

2013 Energy Materials Nanotechnology (EMN Spring)

April 8 - 11, 2013

Walt Disney World Swan and Dolphin, Orlando FL, USA

Conference Onsite Registration

Swan and Dolphin hotel

14:00 - 18:00 PM

April 7

2013 EMN April 8

Room A

Monday
April 8

Opening

Monday April 8 Room A	Session 1: Energy	Chair: Takayuki Ichikawa
8:30 – 9:00 AM	A1: TEM study on Hydrogen Storage Materials with High Hydrogen Capacity	Shigehito Isobe Hokkaido University Japan
9:00 – 9:30 AM	A2: Unraveling Structure-Performance Relationships in Plastic Solar Cells Using Soft X-rays	John Tumbleston NC State University USA
9:30 – 10:00 AM	A3: Low temperature, solution processed n- and p-type metal oxide interfaces for organic solar cells	Tobias Stubhan I-MEET, Friedrich-Alexander-University of Erlangen Germany
SESSION BREAK		
Monday April 8 Room A	Session 2: Energy	Chair: John Tumbleston
10:30 -11:00 AM	A4: High Energetic Nanoceramics Materials and their applications	Raj Kishora Dash University of Hyderabad, Central Universit

		India
11:00 – 11:30 AM	A5:Entropy Control of Hydrogen Storage Materials	Takayuki Ichikawa Hiroshima University Japan
LUNCH BREAK		
Monday April 8	Session 3: Energy	Chair: Ludwig Bartels
14:00 – 14:30 PM	A6: Metal Fluorides for Advanced Energy Storage	Anji Reddy Munnangi Karlsruhe Institute of Technology (KIT) Germany
14:30 – 15:00 PM	A7: Micro-solid oxide fuel cells running on reformed n-butane	Barbara Scherrer The University of Sydney, Australia & ETH Zurich, Switzerland
15:00 – 15:30 PM	A8: Band-gap Engineering of Semiconductor Metal Oxides for Solar Energy Conversion	Lianzhou Wang The University of Queensland Australia
SESSION BREAK		
Monday April 8 Room A	Session 4 MoS₂	Chair: Barbara Scherrer
16:00 – 16:30 PM	A9: High temperature synthesis of inorganic (WS ₂ /MoS ₂) fullerene-like nanoparticles and nanotubes, and their applications	Alla Zak Holon Institute of Technology – HIT Israel
16:30 – 17:00 PM	A10: Low-temperature photoluminescence and Raman spectroscopy of single- and few-layer MoS ₂	Tobias Korn Universität Regensburg Germany
17:00 - 17:30 PM	A11: Growth, Characterization and Modification of MoS ₂ islands and films on copper and SiO ₂ /Si	Ludwig Bartels University of California Riverside USA
17:30 – 18:00 PM	A12: MoS ₂ /WS ₂ nanoparticles for improvement the friction and wear properties of materials	Lev Rapoport HIT – Holon Institute of Technology Israel
DINNER SHOW		
2013 EMN April 9		

Tuesday April 9 Room A	Session 5	Chair: Ingrid Anderson
8:30 – 9:00 AM	A13: Electrical transport and thermoelectric devices in topological insulators.	Helin Cao Purdue University USA
9:00 – 9:30 AM	A14:Upcoming	María C. Asensio Synchrotron SOLEIL France
9:30 – 10:00 AM	A15:Enhanced Photoresponse in Quasi-1D Graphene Nanostructures	Yaqiong Xu Vanderbilt University USA
SESSION BREAK		
Tuesday April 9 Room A	Session 6: Quantum Dot and Nanoparticles	Chair: Helin Cao
10:30 – 11:00 AM	A16:Ultrafast Few-Fermion Physics of Single Self-Assembled Quantum Dots and Quantum Dot Molecules	Markus Betz Technische Universität Dortmund Germany
11:00 – 11:30 AM	A17:Optical Two-dimensional Coherent Spectroscopy of Semiconductor Quantum Dots	Steven Cundiff University of Colorado USA
11:30 – 12:00 AM	A18:Surface Quality and Oxidation Pathways of Si Quantum Dots	Ingrid Anderson Colorado School of Mines USA
12:00 – 12:30 AM	A19:Properties of a few semiconductor and metallic nanoparticles	Xiaoqin (Elaine) Li University of Texas at Austin USA
LUNCH BREAK		
Tuesday April 9 Room A	Session 7	Chair: Wan Sik Hwang
14:00 – 14:30 PM	A20: Controlling Exciton-Plasmon Coupling in Two-Dimensional Heterostructures	Richard Haglund Vanderbilt University USA
14:30 – 15:00 PM	A21: Giant Spin Pumping in Pt/Y ₃ Fe ₅ O ₁₂ Epitaxial Thin Films	Fengyuan Yang The Ohio State University USA
15:00 – 15:30 PM	A22:Communicating the LHC and the Higgs Boson	Steven Goldfarb University of Michigan Ann Arbor, USA

SESSION BREAK		
Tuesday April 9 Room A	Session 8	Chair: Richard Haglund
16:00 – 16:30 PM	A23: Dynamics of spin-torque oscillators	Olle Heinonen Argonne National Laboratory USA
16:30 – 17:00 PM	A24: Nanostructured Thermoelectric Materials and Their Potential Applications	Zhifeng Ren University of Houston USA
17:00 – 17:30 PM	A25: Thermoelectric and sensing applications of graphene	Serhii Shafraniuk Northwestern University USA
17:30 – 18:00 PM	A26: Field-effect transistors based on two dimensional crystal materials	Wan Sik Hwang University of Notre Dame USA
BANQUET		
2013 EMN April 10		
Wednesday April 10 Room A	Session 9: Growth	Chair: Sang-Im Yoo
8:30 – 9:00 AM	A27: MOVPE droplets heteroepitaxial growth model	Sergey Shusterman Soreq NRC Israel
9:00 – 9:30 AM	A28: Droplet elimination by thermal annealing technique for MBE growth of fine GaN based SLs	Wataru Terashima Terahertz Quantum Device Laboratory, RIKEN Japan
9:30 – 10:00 AM	A29: Green chemistry for metal nanocrystal fabrication	Noah Malmstadt University of Southern California USA
SESSION BREAK		
Wednesday April 10 Room A	Session 10: Material	Chair: Wataru Terashima
10:30 – 11:00 AM	A30: Organic and Inorganic Relaxor Materials for Dielectric Refrigeration	Zdravko Kutnjak Jozef Stefan Institute Slovenia

11:00 – 11:30 AM	A31:Electronic structure of (modified) transition-metal dichalcogenides	Udo Schwingenschloegl KAUST Kingdom of Saudi Arabia
11:30 – 12:00 AM	A32:A new high rate process for HTS coated conductor	Sang-Im Yoo Seoul National University Korea
LUNCH BREAK		
Wednesday April 10 Room A	Session 11 Materials	Chair: Kentaro KINOSHITA
14:00 – 14:30 PM	A33: Experimental observation of an acoustic analogy of the darkest man-made material	Johan Christensen DTU Fotonik Denmark
14:30 – 15:00 PM	A34:Photoemission investigation inside the organic semiconductors: two-dimensional valence band structures, buried interfaces, and low-density of gap states	Yasuo Nakayama Chiba University Japan
15:00 – 15:30 PM	A35:Manipulation of electronic and chemical properties of single layer MoS ₂ : insights from predictive modeling	Talat Shahnaz Rahman University of Central Florida USA
SESSION BREAK		
Wednesday April 10 Room A	Session 12 Materials	Chair: Johan Christensen
16:00 – 16:30 PM	A36: Nondestructive Infrared Nano-Imaging below the surface using s-SNOM and superlenses	Thomas Taubner RWTH Aachen Germany
16:30 – 17:00 PM	A37: Polar nanoregions in relaxor ferroelectric PLZT 8/65/35– (De-)Stabilization by thermal treatment & influence on macroscopic properties	Torsten Granzow Centre de Recherche Public Gabriel Lippmann Luxembourg
17:00 – 17:30 PM	A38: Mechanism elucidation of resistive switching effect in resistive random access memory (ReRAM) by using various kind of cell structures	Kentaro KINOSHITA Tottori University Japan
17:30 – 18:00 PM	A39: Interlayer Commensurability and Sliding in Layered Materials: the Power of the Registry Index	Oded Hod Tel Aviv University Israel
DINNER SHOW		
2013 EMN April 11		
Thursday April 11 Room A	Session 13	Chair: Christian Ast

8:30 – 9:00 AM	A40:Upcoming	Daxiang Cui Shanghai Jiaotong University China
9:00 – 9:30 AM	A41: Ultrasensitive Surface Enhanced Raman Scattering (SERS) Nanomotor Sensors for Location Predictable Biochemical Detection, Single-Cell Bioanalysis, and Controllable Biocue Release and Real-time Detection	Donglei (Emma) Fan University of Texas at Austin USA
9:30 – 10:00 AM	A42: Subwavelength light confinement and propagation: a numerical study of two-layer silver film with perforated holes	Jennifer M Reed University of Central Florida USA
SESSION BREAK		
Thursday April 11 Room A	Session 14: Topological Insulators	Chair: Donglei (Emma) Fan
10:30 – 11:00 AM	A43: Spin-orbit coupling at surfaces: from Rashba-type spin-splitting to topological insulators	Christian Ast Max-Planck-Institute for Solid State Research Germany
11:00 – 11:30 AM	A44: High Efficiency Thermoelectric Materials	Xun Shi Shanghai Institute of Ceramics,CAS, China
11:30 – 12:00 AM	A45:Upcoming	P. Goldberg Oppenheimer University of Cambridge UK
12:00 – 12:30 PM	A46:Upcoming	Jingbo Li Institute of Semiconductors CAS China
Close		

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Monday April 8	Opening	
Monday April 8 Room B	Session 1: Material	Chair: Chen Yang
8:30 – 9:00 AM	B1: Conductance and Relaxations in Magnetic Single-Atom Contacts Explored with a Scanning Tunneling Microscope	Joerg Kroeger Ilmenau University of Technology Germany
9:00 – 9:30 AM	B2: Oxide thin films containing metal nanoparticles : monitoring the physical properties	Jean-Christophe Orlianges SPCTS, UMR 7315 CNRS - Limoges University France
9:30 – 10:00 AM	B3: Triple-point-type Morphotropic Phase Boundary and Exploration of Piezoelectrics	Chao ZHOU Xi'an Jiaotong University China
	SESSION BREAK	
Monday April 8 Room B	Session 2: Material	Chair: Joerg Kroeger
10:30 – 11:00 AM	B4: Strain-control of local magnetism in manganite films on barium titanate substrates	Xavier Moya University of Cambridge UK

11:00- 11:30 AM	B5: Understanding On-Off Current Ratio and the Impact of Schottky Barriers Towards Design of III-V Nanowire Field Effect Transistors	Chen Yang Purdue University USA
LUNCH BREAK		
Monday April 8 Room B	Session 3: Materials Application	Chair: Tobias Stubhan
14:00 – 14:30 PM	B6:Metamaterial Concepts for Light Waves and for Spin Waves	Stefan Mendach University of Hamburg Germany
14:30 – 15:00 PM	B7: Thin Ni-Mn-Ga Films for Microsystem Applications: From Epitaxial Growth to Training of Freestanding Films	Anja Backen IFW Dresden Germany
15:00 – 15:30 PM	B8:Phosphor converted LEDs shine brighter with plasmonics	Gabriel Lozano Center for Nanophotonics FOM Institute for Atomic and Molecular Physics (AMOLF) Netherlands
SESSION BREAK		
Monday April 8 Room B	Session 4: Materials Application	Chair: Anja Backen
15:30 – 16:00 PM	B9:Non-Invasive Medical Diagnostics by Nanoparticle-based Solid-State Gas Sensors	Antonio Tricoli Australian National University Australia
16:30 – 17:00 PM	B10:Smart Microparticles and Liquid Microarray for Ultrplex Bioassays	Sunghoon Kwon Seoul National University Korea
17:00 – 17:30 PM	B11:Solution processing of graphene and 2d crystals for optoelectronic application	Francesco Bonaccorso University of Cambridge,UK,&CNR-IPCF Italy
17:30 -18:00 PM	B12:Transient THz oscillations and soft parametric resonance of hot carriers in graphene	Jean-Pierre Leburton University of Illinois USA
DINNER SHOW		
2013 EMN April 9		
Tuesday April 9 Room B	Session 5 Materials Theory	Chair: Etienne Janod

8:30 – 9:00 AM	B13: Theoretical modeling for resistive switching of nanoscale metal oxides	Takehide Miyazaki Nanosystem Research Institute AIST Japan
9:00 – 9:30 AM	B14: Adsorption of selenium and induced reconstructions on the Mo(110) surface: predictions from first principles simulations	Guido Roma CEA, DEN, France & University of Mainz, Germany
9:30 – 10:00 AM	B15: Probing Structures and Porosity in Nanostructured Electrode Materials	Li Wang Brown University USA
SESSION BREAK		
Tuesday April 9 Room B	Session 6: Materials Application	Chair: Stefan Mendach
10:30 – 11:00 AM	B16: Resistive switching in chalcogenide Mott Insulators : towards Mott memories	Etienne Janod Université de Nantes, CNRS France
11:00 – 11:30 AM	B17: VO ₂ smart glass	Yanfeng Gao Shanghai University China
LUNCH BREAK		
Tuesday April 9 Room B	Session 7: Nanostructures	Chair: Wolfgang Heiss
14:00 – 14:30 PM	B18: Growth of Nanostructures on Nanowires	Yong-Wei Zhang Institute of High Performance Computing A*Star Singapore
14:30 – 15:00 PM	B19: Energetic ion-assisted nanocomposite film growth: sculpting matter in 3D at the nanoscale	Gintautas Abrasonis Helmholtz-zentrum Dresden-Rossendorf Dresden Germany
15:00 – 15:30 PM	B20: Ion beam synthesized nanocrystals for silicon photonics	Hubert Krenner Universität Augsburg Germany
SESSION BREAK		
Tuesday April 9 Room B	Session 8: Nanostructure	Chair: Gintautas Abrasonis

16:00 – 16:30 PM	B21:Plasma Enabled Fabrication of Silicon Carbide Nanostructures	Jinghua Fang CSIRO Material Science and Engineering Australia
16:30 – 17:00 PM	B22:Surface Nanopatterning by Irradiation with Heavy, Polyatomic Ions	Karl-Heinz Heinig Helmholtz-zentrum Dresden-Rossendorf Dresden Germany
17:00 – 17:30 PM	B23:Colloidal metal-oxide nanocrystals for electronic applications	Wolfgang Heiss Johannes Kepler UniVersity Austria
BANQUET		