

2014 IFCS Student Paper Competition Finalists

Materials, Resonators, & Resonator Circuits

“Low TCF Lithium Tantalate Contour Mode Resonators”

Renyuan Wang, *Cornell University*

“Second Harmonic Mode Polarization Inverted Resonator Consisting of Epitaxial PbTiO₃ Thin Film”

Katsuyoshi Katada, *Nagoya Institute of Technology*

“Phase Change Material Programmable Vias for Switching and Reconfiguration of Aluminum Nitride Piezoelectric MEMS Resonators”

Gwendolyn Hummel, *Northeastern University*

“L-Band Lamb Mode Resonators in Gallium Nitride MMIC Technology”

Laura Popa, *MIT*

Oscillators, Synthesizers, Noise, & Circuit Techniques

“50 GHz Optical Frequency Comb Generation Based on an Optoelectronic Oscillator”

Xiaopeng Xie, *Peking University*

“Chip-Scale Atomic Resonator-Based Stabilization System for Optoelectronic Oscillator”

Zheng Chen, *Peking University*

“Spintronic Nano-Oscillators: Towards Nanoscale and Tunable Frequency Devices”

Eva Grimaldi, *CNRS/Thales and Université Paris Sud 11*

“Phase Noise Reduction Using Self-Phase Locked Loop with Optimized Loop Parameters”

Li Zhang, *Drexel University*

Microwave Frequency Standards and Optical Frequency Standards and Applications

“Investigation on Light Shift in CPT-Ramsey Resonance for Compact Atomic Clocks”

Yuichiro Yano, *Tokyo Metropolitan University*

“Lasing of Cesium Active Optical Clock with 459 nm Laser Pumping”

Duo Pan, *Peking University*

“Long-Term Stable Balanced Optical-Microwave Phase Detector with Sub-Femtosecond Residual Timing Jitter Capability for Optical-to-RF Extraction”

Michael Peng, *MIT*

“Prospects for Frequency Stabilization Using Collective Effects of Strontium Atoms in an Optical Cavity”

Bjarke Takashi Røjle Christensen, *University of Copenhagen*

Sensors & Transducers

“A Fully Integrated Wafer-Scale Sub-mm³ FBAR-Based Wireless Mass Sensor”

Manohar Nagaraju, *University of Washington*

“Atomically-Thin MoS₂ Resonators for Pressure Sensing”

Jaesung Lee, *Case Western Reserve University*

“Ultra-Sensitive Magnetic Field Sensor Based on a Low-Noise Magnetolectric MEMS-CMOS Oscillator”

Yu Hui, *Northeastern University*

“In-situ Monitoring Electrochemical Processes in Batteries Using Vibrating Microcantilevers”

Mark Cheng, *Wayne State University*

Timekeeping, Time and Frequency Transfer, GNSS Applications

“Microwave Transfer Through Optical Frequency Comb Toward 10⁻¹⁹ Instability Using Fiber-Loop Optical-Microwave Phase Detectors”

Kwangyun Jung, *KAIST*

“Optimization of Modulation Techniques for Suppression of GEMRS in Frequency Transfer Systems”

James Cahill, *U.S. Army Research Laboratory*

“Optical Frequency Transfer via 1840 km Fiber Link with Superior Stability”

Stefan Droste, *Max Planck Institute of Quantum Optics*

“Laser-to-Laser Remote-Transfer & -Synchronization with Sub-Fs Precision Over 3.5 km Fiber Link”

Kemal Safak, *Deutsches Elektronen-Synchrotron*