

2014 International Conference on Optical MEMS and Nanophotonics Program

MONDAY, 18 AUGUST 2014

08:45 Welcome

MOp1: Sensing and Metrology

Session Chair: Andreas Seifert, IMTEK, University of Freiburg, Germany

09:00 **MOp1.1: PLENARY:**
ENLIGHTENING THE WORLD
Professor Sir David Payne CBE FRS FREng
University of Southampton, UK

09:45 **MOp1.2: MINIATURE FIBER FACET ATOMIC FORCE MICROSCOPE USING PHOTONIC CRYSTAL SENSORS**
Antonio Gellineau, Yu-Po Wong, Andrew Wang, Manish J. Butte, Olav Solgaard
Stanford University, USA

10:00 **MOp1.3: ESTIMATION OF DIAPHRAGM DEFORMATION INDUCED BY MOLECULAR ADSORPTION ON MEMS OPTICAL INTERFEROMETRIC BIOSENSOR**
Kazuhiro Takahashi, Ryo Ozawa, Makoto Ishida, Kazuaki Sawada
Toyohashi University of Technology, Japan

10:15 **MOp1.4: REDUCED BLACKBODY MICROHEATERS FOR MEASURING HIGH TEMPERATURE THERMOLUMINESCENT GLOW CURVE PEAKS**
Philip R. Armstrong, Merlin L. Mah, Lucas Taylor, Joseph J. Talghader
University of Minnesota, Minneapolis, USA

10:30 Coffee Break

MOp2: Photonic MEMS I

Session Chair: Chengkuo Lee, National University of Singapore

11:00 **MOp2.1: INVITED TALK:**
QUANTUM DOTS AND SINGLE MOLECULE DETECTION ENABLE HIGHLY SENSITIVE ANALYSIS OF GENETIC BIOMARKERS
Prof. Jeff Tza-Huei Wang
Johns Hopkins University, USA

11:30 **MOp2.2: TUNABLE OPTICAL RESONATORS BY MANIPULATING POLYSTYRENE MICROSPHERES THROUGH IMAGE-CONTROLLED DIELECTROPHORETIC FORCE**
Ya-Tzu Chen, Te-Chang Chen, Tse-Chen Liao, Ming-Chang M. Lee
Institute of Photonics Technologies, National Tsing Hua University, Taiwan

11:45 **MOp2.3: TUNABLE OPTICAL FILTERS BASED ON SILICON NITRIDE MEMBRANES WITH SUBWAVELENGTH GRATINGS**
Yue Wang, Daan Stellinga, Thomas F. Krauss
University of York, UK

- 12:00 **MOp2.4:** 2 μm CASCADED RAMAN SCATTERING EMISSION FROM As_2S_3 HIGH-Q MICROSPHERES
Francis Vanier¹, Yves-Alain Peter¹, Martin Rochette²
¹Polytechnique Montreal, Canada
²McGill University, Canada
- 12:15 **MOp2.5:** SURFACE-PLASMON-BASED FLEXIBLE COLOR FILTER USING AL NANOSTRUCTURE ARRAY ON PARYLENE-N THIN FILM
Hayato Kumagai¹, Hiroaki Honma¹, Kazuhiro Takahashi¹, Makoto Ishida^{1,2}, Kazuaki Sawada^{1,2}
¹Toyohashi University of Technology, Japan
²Electronics-Inspired Interdisciplinary Research Institute (EIIRIS), Japan
- 12:30 Lunch
- MOp3: Microlenses**
Session Chair: Harald Schenk, Fraunhofer IPMS, Germany
- 13:30 **MOp3.1:** INVITED TALK:
MICROPHOTONICS IN SATELLITE PAYLOADS AND PLATFORMS
Iain McKenzie
European Space Agency, Netherlands
- 14:00 **MOp3.2:** IMPRINTED DOE ON VARIFOCAL MEMBRANE LENS
Phuong-Ha Cu-Nguyen¹, Adrian Grewe², Stefan Sinzinger², Hans Zappe¹, Andreas Seifert¹
¹Department of Microsystems Engineering, IMTEK, University of Freiburg, Germany
²Optical Engineering, Technische Universität Ilmenau, Germany
- 14:15 **MOp3.3:** MINIATURE TUNABLE MULTI-ELEMENT ALVAREZ LENSES
Yongchao Zou, Wei Zhang, Feng Tian, Fook Siong Chau, Guangya Zhou
National University of Singapore, Singapore
- 14:30 **MOp3.4:** TUNABLE ANAMORPHOTIC IMAGING SYSTEM BASED ON FLUIDIC CYLINDRICAL LENSES
Daniel Pätz¹, Steffen Leopold², Martin Hoffmann², Stefan Sinzinger¹
¹Technische Universität Ilmenau, Group of Optical Engineering, Germany
²Technische Universität Ilmenau, Group of Micromechanical Systems, Germany
- 14:45 **MOp3.5:** LATERAL POSITIONING OF TUNABLE LIQUID MICROLENS WITH FOUR COPLANAR ELECTRODES
Seungwan Seo, Yangkyu Park, Jong-Hyun Lee
Gwangju Institute of Science and Technology (GIST), Korea
- 15:00 Coffee Break

MNa1: Nanophotonic Devices I

Session Chair: George Barbastathis, MIT, USA

- 15:30 **MNa1.1:** INVITED TALK:
SILICON NITRIDE CAVITY OPTOMECHANICAL TRANSDUCERS
Dr Kartik Srinivasan
NIST, USA
- 16:00 **MNa1.2:** OPTICAL SIGNAL TRANSMISSION THROUGH PLASMONIC WAVEGUIDE
UNDER APPLIED ELECTRICAL BIAS
M. Fukuhara^{1,2}, T. Aihara^{1,2}, M. Ota¹, H. Sakai¹, Y. Kimura¹, Y. Ishii¹, M. Fukuda¹
¹Toyohashi University of Technology, Japan
²JSPS Research Fellow, Japan
- 16:15 **MNa1.3:** SYNTHESIS, CHARACTERIZATION, AND BAND GAP TUNABILITY IN TERNARY
Zn_xCd_{1-x}S (0 ≤ x ≤ 1) ALLOYED NANOWIRES
Po-Jui Su, Pei-Hsuan Liu, Chih-Shan Tan, Lih-Juann Chen
National Tsing Hua University, Taiwan
- 16:30 **MNa1.4:** OPTICAL MANIPULATION OF GUIDED MODE RESONANCE IN AZO-
COPOLYMER WAVEGUIDE GRATINGS
Chia Chen Hsu, Jian Hung Lin, Jian Hao Huang, Hung-Chih Kan
National Chung Cheng University, Taiwan
- 16:45 **MNa1.5:** ENHANCED ELECTRO-OPTIC SWITCHING CHARACTERISTICS USING MEMS
BASED TERAHERTZ METAMATERIAL
Prakash Pitchappa, Chong Pei Ho, Yu-Sheng Lin, Chengkuo Lee
Department of Electrical & Computer Engineering, National University of Singapore,
Singapore
- 17:00 **MNa1.6:** METASURFACE FOR THREE-DIMENSIONAL OPTICAL HOLOGRAPHY
Xianzhong Chen^{1,2}, Lingling Huang^{1,3}, Holger Mühlenbernd⁴, Hao Zhang³, Shumei
Chen^{1,5},
Benfeng Bai³, Qiaofeng Tan³, Guofan Jin³, Kok-Wai Cheah⁵, Cheng-Wei Qiu⁶, Jensen
Li¹,
Thomas Zentgraf⁴, Shuang Zhang¹
¹University of Birmingham, UK
²Heriot-Watt University, Scotland
³Tsinghua University, China
⁴University of Paderborn, Germany
⁵Hong Kong Baptist University, Hong Kong
⁶National University of Singapore, Singapore
- 18:00 Civic Reception – Glasgow City Chambers