enviroment Sciences and Engineering

Thursday AM, March 29, 2007

Room E (Jinyuan)

Organized by Ganquan Xie, Michael Oristaglio

Chaired by Ganquan Xie, Michael Oristaglio

08:20 A 3D-2D AGILD EM Modeling and Inversion Imaging
J. Li, *G. Xie*, *M. Oristaglio*, *L. Xie*, *F. Xie*,

08:40 Porous Medium Mgneto-hydro-dynamics and Its Inverse Problem
Zi Guo, *Youzhong Guo*,

09:00 Application of CSAMT Method for Exploring Coal Mine in Fujian Province, Southeastern China
Zhiguo An, *Qingyun Di*,

09:20 Study of Bubble Size Distribution for Breaking Wave Propagates over a Submerged Dike
Tsung-Mo Tien, *Chien-Hsun Lee*, *Ching-Jer Huang*,

09:40 Mixed Finite Element of Viscoelastic Fluid Flow
Hongwei Zhang, *Haitao Cai*, *Yinghao Cai*,

10:00 **Coffee Break**

10:20 Least-squares Mixed Finite Element of Steady State Viscoelastic Fluid Flow
Yinghao Cai, *Hongwei Zhang*, *Haitao Cai*,

10:40 Frequency Response of Tri-axial Induction Logging Tool
Jing Li, *Xuesheng Yu*, *Lili Zhong*, *Richard C. Liu*,

11:00 Simultaneous Measurement of Capillary Pressure and Dielectric Constant in Porous Media
W. J. Plug, *L. M. Moreno*, *J. Bruining*, *E. C. Slob*,

11:20 Numerical Simulation for the Effective Conductivity of Composite Medium in High Frequency
D. K. Yang, *X. Y. Hu*, *S. Y. Zhang*, *M. Dai*,

Session 4A6
High Speed I/O Signal and Power Integrity Analysis

Thursday AM, March 29, 2007

Room F (Xiuyuan)

Organized by Christopher Pan

Chaired by Christopher Pan

08:00 Stitching a Reference Plane Split Using Routing Layer Traces to Improve I/O Bus Signal Integrity
Helen K. Pan, *Christopher Y. Pan*,

08:20 Effective Signal Integrity and Power Integrity Co-analysis: An Enhanced Simulation Flow for DDRII System
Wenjie Mao, *Xin Wu*,

08:40 Joint SI and PI Analysis for DDJ Prediction
Leo Li,

09:00 PG Design Expert: A CAD Tool for On-die Power Grid Verification and Optimization
Junyong Deng, *Cheng Zhuo*, *Jianghua Qian*, *Wenjie Mao*, *Xin Wu*, *Jinfang Zhou*, *Kangsheng Chen*,

09:20 Fast In-package Decoupling Capacitance Allocation Using a Transmission Matrix Method
Yinjun Wang, *Cheng Zhuo*, *Junyong Deng*, *Wenjie Mao*, *Xin Wu*, *Jinfang Zhou*, *Kangsheng Chen*,

09:40 Fast Power Integrity Analysis Using Improved Algebraic Multigrid Method with Error Control
Cheng Zhuo, *Junyong Deng*, *Wenjie Mao*, *Xin Wu*, *Jinfang Zhou*, *Kangsheng Chen*,

10:00 **Coffee Break**

Session 4A7
Electromagnetic and Optical Wave Technologies for Communications and Sensing

Thursday AM, March 29, 2007

Room G (Hengyuan)

Organized by Yasumitsu Miyazaki, Manabu Kagami

Chaired by Yasumitsu Miyazaki, Manabu Kagami

08:00 Signal Waveform Distortion on Terminatorless Transmission Line of UART-CSMA/CD Control Network
C. Ninagawa, *K. Yokohama*, *F. Aoi*, *Y. Miyazaki*,

08:20 Analysis of Metal-clad Planar Waveguide with Corrugated Long-period Gratings
Florence Y. M. Chan, *K. Yasumoto*,

08:40 Input Impedances and Current Distributions for Meander Line Antennas with Planar Coupled Parasitic Meander Element
K. Taki, *Y. Miyazaki*,

09:00 Conceptual Design of A High Resolution, Low Cost X-Band Airborne Synthetic Aperture Radar System
Y. K. Chan, *V. C. Koo*, *T. S. Lim*,

09:20 A Real-time Hybrid Correlator for Synthetic Aperture Radar Signal Processing
V. C. Koo, *Y. K. Chan*, *T. S. Lim*,

09:40 Analysis of Electromagnetic Wave Propagation in Out-door Active RFID System Using FD-TD Method
Tadahiro Masuda, *Yasumitsu Miyazaki*, *Yoshitaka Kashiwagi*,

10:00 **Coffee Break**

10:20 Arbitrary Optical Waveform Generation Using Planar Lightwave Circuits
Lawrence R. Chen, *Bing Xia*,

10:40 Investigation of Crosstalk Effects due to Optical Fiber Nonlinearities in WDM CATV Networks
Rakkappan Balasubramanian, *Yasumitsu Miyazaki*, *Masayoshi Kondo*,

11:00 Code Recognition for Optical Time-series WDM Coded Label Using Acoustooptic Switch Array
Nobuo Goto, *Yasumitsu Miyazaki*,

11:20 Spatial Filtering Characteristics of Transmitted and Scattered Nano-meter Electromagnetic Waves and X-rays in Bio-medical Media by Waveguide-type Grids
Yasumitsu Miyazaki,

11:40 FDTD Computational Analysis of X-ray Transmission and Scattering Characteristics in Medical Imaging Diagnosis
Yasumitsu Miyazaki, *Koichi Takahashi*, *Nobuo Goto*,

Session 4P1
Electromagnetics in Photonic Crystals

Thursday PM, March 29, 2007

Room C (Zhongyuan)

Organized by David Cardimona

Chaired by David Cardimona, Danhong Huang

13:00 Photonic Band Gap Materials: Engineering the Fundamental Properties of Light
Sajeev John,

13:20 Photonic Band Gap Materials: Engineering the Fundamental Properties of Light: Part II
Sajeev John,

13:40 Photonic Quasi-crystals: A Review
Robert C. Gauthier,

14:00 Photonic-crystal Lens Coupler Using Negative Refraction
Pi-Gang Luan, *Kao-Der Chang*,

14:20 Photonic Crystals with Hexagonal Periodicity for Efficient Light Emission LED
Rafie Mavaddat, *Dang Hoang Long*, *Sang-Wan Ryu*,

14:40 Numerical Study on Two-dimensional Magnetic Photonic Crystals Made of Magnetized Ferrites
Jie Xu, *Ping Chen*, *Yue Shi*, *Xin-Yi Ji*, *Ai-Min Jiang*, *Rui-Xin Wu*,

15:00 **Coffee Break**

15:20 Electrically Tunable 2-D Organic Photonic Crystal Lasers
Rachel Jakubiak, *Timothy J. Bunning*, *Richard A. Vaia*, *Pamela Lloyd*, *Vincent P. Tondiglia*, *Lalgudi V. Natarajan*, *Richard L. Sutherland*,

15:40 2D Nonlinear Photonic Crystals Nanocavities in Chalcogenide for All-optical Processing
Christian Grillet, *Cameron Smith*, *Snjezana Tomljenovic-Hanic*, *Eric C. Mägi*, *Yinlan Ruan*, *Darren Freeman*, *Barry Luther-Davies*, *Steve Madden*, *Andrei Rode*, *M. Lee*, *David Moss*, *Benjamin J. Eggleton*,

16:00 Silicon-based and Ge-based Photonic Crystals
P. Boucaud, *M. El Kurdi*, *X. Li*, *X. Checoury*, *S. David*, *S. Sauvage*, *G. Fishman*, *F. Fossard*, *N. Yam*, *D. Bouchier*, *J.-M. Fédéli*, *O. Kermarrec*, *Y. Campidelli*, *D. Bensahel*,

16:20 Second-order Nonlinear Processes in Planar Photonic Crystal Microcavities
Murray W. McCutcheon, *Georg W. Rieger*, *Jeff F. Young*, *Dan Dalacu*, *Simon Frédérick*, *Philip J. Poole*, *Geof C. Aers*, *Robin L. Williams*,

16:40 Observation of Whispering Gallery Resonances in Circular and Elliptical Semiconductor Pillar Microcavities
V. N. Astratov, *S. Yang*, *S. Lam*, *D. Sanvitto*, *A. Tahraoui*, *D. M. Whittaker*, *A. M. Fox*, *M. S. Skolnick*,

17:00 Electromagnetically Induced Transparency in Photonic Crystal Cavities
Paul M. Alsing, *D. A. Cardimona*, *Dan H. Huang*,

17:20 Design of Photonic Crystal Resonant Cavity Using Overmoded Dielectric Photonic Band Gap Structures
Limei Qi, *Ziqiang Yang*, *Zheng Liang*, *Wenxin Liu*, *Yu Liu*, *Xi Gao*,

17:40 Finite Element Analysis of Photon Density of States for Two-dimensional Photonic Crystals with In-plane Light Propagation
M. C. Lin, *R. F. Jao*,

18:00 Spontaneous Emission of a Two-level Atom in Photonic Crystals
Shi-Yao Zhu, *J. P. Xu*, *N. H. Liu*,

Session 4P2a
Low Frequency EM Wave Seabed Logging to Indicate the Existence of Hydrocarbon Layers 2

Thursday PM, March 29, 2007

Room B (Zhongyuan)

Organized by F. N. Kong

Chaired by F. N. Kong, Leiv-J. Gelius

13:00 Combined Depth Migration and Constrained Inversion of Low Frequency Electromagnetic Data
Rune Mittet, *Frank Maaø*, *Odd M. Aakervik*, *Svein Ellingsrud*,

13:20 Study on Work Parameters of Seafloor Towed Survey Using Transient Electromagnetic Systems
Fengdao Zhou, *Changsheng Liu*, *Jun Lin*, *Yan Wang*, *Hui Li*,

13:40 3D Modeling of the Marine CSEM Method Based on the Fast Integral Equation Solver
Ali Moradi Tehrani, *Evert Slob*,

14:00 TDEM by FDEM
Wim A. Mulder, *Evert C. Slob*,

14:20 Green's Function Retrieval by Crossconvolutions
Evert Slob,

14:40 The Study of Pseudo-random Multi-frequency IP Method of Exploring Seabed Hydrothermal Sulfide
Hua-Kun Du, *Jing-Tian Tang*,

15:00 **Coffee Break**

Session 4P2b
New Applications of Radar for Non-destructive Testing

Thursday PM, March 29, 2007

Room B (Zhongyuan)

Organized by Lorenzo Capineri, Colin G. Windsor

Chaired by Lorenzo Capineri, Colin G. Windsor

15:20 A Data Point-labelled Generalised Hough Transform for Extracting Reflections from Buried Objects in Ground Penetrating Radar Scans
C. G. Windsor, *G. Borgioli*, *P. Falorni*, *L. Capineri*, *B. Morini*, *S. Matucci*,

15:40 Solving Electromagnetic Inverse Scattering Problems by SVRMs: a Case of Study Towards Georadar Applications
G. Angiulli, *V. Barrile*, *M. Cacciola*,

16:00 A Ground-wave Technique for Pavement Permittivity and Thickness Estimation from GPR Data
Jing Li, *Huichun Xing*, *Ying Wang*, *Chienping Kao*, *Richard Liu*,

16:20 Comparison between Impulse and Holographic Subsurface Radar for NDT of Space Vehicle Structural Materials
S. I. Ivashov, *I. A. Vasiliev*, *T. D. Bechtel*, *C. Snapp*,

16:40 Analysis of Time Domain Ultra-Wide-Band Radar Signals Reflected by Buried Objects
P. Falorni, *L. Capineri*, *L. Masotti*, *C. G. Windsor*,

17:00 Analysis of Independent Components to Reduce Noise Impact in Ground Penetrating Radar Measurements
V. Barrile, *M. Cacciola*, *F. C. Morabito*,

Session 4P3
Dissipative Solitons 2

Thursday PM, March 29, 2007

Room A (Zhongyuan)

Organized by Nail Akhmediev

Chaired by Nail Akhmediev, Philippe Grelu

13:00 Bifurcations of Double Bullet Complexes in Dissipative Systems
N. Akhmediev, *J. M. Soto-Crespo*,

13:20 Modelling Dissipative Solitons in Electrical Transport Systems
Hans-Georg Purwins,

13:40 Interaction of Solitary Waves Governed by a Controlled Subcritical Ginzburg-Landau Equation
Y. Kanevsky, *A. A. Nepomnyashchy*,

14:00 Chirped Self-similar Pulse Propagation in Cubic-quintic Media
K. Senthilnathan, *Li Qian*, *P. K. A. Wai*, *K. Nakkeeran*,

14:20 Multi-wavelength Solitary Waves in Fiber Ring Laser
Jin U. Kang,

14:40 Using Gradients to Control Cavity Solitons
F. Pedaci, *P. Genevet*, *E. Caboche*, *S. Barland*, *M. Giudici*, *J. R. Tredicce*,

15:00 **Coffee Break**

15:20 Towards a Cavity Soliton Semiconductor Laser
L. A. Lugiato, *G. Tissoni*, *F. Prati*, *P. Caccia*, *M. Brambilla*, *M. Bache*, *R. Kheradmand*, *K. Aghdami*,

15:40 Dynamics of Optical Similariton Solutions of the Amplified Nonlinear Schrödinger Equation
S. Wabnitz,

16:00 Spatial Solitons in Cryogenic Semiconductor Resonators
C. O. Weiss, *Y. Larionova*,

16:20 Solitons in Metamaterials with Three Level Atoms
I. R. Gabitov, *A. I. Maimistov*, *J. B. McMahon*,

16:40 Soliton Interaction and Bound States in a System with Spectral Filtering and Nonlinear Gain
Mário F. S. Ferreira, *Sofia C. V. Latas*,

Session 4P4
Computational Electromagnetics

Thursday PM, March 29, 2007

Room D (Zhongyuan)

Organized by Xiao-Bang Xu

Chaired by Xiao-Bang Xu, Xing Chen

13:00 Simulation of Electromagnetic Pulse Propagation through Dielectric Slabs with Finite Conductivity Using Characteristic-based Method
Mingtsu Ho,

13:20 Broadband PLC Radiation from a Power Line with Sag
Nan Maung, *Xiao-Bang Xu*,

13:40 A Novel Broadband Quasi-fractal Binary Tree Dipole
Xing Chen,

14:00 Hybrid Nyström-PO Method for 3D EM Scattering and Its Application
Shuguang Liu, *Xiaojuan Zhang*,

14:20 A Novel Mesh-free Method for Electromagnetic Scattering from a Wire Structure
Min Zhang, *Lingxia Li*, *Ping Zhou*, *Xiangyang Zhang*,

14:40 Evaluating Surface Impedance Models for Terahertz Frequencies at Room Temperature
S. Lucyszyn,

15:00 **Coffee Break**

15:20 Reduction of Monostatic RCS by Switchable FSS Elements
M. Khosravi, *M. S. Abrishamian*,

15:40 A General and Efficient Parallel Approach of the Hybrid FE/BI/MLFMA
Xiao-Min Pan, *Xin-Qing Sheng*,

16:00 Parallel FDTD Computation of Scattering by Buried Objects
X. Y. Zhang, *X. Q. Sheng*,

16:20 Finite-difference Time-domain Grid Truncation with Squeeze-transform Layers
D. M. Shyroki,

16:40 Full-vector Body-of-revolution Modeling with Two-dimensional Cartesian-grid-based Algorithms
D. M. Shyroki,

17:00 Fast Solution of Scattering from Conducting Structures by Local MLFMA Based on Improved Electric Field Integral Equation
Jun Hu, *Zaiping Nie*, *Lin Lei*, *Huapeng Zhao*, *Jun Wang*,

17:20 On the Single Integral Equation for Homogeneous Dielectric Objects
Chu-Qiang Deng, *Xin-Qing Sheng*,

Session 4P5a
MRI Electromagnetics

Thursday PM, March 29, 2007

Room E (Jinyuan)

Organized by Donglin Zu

Chaired by Donglin Zu, Xin Tang

13:00 Shimming Permanent Magnet of MRI Scanner
Liming Hong, *Donglin Zu*,

13:20 Research on Target-field Method for Designing Gradient Coil in Permanent-magnet MRI System
Wentao Liu, *Donglin Zu*,

13:40 A New Target Field Method for Optimizing Longitudinal Gradient Coils' Property
Feng Qi, *Xin Tang*, *Zhe Jin*, *Le Wang*, *Donglin Zu*, *Weimin Wang*,

14:00 A New Method for Shimming a Magnetic Field in NMR System
Zhe Jin, *Xin Tang*, *Feng Qi*, *Donglin Zu*, *Weimin Wang*,

14:20 A New Eddy-current Compensation Method in MRI
C. Ma, *X. H. Jiang*,

14:40 Calculating Efficient Noise Resistance of RF Coils for Low Field MRI Systems
Y. Li, *X. H. Jiang*,

15:00 **Coffee Break**

Session 4P5b
Medical Electromagnetics and Biological Effects

Thursday PM, March 29, 2007

Room E (Jinyuan)

Chaired by Nam Kim, Suryanarayana raju Gottumukkala

15:20 Some Studies on Electromagnetic Waves through Biotissues
G. Narmada Devi, *Rajesh Kucharlapati*, *G. S. N. Raju*,

15:40 On the Radio-frequency Power Requirements of Human MRI
L. Tang, *T. S. Ibrahim*,

16:00 Effects of Mobile Phone Radiation on Expression Profiling of Proteins, Cell Cycle, and Cellular Invasion and Migration
Ki-Bum Kim, *Joong-Won Lee*, *Yun-Mi Lee*, *Hee-Jin Kwak*, *Myung-Jin Park*, *Jeong-Ki Pack*, *Nam Kim*, *Hyung-Do Choi*, *Jae-Seon Lee*,

16:20 Comparison of Maximum Induced Current and Electric Field from Transcranial Direct Current and Magnetic Stimulations of a Human Head Model
Mai Lu, *T. Thorlin*, *Shoogo Ueno*, *Mikael Persson*,

16:40 Magnetic Field Produced by Compound Action Potential of Degenerated Human Nerve
T. Hayami, *K. Iramina*,

Session 4P6
Advances in EM Computer-Aided Design

Thursday PM, March 29, 2007

Room F (Xiuyuan)

Organized by Qijun Zhang

Chaired by Qijun Zhang, Ming Yu

13:00 EM Methods for MIC Modeling and Design: An Overview
Mustapha C. E. Yagoub, *Mohamed L. Tounsi*,

13:20 CAD of Left-handed Transmission Line Bandpass Filters
L. Zhu, *V. K. Devabhaktuni*, *C. Wang*,

13:40 Optimal Shape Design of the Electromagnetic Devices in a Level Set Based Implicit Moving Boundary Framework
Jijun Xiao, *Liu Yang*,

14:00 Optimal Model for Wiggly Coupled Microstrips in Directional Coupler and Schiffman Phase Shifter
Ming-Wei Zhou, *Li Li*, *Qiu-Yan Yin*,

14:20 A Simple Technique for Efficient Computation of Electromagnetic Coupling in Microwave Integrated Circuits
Dave McPhee, *Sashieka Seneviratne*, *Mustapha C. E. Yagoub*,

14:40 On Quantum Corrections to Space Charge Waves in Silicon
A. Garcia-B, *V. Grimalsky*, *E. Gutierrez-D.*, *S. Koshevaya*,

15:00 **Coffee Break**

15:20 Pad Modeling by Using Artificial Neural Network
Xiuping Li, *Jianjun Gao*,

15:40 Parametric Models for Electromagnetic Field Systems Related to Passive Integrated Components
Daniel Ioan, *Gabriela Ciuprina*,

16:00 Space Mapping and Neuro-space Mapping for Microwave Design
J. W. Bandler, *Q. J. Zhang*,

16:20 Applications of Artificial Neural Network Techniques in Microwave Filter Modeling, Optimization and Design
H. Kabir, *Y. Wang*, *M. Yu*, *Q. J. Zhang*,

16:40 Neural-based Transient Behavioral Modeling of IC Buffers for High-speed Interconnect Design
Yi Cao, *Qi-Jun Zhang*, *Ihsan Erdin*,

17:00 A Space-Mapping Based CAD Methodology for Modeling Temperature Characteristics of Combline Resonators
A. Kashi, *P. Kumar*, *M. Caron*, *V. K. Devabhaktuni*,

17:20 Fast Computational Model for Electrical Characterization of Complex 3D-packaging
Er-Ping Li, *En-Xiao Liu*, *Zaw-Oo Zaw*, *Yao-Jiang Zhang*, *Xing-Chang Wei*,

Session 4P7
Antenna Theory and Radiation

Thursday PM, March 29, 2007

Room G (Hengyuan)

Organized by Xiaojuan Zhang

Chaired by Xiaojuan Zhang

13:00 Communication of Ultra-short Wave in Shadow Region and the Antenna Feasibility Analysis
Ping Li, *Zhi-Yuan Zhao*, *Tao Zou*,

13:20 A Chebyshev Tapered TEM Horn Antenna
S. Bassam, *J. Rashed-Mohassel*,

13:40 Low Power Dissipation SEU-hardened CMOS Latch
Yuhong Li, *Suge Yue*, *Yuanfu Zhao*, *Guozhen Liang*,

14:00 Mutual Coupling of Rectangular DRA in a Four Element Circular Array
S. Jarchi, *J. Rashed-Mohassel*, *M. H. Neshati*,

14:20 Flat Beams with Phase Control
R. Ramana Reddy, *U. Jayalakshmi*, *G. S. N. Raju*,

14:40 Wideband Microstrip Antenna Array Using U-slot
Wenwen Chai, *Xiaojuan Zhang*, *Shuguang Liu*,

15:00 **Coffee Break**

15:20 Numerical and Experimental Analysis of Bow-tie Antennas with Changing of Shield's Height
Kai Zhou, *Wenji Zhang*, *Xiaojuan Zhang*,

15:40 Some Investigations on the Radiation Patterns of Arrays Generated by Additional Analog and Digital Phase Distributions
G. S. N. Raju,

16:00 Terahertz Radiation from the Grating Waveguide Loaded Plasma
Wenxin Liu, *Ziqiang Yang*, *Zheng Liang*, *Limei Qi*, *Yu Liu*, *D. Li*, *K. Imasaki*,

16:20 A Novel Linear Beamforming Algorithm
Shuangning Shi, *Yong Shang*, *Qinglin Liang*,

16:40 The Performance of QSP Beamformer with Array Errors
Shuangning Shi, *Yong Shang*, *Qinglin Liang*, *Bin Liang*,

17:00 The New Approach to Computing the Transparency of Horn Layer of Linear Antenna Lattice
P. V. Filonov, *V. L. Kuznetsov*,

Session 5A1
Metamaterials and Photonic Crystals

Friday AM, March 30, 2007

Room C (Zhongyuan)

Chaired by Alain Priou, Lindsay C. Botten

08:20 Accurate Defect Mode Modelling in Photonic Crystals Using the Generalised Fictitious Source Superposition Method
L. C. Botten, *K. B. Dossou*, *S. Wilcox*, *R. C. McPhedran*, *C. M. de Sterke*, *N. A. Nicorovici*, *A. A. Asatryan*,

08:40 Extraction of Electrical Material Properties: Development of a New Enhanced Convergence Algorithm Available for Loss Material and Metamaterial Structures
Redha Abdeddaim, *Habiba Hafdallah Ouslimani*, *Alain Priou*,

09:00 New Electrical Model for Left Handed Materials
Redha Abdeddaim, *Habiba Hafdallah Ouslimani*, *Alain Priou*,

09:20 On Local Bianisotropic Metamaterials
E. O. Kamenetskii,

09:40 A Bianisotropic Left-handed Metamaterials Compose of S-ring Resonator
Xiangxiang Cheng, *Hongsheng Chen*, *Lixin Ran*, *Bae-Ian Wu*, *Tomasz M. Grzegorczyk*, *Jin Au Kong*,

10:00 **Coffee Break**

10:20 The Bragg Scattering Properties on One-dimensional Composite Right/Left-handed Transmission Line
H. Li, *L. He*, *Y. Zhang*,

10:40 A Microstrip Highpass Filter with Complementary Split Ring Resonators
C. Li, *K. Y. Liu*, *F. Li*,

11:00 High Directive Cavity Antenna Based on 1D LHM-RHM Resonator
Tao Jiang, *Yu Yuan*, *Dongxing Wan*, *Lixin Ran*, *Jin Au Kong*,

11:20 Imaging of Objects through Lossy Layer with Defects
Xiangxiang Cheng, *Bae-Ian Wu*, *Tomasz M. Grzegorczyk*, *Jin Au Kong*,

Session 5A2
Methods in Electromagnetic Scattering by Rough and Complex Surfaces

Friday AM, March 30, 2007

Room B (Zhongyuan)

Organized by Mark Spivack

Chaired by Christos Christopoulos

08:00 Low Grazing Scattering from Periodic Neumann Surface with Finite Extent
Junichi Nakayama, *Kazuhiro Hattori*, *Yasuhiko Tamura*,

08:20 A Two-scale Model for Composite Rough Surface Scattering
W. Z. Yan, *L. X. Xu*, *Y. Du*, *F. Sheng*, *Z. N. Li*, *J. A. Kong*,

08:40 A Multi-section Method for Scattering by Unbounded Surfaces
R. W. E. Potthast, *M. Lindner*,

09:00 A Modified Scheme of Sparse-matrix Canonical-grid Method for Rough Surface Scattering Using Interpolating Green's Function
M. Y. Xia, *S. W. Huang*, *G. H. Zhang*,

09:20 Scattering of TE Plane Wave from Periodic Grating with Random Defects
Kazuhiro Hattori, *Junichi Nakayama*,

09:40 Buffered Block Forward Backward Method with Relaxation for 3D Scattering Problems
C. Brennan, *M. Mullen*,

10:00 **Coffee Break**

10:20 Interaction of Electromagnetic Waves with Complex Materials
C. Christopoulos, *J. Paul*, *D. W. P. Thomas*,

10:40 Backscatter Enhancement for Rough Dielectric Surfaces in Left-right Operator Splitting
O. Rath, *M. Spivack*,

11:00 Application of the Stochastic Second-degree Iterative Method to EM Scattering from Randomly Rough Surfaces
Y. Du, *J. A. Kong*,

11:20 Scattering in Random Media Applied to Terahertz Time Domain Spectroscopy
L. M. Zurk,

11:40 Impact of Sea Ice Morphology on Altimeter Performance
J. Fletcher, *M. Spivack*, *P. Wadhams*,

Session 5A3
Large-scale Passive Optical Waveguide Devices, Design and Simulation

Friday AM, March 30, 2007

Room A (Zhongyuan)

Organized by Hung-Wen Chang

Chaired by Hung-Wen Chang

08:20 Computing Optimal Two-dimensional Waveguide Bends
Zhen Hu, *Ya Yan Lu*,

08:40 Analysis of Dielectric Waveguide Bending with Planar Layer Modes of Similar Structure
Hung-Wen Chang,

09:00 Numerical Analysis of SPM and XPM Penalties of the Conventional IM-DD System with NRZ and RZ Format
H. Taga, *H. W. Chang*,

09:20 Vectorial Leaky Mode Simulation of 2D Ridged Antiresonant Reflecting Optical Waveguides (ARROWs)
Meng-Huei Sheng, *Chia-Chun Chung*, *Hung-Wen Chang*,

09:40 Dispersion Relationships of AlGaInAs-InP DBR Gratings Using Floquet-Bloch Theory
Jiun-Jie Liau, *Jia-Huei Lin*, *Min-Xiu Jiang*, *Nai-Hsiang Sun*, *Jerome K. Butler*, *Gary A. Evans*,

10:00 **Coffee Break**

10:20 Dispersion Relationships of AlGaInP-InP Surface-emitting Lasers Using Floquet-Bloch Theory
Jiun-Jie Liau, *Shih-Han Chen*, *Yi-Ann Lin*, *Nai-Hsiang Sun*, *Jerome K. Butler*, *Gary A. Evans*,

10:40 Avalanche Photodetector Design for the Mid-infrared Using GaSb-based Alloys
R. Bhatia, *M. Grzesik*, *S. Vangala*, *K. Vacarro*, *W. Goodhue*, *C. Armiento*,

11:00 High-quality Ultra-uniform Quantum Dot (QD) Fabrication Techniques for High-performance Terahertz Quantum Cascaded Laser
Xuejun Lu,

11:20 Multi-mode One-way Theory for Micro-ring Cavities
Yi-Cheng Yang, *Wei-Chi Cheng*, *Hung-Wen Chang*,

Session 5A4a
Computational Electromagnetis and Photonics, Method and Applications

Friday AM, March 30, 2007

Room D (Zhongyuan)

Organized by Humberto Cesar Chave Fernandes

Chaired by Humberto Cesar Chave Fernandes, Davi Bibiano Brito

08:00 Applications of Modular RBF/MLP Neural Networks in the Modeling of Microstrip Photonic Bandgap Structures
M. G. Passos, *H. C. C. Fernandes*, *P. H. da F. Silva*,

08:20 Mobile Broadband: The Emergency of IEEE 802.16e
Humberto César Chaves Fernandes, *Davi Bibiano Brito*,

08:40 Rectangular Slot Resonator with Four Dielectric Layers
Humberto César Chaves Fernandes, *Humberto Dionísio de Andrade*, *Davi Bibiano Brito*, *Manoel Bonfim Lins de Aquino*,

09:00 Multilayer Planar Resonators with Superconductive Patch on PBG Substrate
Humberto César Chaves Fernandes, *George Dennes Fernandes Alves*,

09:20 Photonic Crystal at Millimeter Waves Applications
Humberto César Chaves Fernandes, *Joêmia Leilane G. Medeiros*, *Isnaldo M. A. Júnior*, *Davi B. Brito*,

09:40 Novel Neural Network Models of Q-Type Integrals and Their Use for Circular-loop Antenna Analysis
Humberto César Chaves Fernandes, *M. G. Passos*, *P. H. da F. Silva*,

10:00 **Coffee Break**

Session 5A4b
Computational Electromagnetics: ADI-FDTD

Friday AM, March 30, 2007

Room D (Zhongyuan)

Chaired by Hong-Xing Zheng

10:20 A Modified PML Conductivity Profile for the ADI-FDTD Method with Split-field PML
Jiunn-Nan Hwang, Fu-Chiarng Chen,

10:40 Refraction in Chiral Medium with a Negative Refractive Index Simulated by the ADI-FDTD Method
Hong-Xing Zheng, Kwok Wa Leung,

11:00 On the ADI-FDTD Algorithm for Inhomogeneous Elastic Media
Hong-Xing Zheng, Kwok Wa Leung,

11:20 Time-domain Computation of Electromagnetic Scattering Using ADI-PSTD Algorithm
Hong-Xing Zheng, Kwok Wa Leung,

Session 5A5
Photonics Computer-Aided Design

Friday AM, March 30, 2007

Room E (Jinyuan)

Organized by Chenglin Xu, Li Yang

Chaired by Chenglin Xu, Li Yang

08:40 Coupled-mode Theory for Spun 4-lobe Stress Region Fibers
Jingren Qian, Xuxu Wang,

09:00 A Compact Branch-type TE/TM Wave Splitter Using a Surface Plasmon Waveguide
Tomohide Yamazaki, Junji Yamauchi, Hisamatsu Nakano,

09:20 The Effect of Radiation Coupling in Higher Order Fiber Bragg Grating
Li Yang, Wei-Ping Huang, Xi-Jia Gu,

09:40 A Vector Finite-element Method for Open Waveguides Using Boundary Integral Equations
H. S. Yoo, A. Gopinath,

10:00 **Coffee Break**

10:20 Applications of Cladding Stress Induced Effects for Advanced Polarization Control in Silicon Photonics
D.-X. Xu, P. Cheben, A. Delâge, S. Janz, B. Lamontagne, M.-J. Picard, E. Post, P. Waldron, W. N. Ye,

10:40 A Dirichlet-to-Neumann Map Method for Analyzing Second Harmonic Generation in Piecewise Uniform Waveguides
Lijun Yuan, Ya Yan Lu,

11:00 Application of Fourth Order Finite Difference Method in Photonic Simulations
Lei Zhao, Hua Zhang, Wei-Ping Huang,

Session 5A6
Waveguides, Circuits and Systems

Friday AM, March 30, 2007

Room F (Xiuyuan)

Chaired by Mitsuo Tateiba, Tsuneki Yamasaki

08:00 On-chip Electromagentic Shielding and Differential Technologies for Performance Enhancement of Silicon-based Devices and Circuits in RF(MM)ICs
Wen-Yan Yin, Lin Liang, Junfa Mao,

08:20 Analysis of Crosstalk between Single-ended and Differential Lines
F. Xiao, R. Hashimoto, K. Murano, Y. Kami,

08:40 A Study of the Confirming Method on 20H Rule in High Speed PCB Design
Wei Chen, Qiuyuan Huang, Peng Zhou, Bin Wang,

09:00 De-embedding Techniques for Passive Components Implemented on a 0.25 µm Digital CMOS Process
Marc D. Rosales, Honee Lyn Tan, Louis P. Alarcon, Delfin Jay Sabido IX,

09:20 Extraction of Subterahertz Transmission-line Parameters of Coplanar Waveguides
Jingjing Zhang, Thomas Y. Hsiang,

09:40 Design of MEMS Controlled Phased Shifter Using SCT
N. Raveu, E. Perret, H. Aubert, H. Legay,

10:00 **Coffee Break**

10:20 Waveguide Analysis Using Multiresolution Time Domain Method
Xiaoli Huang, Xia Ling, Haiyan Chen,

10:40 Application of FDTD-overlapping Integral Method in Simulation of Waveguide Amplifier
J. Z. Wang, P. Zhang, Y. Z. Liu,

11:00 Reliability Analysis of the Circuit and FM Modulation Parameters for the First Harmonic Level Reduction of the Forward Switching Power Supplies
Shahram Hosseinzadeh, Nader Samsunchi,

11:20 Beam-wave Coupling in a Double-beam Gyrotron Traveling Wave Amplifier
Chong-Qing Jiao, Ji-Run Luo,

11:40 One Cell Slow-wave Compact Microstrip Bandpass Filter with Suppression of Higher Harmonics
Dusan Nesic,

Session 5A7
Antennas and Systems

Friday AM, March 30, 2007

Room G (Hengyuan)

Chaired by W. B. Dou

08:20 Signal Correlation due to Scattering in Coupled Multi-antenna Systems
Snezana Krusevac, Predrag B. Rapajic,

08:40 A Compact Polarization-MEMS-Reconfigurable Multi-Port Antenna for Diversity Systems
A. Grau, J. Romeu, L. Jofre, F. De Flaviis,

09:00 BOR-FDTD Analysis of Spherical Lens Multi-beam Antenna
Y. H. Li, W. B. Dou,

09:20 Rolled Dipole Antenna for Low-resolution GPR
A. A. Lestari, D. Yulian, A. B. Suksmono, E. Bharata, A. G. Yarovoy, L. P. Ligthart,

09:40 Viability of Convex-modulated Exponential Serraions for Improved Performance of CATRs
T. Venkata Rama Krishna, P. Siddaiah, B. Prabhakara Rao,

10:00 **Coffee Break**

10:20 Antenna Design for Ultra Wideband Application Using a New Multilayer Structure
Yashar Zehforoosh, Changiz Ghobadi, Javad Nourinia,

10:40 Dual-band CPW-fed G-shaped Monopole Antenna for 2.4/5 GHz WLAN Application
Wen-Chung Liu, Chao-Ming Wu,

11:00 Design CPW Fed Slot Antenna for Wideband Applications
K. Nithisopa, J. Nakasuwan, N. Songthanapitak, N. Anantrasirichai, T. Wakabayashi,

11:20 e-Shaped Slot Antenna for WLAN Applications
T. Archevapanich, J. Nakasuwan, N. Songthanapitak, N. Anantrasirichai, T. Wakabayashi,

11:40 Compact GPS Microstrip Patch Antenna
A. A. Abdelaziz, Dalia M. Nashaat,

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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

ONE PAGE ABSTRACT MUST BE RECEIVED BY 20 FEBRUARY 2007

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

Please use On-Line-Submission (**http://piers.org**) to submit your contribution or via email (tpc@piers.org and/or piers@ewt.mit.edu) by attachments. Authors are recommended to use *.tex, *.doc, or *.pdf as the file format. The abstract submission deadline is **20 February 2007** and the author pre-registration deadline is **20 April 2007**.

Full-length Papers: Author of an accepted abstract is invited to (but is not required to) submit a full-length paper of no more than five pages. A full-length paper should contain an Abstract, an Introduction, Main text, Conclusion and References. All abstracts and peer reviewed full-length papers will be published in the related PIERS Publications after the author is preregistered. Selected full-length papers will be published in **PIERS Online**. The deadline for the submission of extended papers is **20 April 2007**.

A CD-ROM, instead of printed hard copies, will be attached to the printed Technical Program of PIERS 2007 in Prague. Please visit PIERS2007 website for the latest PIERS online sample files.

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Each presenting author is limited to presenting no more than three papers in oral and poster sessions, and must preregister by paying a non-refundable fee of **US$395** before **20 April 2007**. For students with valid identification, the non-refundable pre-registration fee is **US$195**. Registration fee will be raised to **$500** after **20 April 2007**. Papers will be posted in their entirety on the web after the pre-registration is completed.
Updated and detail information will be posted at **http://piers.org** and **http://emacademy.org**.

	MONDAY AM 8:00 MARCH 26	MONDAY PM 13:00 MARCH 26		TUESDAY AM 8:00 MARCH 27		TUESDAY PM 13:00 MARCH 27	
ROOM C	1A1 - NSFC Workshop on Metamaterials 1	1P1 - NSFC Workshop on Metamaterials 2		2A1 - Novel Theoretical Advances and Potential Applications of Metamaterials		2P1 - Metamaterials: Physics, Fabrication and Applications	
ROOM B	1A2 - Polarimetric Radar Remote Sensing	1P2a - Rough Surface Scattering and Related Phenomena	1P2b - Remote Sensing and Scattering	2A2 - Remote Sensing of Water Cycle Related Components		2P2a - Active and Passive Remote Sensing	2P2b - Scattering and Emission Models for Microwave Remote Sensing
ROOM A	1A3 - Periodical Structure, EM Theory and Applications	1P3a - Theory of Debye plasmas, Screened Coulomb Potentials, Radiation from Weakly Coupled Plasmas	1P3b - Optical Fiber and Wireless Communication	2A3 - Optical Matter: Modeling and Experimental Realizations 1		2P3 - Optical Matter: Modeling and Experimental Realizations 2	
ROOM D	1A4 - Safety Issues of Wireless Communication	1P4 - New Challenges and Opportunities in Computational Electromagnetics		2A4 - Extended/Unconventional Electromagnetic Theory, EHD/EMHD and Electrobiology 1		2P4a - Extended/Unconventional EM Theory, EHD/EMHD and Electrobiology 2	2P4b - Plasmas: Normal and Unconventional
ROOM E		1P5 - Inverse Problem in the Mechanics, Materials and Electromagnetics		2A5 - Microwave Applications in Material Processing and Characterization		2P5 - Electromagnetic Modeling and Inversion and Applications	
ROOM F				2A6a - Biomedical Applications of Light Scattering Methods	2A6b - Medical and Biolgical Applications of Microwaves	2P6 - Microwave and Millimeter Wave Circuits and Devices, CAD	
ROOM G				2A7 - Electromagnetic Systems and Components for Defense and Security		2P7a - Compact Multiband Antenna	2P7b - Planar Antennas and Propag. for Mobile Communications
ROOM K	1AP - Poster Session 1			2AP - Poster Session 2			

	WEDNESDAY AM 8:00 MARCH 28	WEDNESDAY PM 13:00 MARCH 28	THURSDAY AM 8:00 MARCH 29	THURSDAY PM 13:00 MARCH 29	FRIDAY AM 8:00 MARCH 30
ROOM C	3A1 - Metamaterials towards the Visible		4A1a - Biophotonics and Plasmonics 4A1b - Nanotechnology	4P1 - Electromagnetics in Photonic Crystals	5A1 - Metamaterials and Photonic Crystals
ROOM B	3A2 - Direct and Inverse Scattering Problems for Rough Surfaces	3P4 - Plasmonics: Nanoscale, Ultrafast, Anisotropic, Nonlinear, and Active Phenomena (**ROOM H**)	4A2 - Low Frequency EM Wave Seabed Logging to Indicate the Existence of Hydrocarbon Layers 1	4P2a - Low Freq. EM Wave Seabed Logging to Indicate Hydrocarbon Layers 2 4P2b - New Applications of Radar for Non-destructive Testing	5A2 - Methods in Electromagnetic Scattering by Rough and Complex Surfaces
ROOM A	3A3 - Optics and Photonics, Gyrotrons, THz Technology	3P5 - Electromgnetics in Lightning Research (**ROOM I**)	4A3 - Dissipative Solitons 1	4P3 - Dissipative Solitons 2	5A3 - Large-scale Passive Optical Waveguide Devices, Design and Simulation
ROOM D	3A4 - Novel Mathematical Methods in Electromagnetics	3P6a - Electromagnetic Scattering: Theory and Applications (**ROOM J**) 3P6b - EM Signatures for Natural and Man-made Objects (**ROOM J**)	4A4 - Integral Equations and Fast Solvers	4P4 - Computational Electromagnetics	5A4a - CEM& Photonics, Method and Applications 5A4b - CEM: ADI-FDTD
ROOM E	3A5 - Plasmonic Nanophotonics	3P1 - Novel Materials and Methods in Photonic Crystals	4A5 - Electromagnetic and Seismic and Flow Field Imaging in the Geophysical and Enviroment Sciences and Engineering	4P5a - MRI Electromagnetics 4P5b - Medical Electromagnetics and Biological Effects	5A5 - Photonics Computer-Aided Design
ROOM F	3A6 - Wireless Communication Component	3P2 - Advanced Inverse Scattering Techniques for Non-invasive Diagnostics Applications	4A6 - High Speed I/O Signal and Power Integrity Analysis	4P6 - Advances in EM Computer-Aided Design	5A6 - Waveguides, Circuits and Systems
ROOM G	3A7 - Microstrip Patch Antennas, Phased Arrays and Optical Beam Forming	3P3 - Adaptive, Multifrequency and Wideband Antennas for Wireless Systems	4A7 - Electromagnetic and Optical Wave Technologies for Communications and Sensing	4P7 - Antenna Theory and Radiation	5A7- Antennas and Systems