2013 Joint UFFC, EFTF and PFM Symposium

IEEE International Ultrasonics Symposium (IUS), Joint IEEE International Symposium on the Applications of Ferroelectric (ISAF) and Piezoresponse Force Microscopy and Nanoscale Phenomena in Polar Materials (PFM), Joint IEEE-International Frequency Control Symposium (IFCS) and European Frequency and Time Forum (EFTF)

21-25 July 2013, Prague, Czech Republic

Sponsored by the IEEE Ultrasonics, Ferroelectrics, Frequency Control Society and European Frequency and Time Forum

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CALL FOR PAPERS

Abstract Submission Deadline: Friday March 1, 2013.

Please refer to http://ieee2013.fzu.cz/ for details.

The joint UFFC Symposia with European Frequency and Time Forum (EFTF) and Piezoresponse Force Microscopy and Nanoscale Phenomena in Polar Materials Workshop (PFM) will be held in Prague, Czech Republic, July 2013. This joint conference celebrates the 60th anniversary of the IEEE UFFC Society and also will be the 6th in a series of successful joint meetings between the EFTF and IFCS and the 3rd joint meeting between the ISAF and PFM.

Sunday July 21: Short Courses and Tutorials
Monday July 22: IUS plenary presentation
Tuesday July 23: ISAF–PFM plenary presentation
Wednesday July 24: IFCS–EFTF plenary presentation
Monday–Thursday July 22–25: Oral and poster sessions

Exhibition: A technical exhibition will be held during the conference. Detailed information can be found on the conference website http://ieee2013.fzu.cz/.

Tutorials: On Sunday, July 21, 2013, there will be a series of tutorials covering a wide range of related topics from IUS, ISAF–PFM & EFTF–IFCS. The tutorials include both the fundamental and advanced topics related to specific areas. As such, the tutorials aim to provide useful knowledge to the beginners in the community, as well as those with extensive experience. The list of tutorials can be found at http://ieee2013.fzu.cz/.

Student Paper Competition: Students submitting abstracts for presentation are invited to participate in a student paper competition. To participate, the student must be the lead author and present the paper. A request to be considered for the student paper competition and for student travel support must be made at the time of abstract submission.

Technical Program

International Ultrasonics Symposium (IUS)

Group 1: Medical Ultrasonics
MBB Medical Beam-forming and Beam Steering
MBE Biological Effects & Dosimetry
MBF Blood Flow Measurement
MCA Contrast Agents
MEL Elastography
MIM Medical Imaging
MPA Medical Photoacoustics
MSD System & Device Design
MSP Medical Signal Processing
MTC Medical Tissue Characterization
MTH Therapeutics, Hyperthermia, and Surgery

Group 2: Sensors, NDE & Industrial Applications
NAF Acoustic Microfluidics
NAI Acoustic Imaging
NAM Acoustic Microscopy
NAS Acoustic Sensors
NDE General NDE Methods
NFM Flow Measurement
NMC Material & Defect Characterization
NSP Signal Processing
NPA Photoacoustics
NPC Process Control
NTD Transducers: NDE and Industrial
NUA Underwater Acoustics
NWP Wave Propagation

Group 3: Physical Acoustics
PAT Acoustic Tweezers and Particle Manipulation
PGP General Physical Acoustics
PMI Magnetic/Electromagnetic Interactions
PNA Nonlinear Acoustics
POI Opto-acoustics Interactions
PPN Phononic
PTF Thin Films
PUM Ultrasonic Motors & Actuators

Group 4: Microacoustics – SAW, FBAR, MEMS
ADA Device Applications
ADD Device Design
ADM Device Modeling
AMP Materials & Propagation
AMS Microacoustic Sensor Devices &Applications
AMR Microacoustic Resonators

Group 5: Transducers & Transducer Materials
TMC Materials Characterization & Fabrication
TMI Medical Imaging Transducers
TMO Modeling (Analytical & Numerical)
TMU Micromachined Ultrasonic Transducers
TFT Thick Film Piezo-Technology
TPF Applications of Piezoelectrics & Ferroelectrics
TTT Medical Therapeutic Transducers

Prague Castle (Guest Program)

International Symposium on the Applications of Ferroelectrics – Piezoresponse Force Microscopy Workshop (ISAF–PFM)

Group 1: Fundamentals of Ferroelectrics and Related Materials
Conduction Phenomena
Point Defects & Nanoionics (Electroresistive & Neuromorphic Systems, Tunneling; Ferroelectric & Magnetoresistive Barriers, Fundamental Aspects of Ionic Motion & Defects In Functional Oxides, Energy Storage Systems, Reliability & Lifetime)
Domain Engineering
Relaxor Ferroelectrics/Dielectrics
Ferroelectric Photovoltaics (Bulk & Barrier Photovoltaic Effect, Photostriction, Photopoling, Photoconductivity, etc.)
Theory & Modeling (Domain Structure, Phase Transitions, Critical Phenomena, Density Functional Theory, First-principals Calculations, Phenomenology)
Nanoscale Phenomena (Nanostructure & Size Effects on Piezo/Ferroelectric Properties)
Multiferroics & Magnetoelectric Effects
Development of New Materials: Experiments & Theory
Flexoelectricity

Group 2: Processing of Ferroelectrics Crystals, Ceramics, Thick & Thin Films
Bulk Materials (Single Crystals, Ceramics, Polymers, Liquid Crystals & Composites)
Thick & Thin Film Processing Technologies (Preparation, Characterization)
Patterning Methods (Forming, Net Shape Forming, Microfabrication)
Biomaterials: Biofilms, Self-organized Nanostructures & Ferroelectric-like tissues

Group 3: Characterization & Properties of Ferroelectrics
Physical & Structural Characterization Techniques (Scanning Probe Microscopy Methods Including Piezoresponse Force Microscopy, Optical Near Field Imaging, X-ray & Neutron Scattering, Electron Microscopies, Vibrational Spectroscopies & Others)
Electrical & Electromechanical Characterization (Broadband Dielectric Spectroscopy, Piezoelectric Characterization, Non-linear Methods, etc)

Group 4: Applications of Ferroelectrics, Piezoelectrics and Related Materials
Ferroelectrics & Antiferroelectrics for Energy (Electrocaloric Materials & Devices, Ferroelectric Photovoltaics, Thermoelectric Materials & Devices)
Dielectrics: Capacitors, Ultra High-K Materials, RF & THz Materials & Properties, Energy Storage Harvesting Devices MRI Concepts (Dielectrics for Focusing, etc.)
Materials for Low and High Power Ultrasound Sensors, Actuators, Novel Applications
Ferroelectric Memory Materials & Devices
Piezoelectricity: High-performance Piezoelectric Single Crystals, Lead-based Piezo-ceramics, Lead-free Piezoelectric Polymers, MEMS & Other Integrated Piezo Devices
Pyroelectric Materials & Devices
Optical Phenomena (Signal Processing, Storage Devices, Periodic Poling, Photonic Band-gaps)

International Frequency Control Symposium – European Frequency And Time Forum (IFCS–EFTF)

Group 1: Materials, Resonators, & Resonator Circuits
A. Fundamental Properties of Materials
B. Micro- and Macro-Fabrication Technology for Resonators and Filters
C. Theory, Design, and Performance of Resonators and Filters, including BAW, FBAR, MEMS, NEMS, SAW, and others
D. Reconfigurable Frequency Control Circuits, e.g., Arrays, Channelizes

Group 2: Oscillators, Synthesizers, Noise, & Circuit Techniques
A. Oscillators – BAW, MEMS, and SAW
B. Oscillators - Microwave to Optical
C. Heterogeneously Integrated Miniature Oscillators, e.g., Single-Chip
D. Synthesizers, Multi-Resonator Oscillators, and Other Circuitry
E. Noise Phenomena and Aging
F. Measurements and Specifications
G. Timing Error in Digital Systems and Applications

Group 3: Microwave Frequency Standards
A. Microwave Atomic Frequency Standards
B. Atomic Clocks for Space Applications
C. Miniature and Chip Scale Atomic Clocks and Other Instrumentation
D. Atomic interferometers
E. Fundamental Physics, Fundamental Constants, & Other Applications

Group 4: Sensors & Transducers
A. Resonant Chemical Sensors
B. Resonant Physical Sensors
C. Vibratory Gyroscopes & Magnetometers
D. BAW, SAW, FBAR, and MEMS Sensors
E. Transducers
F. Sensor Instrumentation

Group 5: Timekeeping, Time and Frequency Transfer, GNSS Applications
A. TAI and Time Scales, Time and Frequency Transfer, and Algorithms
B. Satellite Navigation (Galileo, GPS, …)
C. Telecommunications Network Synchronization, RF Fiber Frequency Distribution
D. All-optical fiber frequency transfer
E. Optical free-space frequency transfer
F. Frequency and Time Distribution and Calibration Services

Group 6: Optical Frequency Standards and Applications
A. Optical Ion and Neutral Atom Clocks
B. Optical Frequency Combs and Frequency Measurements
C. Ultrastable Laser Sources and Optical Frequency Distribution
D. Ultrastable Optical to Microwave Conversion
E. Fundamental Physics, Fundamental Constants, and Other Applications