

Commission B, Fields and Waves
Activity report
August 2009–October 2009

1 PIERS 2009 in Moscow

The 26th Progress In Electromagnetics Research Symposium

PIERS provides an international forum for reporting progress and recent advances in all aspects of electromagnetics. Spectra range from statics to RF, microwave, photonics, and beyond. Topics include radiation, propagation, diffraction, scattering, guidance, resonance, power, energy and force issues, and all applications and modern developments.

1.1 Statistics

Date: 18–21 August, 2009

Venue: Moscow, Russia

Web page: <http://piers.mit.edu/piers2k9Moscow/>

Number of oral presentations: 623

Number of poster presentations: 201

Oral contributions from Japan: 43

Poster contributions from Japan: 3

1.2 Technical sessions

- Remote Sensing, RADAR Imaging & Detection
- Anisotropic and Liquid Crystals Optics
- Geometric Phases and Transport in Polarization and Singular Optics
- Systems and Components, Electromagnetic Compatibility
- Numerical and Semi-analytic Modelling of Photonic Crystals
- Electromagnetic Field in the Metamaterials and Dispersion Design of Cloaks and Photonic Crystals
- Novel Mathematical Methods in Electromagnetics
- Applicators for Medical and Industrial Applications of EM Field
- Medical Electromagnetics, RF Biological Effect
- Antenna and Array: Theory and Design
- Electromagnetic Probing of Atmosphere and Ionosphere
- Theory and Methods of Digital Signal and Image Processing
- New Applications of Ground Penetrating Radar for Non-destructive Testing
- Light Scattering and Radiative Transfer: Theories and Applications
- Plasmonics, Metamaterials, and Magneto-Optics
- Power Electronics
- RF and Wireless Communication
- Antenna Theory and Radiation

- Nonlinear Dynamics in Electromagnetics, Electronics and Animate Nature
- Microwave and Millimeter Wave Circuits and Devices, CAD
- Advanced Photonics-based Devices for Telecom Systems
- Synthetic Aperture Radar (SAR) Satellite Status and Evolution
- Biomedical Electromagnetism Instruments, Electromagnetism Condensed Materials and Imaging
- Microwave Treatment of Materials
- Electromagnetic Theory and Applications
- Electromagnetic Noise Exploitation: from Stochastic Resonance to Energy Harvesting
- Microwave Devices Using Composite Materials
- Electromagnetic Field Modeling, Inversion and Applications
- Satellite Thermal Monitoring of the Ocean Surface and the Earth Surface
- Scattering, Emission and Remote Sensing of the Atmosphere
- Optical Solitons
- Nanophotonics: Materials and Device Applications
- Computational Techniques
- Advanced High Frequency Electromagnetic Simulation Tools
- Extended/Unconventional Electromagnetic Theory, EHD/EMHD, and Electro-biology
- Theory and Modeling of Multimode Transmission Lines: Waveguides, Microstrip Lines, Dielectric Waveguides
- Rough Surface Scattering and Related Phenomena
- Superconductive Active and Passive Devices and Circuits: Models and Techniques of Simulation
- Inverse and Forward Problems in Radiative Transport
- Computational Electromagnetics
- Magnetolectric Composites: Physics and Applications
- Modern Hybrid Methods in the Problems of Computational Electromagnetics
- Ultra Wide Band and Chaotic Communications
- Asymptotic High Frequency Methods
- Microwave and Millimeter-wave Devices and Circuits with CAD
- Electromagnetic Waves and Media
- Advances in Communication and Imaging in Complex Environment
- THz, Photonic Crystals, Nanophotonics and Plasmonics
- Photonics – Theory and Applications
- Electromagnetic Theory of Plasmas, Nonlinear and Chiral Media
- Magnetic Microwave Smart Materials
- Nonlinear and Tunable Metamaterials
- Scattering and Rough Surface Scattering
- Optics and Photonics
- Magnetism, Magnetic Structures and Devices

- Integral Equations Method in Large Electromagnetic Problems
- Biophotonics: Basis and Applications
- Electromagnetics and its Application in the Advanced Manufacturing Technology
- Asymptotic Methods and Catastrophe Theory

2 ISAP 2009

2009 International Symposium on Antennas and Propagation

The 14th International Symposium on Antennas and Propagation (ISAP 2009) is held during October 20-23, 2009 at the Imperial Queen 's Park Hotel in Bangkok, Thailand. This year the symposium is organized and sponsored by the Electrical Engineering/ Electronics, Computer, Telecommunications and Information Technology (ECTI) Association of Thailand in cooperation with King Mongkut 's University of Technology North Bangkok. It is technically co-sponsored by the IEICE, IEEE Antennas and Propagation Society, IEEE Geoscience and Remote Sensing Society, IEICE Bangkok Section, IEEE Thailand Section and IEEE MTT/AP/ED Thailand Chapter. The objective of the ISAP 2009 is to continue and accelerate the momentum of researching in the area of antennas and propagation and bring together worldwide researchers to discuss and exchange experiences in this field.

2.1 Statistics

Date: 20–23 October, 2009

Venue: Bangkok, Thailand

Web page: <http://www.isap09.org/>

Number of oral presentations: 305

Oral contributions from Japan: 114

2.2 Technical sessions

- Patch and Array Antennas
- Slot and Aperture Antennas
- MIMO and Diversity Antennas
- Small Antennas
- Multiband and Wideband Antennas
- Adaptive Antennas
- Terrestrial and Indoor Propagation
- Satellite Communication
- Passive Circuits
- Active Circuit
- Computational Electromagnetic
- Computation in Electromagnetic
- Metaterial and Magneto Material
- Reflector antennas
- Millimeter Wave Antenna and Laser
- Random Media and Rough Surfaces

- Small Loop Antennas
- UWB Antennas
- EM-Measurement
- Integrated Circuit Antennas
- Communication Systems
- UHF RFID
- Antenna System
- High-Frequency Techniques

3 Future Conferences

3.1 PIERS 2010 in Xi'an

The 27th PIERS (Progress In Electromagnetics Research Symposium) in Xi'an

Date: 22–26, March, 2010

Location: Xi'an, China

Web page: <http://piers.mit.edu/piers2010xian/>

3.2 EuCAP2010

The 4th European Conference on Antennas and Propagation

Date: 12–16 April, 2010

Location: Barcelona, Spain Web page: <http://www.eucap2010.org/>

3.3 PIERS 2010 in Cambridge

The 27th PIERS (Progress In Electromagnetics Research Symposium) in Xi'an

Date: 5–8, July, 2010

Location: Cambridge, USA

Web page: <http://piers.mit.edu/piers2010Cambridge/>

3.4 2010 IEEE AP-S & USNC/URSI

The 2010 IEEE International Symposium on Antennas and Propagation and the 2009 USNC/URSI (U.S. National Committee of the International Union of Radio Science) National Radio Science meeting

Date: 11–17 July, 2010

Venue: Sheraton Centre Hotel in Toronto, Ontario, Canada

Web page: <http://www.apsursi2010.org/>