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## Novel Magnetic Materials and Phenomena I

Saturday Morning, November 22<sup>nd</sup>

*Florida Bay 1*

Xavier Moya, *Chair*

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### MM-01

**8:25a-8:50a:** Spin-torque nano-oscillators for wireless communication

*Byoung-Chul Min, Korea Institute of Science and Technology, South Korea*

### MM-02

**8:50a-9:15a:** Theory and simulation of magnetic materials: Surface effects and spin transport

*Hung T. Diep, Université de Cergy-Pontoise, France*

### MM-03

**9:15a-9:40a:** Spin caloritronics in ordered alloy systems

*Koki Takanashi, Tohoku University, Japan*

### MM-04

**9:40a-10:05a:** Tunneling magneto-Seebeck effect

*Andy Thomas, Bielefeld University, Germany*

### Coffee Break

### MM-05

**10:20a-10:45a:** Half-metallic Co<sub>2</sub>MnSi/diamond Schottky junctions for spintronics applications

*Kenji Ueda, Nagoya University, Japan*

### MM-06

**10:45a-11:10a:** Kondo physics in nanoscopic metallic non-local spin transport devices

*Chris Leighton, University of Minnesota, USA*

### MM-07

**11:10a-11:35a:** Magneto-transport phenomena in amorphous ferrimagnets

*Jiwei Lu, University of Virginia, USA*

### MM-08

**11:35a-12:00p:** Novel magnetoresistance in semiconductors

*Xiaozhong Zhang, Tsinghua University, China*

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## EMN General Workshop on Energy I

Saturday Morning, November 22<sup>nd</sup>

*Florida Bay 2*

Khang Hoang, *Chair*

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### GE-01

**8:10a-8:25a:** Hierarchical nanoporous carbons for energy storage applications

*Michael Fröba, Institute of Inorganic and Applied Chemistry, University of Hamburg, Germany*

### GE-02

**8:25a-8:50a:** Novel flux coating technique of hierarchically-structured crystal layers for all-solid-state LIB

*Katsuya Teshima, Shinshu University, Japan*

### GE-03

**8:50a-9:15a:** Multiscale simulations for battery materials

*Ryoji Asahi, Toyota Central Research and Development Labs, Japan*

### GE-04

**9:15a-9:40a:** Nanostructure composite anode materials for Lithium ion batteries

*Meicheng Li, North China Electric Power University, China*

### GE-05

**9:40a-10:05a:** In-situ (S)TEM observations of energy storage materials and batteries

*Nigel D. Browning, Pacific Northwest National Laboratory, USA*

### Coffee Break

### GE-06

**10:20a-10:45a:** Thin films for Li and Li-ion all-solid-state batteries

*Brigitte Pecquenard, ICMCB- Groupe Energie Matériaux pour Batteries, France*

### GE-07

**10:45a-11:10a:** High energy density positive electrode materials for Lithium-ion batteries

SATURDAY | 15

*Laurence Croguennec, ICMCB-CNRS, France*

#### **GE-08**

**11:10a-11:35a:** On the insertion mechanism of  $A_x\text{FePO}_4$  ( $A=\text{Li, Na}$ ) through the combination of experiments and DFT calculations, the importance of the  $A_{2/3}\text{FePO}_4$  composition

*Florent Boucher, CNRS-IMN, France*

#### **GE-09**

**11:35a-12:00p:** PVD processes for energy applications

*Alain Billard, Université de Technologie de Belfort-Montbéliard, France*

#### **GE-10**

**12:00p-12:25p:** Oxide thin films for thermoelectricity

*Hanns-Ulrich Habermeyer, Max-Planck-Institut für Festkörperforschung*

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### **Functional Materials I**

Saturday Morning, November 22<sup>nd</sup>

*Florida Bay 3*

*Hariharan Srikanth, Co-Chair*

*Federico Rosei, Co-Chair*

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#### **FM-01**

**8:30a-8:45a:** In Situ TEM analysis of low-temperature creep of Si nanowires grown with Sn-catalysts

*Shengyi Qian, Nanjing University, China*

#### **FM-02**

**8:45a-9:00a:** Tuning the work function of polyaniline via camphorsulfonic acid; an XPS study

*Omar Abdulrazzaq, University of Arkansas at Little Rock, USA*

#### **FM-03**

**9:00a-9:15a:** A novel growth process for the deposition of  $\text{CH}_3\text{NH}_3\text{PbI}_{3-x}\text{Cl}_x$  perovskite films

*Chaminda Hettiarachchi, University of South Florida, USA*

#### **FM-04**

**9:15a-9:40a:** Studies of polymer-like behaviour in ultrathin nanowires

*Ludovico Cademartiri, Iowa State University, USA*

#### **FM-05**

**9:40a-10:05a:** Advanced laser ablation techniques for ferroelectric and multiferroic heterostructures of perovskite-oxides

*Devajyoti Mukherjee, University of South Florida, USA*

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### **Coffee Break**

#### **FM-06**

**10:20a-10:45a:** Recent progress in studies of magnetic microwires

*Arkady Pavlovich Zhukov, University of Basque Country, Spain*

#### **FM-07**

**10:45a-11:10a:** The nano revolution and its impact in materials for energy applications

*Victor Castaño, Centro de Física Aplicada y Tecnología Avanzada, Mexico*

#### **FM-08**

**11:10a-11:35a:** Tandem photovoltaics using transparent conducting photonic crystal contacts

*Nazir P. Kherani, University of Toronto, Canada*

#### **FM-09**

**11:35a-12:00p:** Piezoelectric MEMS energy harvesters

*Susan Trolier-McKinstry, The Pennsylvania State University, USA*

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### **Smart Sensor Materials and Technologies**

Saturday Morning, November 22<sup>nd</sup>

*Pensacola Bay*

*Arkady Zhukov, Co-Chair*

*Dennis K. Killinger, Co-Chair*

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#### **SS-01**

**8:25a-8:50a:** About processes and performance of integrated gas sensor components

*Siegfried Selberherr, Technische Universität Wien,  
Austria*

**SS-02**

**8:50a-9:15a:** Effect of magnetic field in organic semiconductor devices

*Tho Nguyen, University of Georgia, USA*

**SS-03**

**9:15a-9:40a:** Design and fabrication of magnetic tips for high resolution magnetic force microscopy

*Masaaki Futamoto Chuo University, Japan*

**SS-04**

**9:40a-10:05a:** Laser spectroscopic techniques for remote probing of trace species

*Dennis K. Killinger, University of South Florida,  
USA*

**Coffee Break**

**SS-05**

**10:20a-10:45a:** Sensing RF and microwave energy with fiber Bragg grating heating via soft ferromagnetic glass-coated microwires

*Philip Colosimo, University of Washington, USA*

**SS-06**

**10:45a-11:10a:** Rapidly quenched amorphous and nanocrystalline bilayer ribbons for energy and sensor applications

*Ivan Skorvanek, Institute of Experimental Physics,  
Slovakia*

**SS-07**

**11:10a-11:35a:** Triboluminescent materials: uses in smart sensors and technology

*Andy Hollerman, University of Louisiana at Lafayette, USA*

**SS-08**

**11:35a-11:50a:** Development of highly sensitive magneto-impedance sensor and its application to P300 brainwaves measurement

*Tsuyoshi Uchiyama, Nagoya University, Japan*

**SS-09**

**11:50a-12:05p:** Design and synthesis of hierarchical nanostructured materials for gas sensing applications

*Sunkara V. Manorama, CSIR-Indian Institute of Chemical Technology, India*

**SS-10**

**12:30p-12:45p:** Study of zinc sulphide (ZnS) nanocrystalline thin films prepared by varying complexing agent for biosensing application

*Sachin V. Mukhamale, Savitribai Phule Pune University, India*

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**Novel Magnetic Materials and Phenomena I**

Saturday Afternoon, November 22<sup>nd</sup>

*Florida Bay 1*

*Oscar Iglesias, Chair*

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**MM-09**

**2:00p-2:25p:** Engineering materials and devices for all optical magnetic recording

*Stephane Mangin, Université de Lorraine, France*

**MM-10**

**2:25p-2:50p:** Irreversibility of magnetic domain evolution of Co/Pt multilayers during magnetization reversal

*Dong-Hyun Kim, Chungbuk National University,  
South Korea*

**MM-11**

**2:50p-3:15p:** Imaging of magnetoelectric heterostructures by photoemission electron microscopy

*Xavier Moya, University of Cambridge, UK*

**MM-12**

**3:15p-3:40p:** Nanocrystalline glass-coated microwires – magnetization process and applications

*Rastislav Varga, Institute of Physics, Slovakia*

**Coffee Break**

**MM-13**

**3:50p-4:15p:** Spontaneous superlattice formation via magnetic field induced phase separation

*Naoki Wakiya, Shizuoka University, Japan*

**MM-14**

**4:15p-4:30p:** Giant magnetoresistance in double organic-spacer-layers spin valves (DOSVs)

*Shiheng Liang, University of Georgia, USA*

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**EMN General Workshop on  
Nanotechnology I**

Saturday Afternoon, November 22<sup>nd</sup>

*Florida Bay 2*

*Tho Nguyen, Chair*

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**GN-01**

**2:00p-2:25p:** Green synthesis and characterization of gold nanoparticles and their sensing for antioxidant activity based on rapid colorimetric measurement

*Ju Chou, Florida Gulf Coast University, USA*

**GN-02**

**2:25p-2:50p:** Nanoparticles and nanowires using polyol/alcohol-based synthesis techniques

*Balachandran Jeyadevan, The University of Shiga Prefecture, Japan*

**GN-03**

**2:50p-3:15p:** Facile fabrication of tungsten bronze nanoparticles for heat-ray shielding via solvothermal reaction

*Tsugio Sato, Institute of Multidisciplinary Research for Advanced Materials, Tohoku University, Japan*

**GN-04**

**3:15p-3:40p:** Detonation nanodiamond as attractive building block for nanotechnology

*Alexander Vul, Ioffe Physical-Technical Institute, Russia*

**Coffee Break**

**GN-05**

**3:50p-4:15p:** Probing structure and dynamics of nanoparticles for energy applications

*Thomas E. Ashton, University of Glasgow, UK*

**GN-06**

**4:15p-4:40p:** Plasma nanocoatings for preventing/inhibiting biofilms

*Qingsong Yu, University of Missouri, USA*

**GN-07**

**4:40p-4:55p:** Nanomaterials: A key tool for improvising waste water technologies

*Shivani Bhardwaj, Mishra. University of  
Johannesburg, South Africa*

**GN-08**

**4:55p-5:10p:** Enzymatic grafting: A novel approach to develop multifunctional materials of interest

*Hafiz M.N. Iqbal, University of Westminster, UK*

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**Metamaterials and Transformation  
Optics**

Saturday Afternoon, November 22<sup>nd</sup>

*Florida Bay 3*

*Binh Duong, Chair*

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**MT-01**

**2:00p-2:25p:** Metamaterials for terahertz photonics

*Marco Rahm, University of Kaiserslautern, Germany*

**MT-02**

**2:25p-2:50p:** Storage and manipulation of electromagnetic waves in metamaterials

*Toshihiro Nakanishi, Kyoto University, Japan*

**MT-03**

**2:50p-3:15p:** Bistability in nonlinear metamaterials

*Jiangfeng Zhou, University of South Florida, USA*

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**Advanced Nanomaterials and  
Nanotechnologies for Biomedical  
Applications I**

Saturday Afternoon, November 22<sup>nd</sup>

*Florida Bay 3*

*Jon Dobson, Co-Chair*

*Gil Lee, Co-Chair*

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**AB-01**

**3:50p-4:15p:** Potential of graphene as nanomaterial for biomedical applications

*Subhra Mohapatra, University of South Florida, USA*

**AB-02**

**4:15p-4:40p:** Multifunctional nanoparticles for lung cancer therapy

*Nguyen Kytai Truong, The University of Texas at Arlington, USA*

**AB-03**

**4:40p-5:05p:** Study of the interaction of superparamagnetic nanoparticles with cells: Targeting and mechanochemical response

*Gil Lee, Conway Institute of Biomolecular & Biomedical Research, Ireland*

**AB-04**

**5:05p-5:30p:** Graphene-based biosensors and graphene synthesis

*Kenzo Maehashi, Osaka University, Japan*

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**Keynote Session I**

Saturday Evening, November 22<sup>nd</sup>

*Tampa Bay 1-2*

Dennis K. Killinger, *Chair*

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**K-1**

**5:45p-6:20p:** The next big thing in the energy field: Photovoltaics-generated DC electricity

*Rajendra Singh  
Clemson University, USA*

**K-2**

**6:20p-6:55p:** Elemental strategy for new nano-materials

*Hiroshi Kitagawa  
Kyoto University, Japan*

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*Myunghyun Paik Suh, Hanyang University & Seoul  
National University, Republic of Korea*

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**Keynote Session II**

Sunday Morning, November 23<sup>rd</sup>  
*Tampa Bay 1-2*  
Manh-Huong Phan, *Chair*

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**K-3**

**8:00p-8:35p:** Prospects for single-layer  
ferromagnetic semiconductors  
*David Mandrus*  
*University of Tennessee, USA*

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**EMN General Workshop on Energy II**

Sunday Morning, November 23<sup>rd</sup>  
*Florida Bay 1*  
*Khang Hoang, Chair*

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**GE-11**

**8:45a-9:10a:** Strategies for the synthesis of new  
nanoscale materials used as electrode materials for Li  
or Na ion batteries  
*Valerie Pralong, CNRS, France*

**GE-12**

**9:10a-9:25a:** All-solid-state lithium-ion  
microbatteries using a silicon negative electrode for  
microelectronic systems  
*Frédéric Le Cras, Minatec Campus, France*

**GE-13**

**9:25a-9:40a:** GeO<sub>2</sub>/Multiplates graphene composite  
based cathode electrodes for magnesium-ion battery  
*Eslam Sheha, Benha University, Egypt*

**GE-14**

**9:40a-10:05a:** Triple-phase boundary and power  
density enhancement in thin solid oxide fuel cells by  
controlled etching of the nickel anode  
*Rabi Ebrahim, University of Houston, USA*

**GE-15**

**10:05a-10:30a:** Metal-organic frameworks for  
hydrogen storage applications

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**Coffee Break**

**GE-16**

**10:40a-11:05a:** Theory and modeling  
of advanced materials for energy storage and  
conversion applications

*Khang Hoang, North Dakota State University, USA*

**GE-17**

**11:05a-11:30a:** Efficient solar water-splitting using a  
nanocrystalline CoO photocatalyst  
*Jiming Bao, University of Houston, USA*

**GE-18**

**11:30a-11:55a:** Advanced photovoltaic approaches  
to increase efficiency and reduce cost  
*Gavin Conibeer, University of New South Wales,  
Australia*

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**EMN General Workshop on Materials I**

Sunday Morning, November 23<sup>rd</sup>  
*Florida Bay 2*  
*Serge Nakhmanson, Chair*

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**GM-01**

**8:45a-9:10a:** High pressure-induced polymorphic  
transformation of maleic hydrazide  
*Kai Wang, Jilin University, China*

**GM-02**

**9:10a-9:25a:** Effects of flexible spacing coating on  
macroscopic supramolecular assembly  
*Mengjiao Cheng, Beijing University of Chemical  
Technology, China*

**GM-03**

**9:25a-9:50a:** High pressure supramolecular  
chemistry: pressure induced assemblies and their  
functions  
*Bo Zou, Jilin University, China*

**GM-04**

**9:50a-10:15a:** Heavy metal fluoride glasses and fibers

*Mohammed Saad, Thorlabs, USA*

**GM-05**

**10:15a-10:30a:** Properties of zigzag silicene nanoribbons

*Nam B. Le, University of South Florida, USA*

**Coffee Break****GM-06**

**10:40a-11:05a:** A band alignment of tunnel-FET heterojunction by internal photoemission

*Nhan V. Nguyen, National Institute of Standards and Technology, USA*

**GM-07**

**11:05a-11:30a:** Silicon nanoparticles as potential light emitters: Synthesis, Separation by Color, and Applications

*Naoto Shirahata, National Institute for Materials Science, Japan*

**GM-08**

**11:30a-11:55a:** On the nature of organic semiconductors: Improving the mobility and stability of organic devices

*Nobuo Ueno, Chiba University, Japan*

**GM-09**

**11:55p-12:20p:** Nanomaterials for excitonic solar cells

*Alberto Vomiero, National Institute for Scientific Research, Canada*

**GN-09**

**8:45a-9:10a:** Controlled synthesis and property of Cu- and Bi-based functional semiconductor nanomaterials

*Guanjun Xiao, Jilin University, China*

**GN-10**

**9:10a-9:35a:** Ultrahigh density arrays of semiconducting nanotubes for high performance logic electronics

*Qing Cao IBM T.J. Watson Research Center, USA*

**GN-11**

**9:35a-10:00a:** Metal-semiconductor hybrid nanostructures with plasmon-enhanced photocatalytic activities

*Can Xue, Nanyang Technological University, Singapore*

**GN-12**

**10:00a-10:25a:** Lattice dynamics of bismuth nanoislands and nanoparticles studied by ultrafast electron diffraction

*Hani E. Elsayed-Ali, Old Dominion University, USA*

**Coffee Break****GN-13**

**10:40a-11:05a:** In situ synchrotron studies of reactivity at model complex oxide surfaces

*Dillon D. Fong, Argonne National Laboratory, USA*

**GN-14**

**11:05a-11:30a:** Functional thin films using nanotechnology: epitaxy anywhere

*Gertjan Koster, University of Twente, The Netherlands*

**GN-15**

**11:30a-11:55a:** Fatigue crack growth and retardation in nanostructured materials

*Ming Dao, Massachusetts Institute of Technology, USA*

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**EMN General Workshop on  
Nanotechnology II**

Sunday Morning, November 23<sup>rd</sup>

*Florida Bay 3*

*Ju Chou, Chair*

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## Novel Magnetic Materials and Phenomena II

Sunday Morning, November 23<sup>rd</sup>

*Pensacola Bay*

Xavier Moya, *Chair*

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### MM-15

**8:45a-9:10a:** Interactions in magnetic nanoparticles: phenomenology and atomistic modeling

*Òscar Iglesias, Universitat de Barcelona, Spain*

### MM-16

**9:10a-9:35a:** Neutron scattering studies of molecule based magnets

*Javier Campo, Universidad de Zaragoza C, Spain*

### MM-17

**9:35a-10:00a:** Magnetization dynamics and collective phenomena in magnetic nanostructures

*Javier Alonso Masa, Basque Center for Materials, Spain*

### MM-18

**10:00a-10:15a:** Ordered arrays of magnetic nanostructures in thin films: synthesis and modeling

*Paola Tiberto, INRIM, Italy*

### MM-19

**10:15a-10:30a:** Tunable ferromagnetism in diluted amorphous  $\text{Ge}_{1-x}\text{Mn}_x$

*Giampiero Amato, INRIM, Italy*

### Coffee Break

### MM-20

**10:40a-11:05a:** Caloric effects near tricritical points

*Karl G. Sandeman, CUNY, USA; Imperial College London, UK*

### MM-21

**11:05a-11:30a:** Revisiting magneto-volume anomalies and magneto-caloric effect in  $\text{R}_2\text{Fe}_{17}$  intermetallics

*Pedro Gorria, University of Oviedo, Spain*

### MM-22

**11:30a-11:55a:**  $\text{FeMnP}_{1-x}\text{Si}_x$  – Phase Diagram, structure and magnetocaloric potential

*Per Nordblad, Uppsala University, Sweden*

### MM-23

**11:55a-12:20p:** Ferromagnetic shape memory effect: underlying physics and practical importance

*Volodymyr A. Chernenko, Universidad del Pais Vasco UPV/EHU, Spain*

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## Advanced Photonics and Plasmonics for Nano-bio Application

Sunday Morning, November 23<sup>rd</sup>

*Tampa Bay 3*

Kaoru Tamada, *Co-Chair*

Koichi Okamoto, *Co-Chair*

Kotaro Kajikawa, *Co-Chair*

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### AP-01

**8:45a-9:10a:** Tuning of the surface plasmon resonance in the UV-IR range for biological applications

*Koichi Okamoto, Kyushu University, Japan*

### AP-02

**9:10a-9:35a:** Quantum dots and upconverting nanoparticles: using solid-phase platforms for multiplexed optical sensing by resonance energy transfer

*Ulrich Krull, University of Toronto, Mississauga, Canada*

### AP-03

**9:35a-10:00a:** Label-free multichannel biochip based on anomalous reflection of gold

*Kotaro Kajikawa, Tokyo Institute of Technology, Japan*

### AP-04

**10:00a-10:25a:** Control of exciton dynamics in a single colloidal quantum dot by localized surface plasmon

*Sadahiro Masuo, Kwansai Gakuin University, Japan*

### Coffee Break

### AP-05

**10:40a-11:05a:** Assay on a tip – plasmonic fiber tip probe for intracellular protein detection



*Qimin Quan, Harvard University, USA*

**AP-06**

**11:05a-11:30a:** Highly confined, enhanced surface fluorescence imaging with 2D silver nanoparticle sheets

*Kaoru Tamada, Kyushu University, Japan*

**AP-07**

**11:30a-11:55a:** Short-range ordered plasmonic nanoholes and nanopores for sensing

*Takumi Sannomiya, Tokyo Institute of Technology, Japan*

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**EMN General Workshop on Energy II**

Sunday Afternoon A, November 23<sup>rd</sup>

*Florida Bay 1*

*Dev Mukherjee, Chair*

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**GE-19**

**2:00p-2:25p:** Molecular design of novel D-pi-A type organic dyes for efficient dye-sensitized solar cells

*Vinich Promarak, Suranaree University of Technology, Thailand*

**GE-20**

**2:25p-2:40p:** Interfacial effect of charge carriers on stabilizing zinc oxide in poly(vinylidene fluoride) and study their enhanced dielectric properties for electro-mechanical applications

*Radhamanohar Aepuru, Defence Institute of Advanced Technology, India*

**GE-21**

**2:40p-2:55p:** Study of CZTS nanocrystalline thin films by using electrodeposition for solar cell application

*Vilas A. Tabhane, Savitribai Phule Pune University, India*

**GE-22**

**2:55p-3:10p:** Study of the effect of silicon substrate on the performance of organic-inorganic hybrid solar cells

*Viney Saini, University of Arkansas at Little Rock, USA*

**GE-23**

**3:10p-3:25p:** Hybrid nanomaterials and new designs for energy storage applications

*Leela Mohana Reddy Arava Wayne State University, USA*

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**EMN General Workshop on**

**Nanotechnology II**

Sunday Afternoon B, November 23<sup>rd</sup>

*Florida Bay 1*

*Tho Nguyen, Chair*

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**GN-16**

**3:50p-4:15p:** Size, shape, stability and plasmonic properties of metal nanoparticles

*Cecilia Noguez, Universidad Nacional Autonoma de Mexico, Mexico*

**GN-17**

**4:15p-4:40p:** Revisiting aluminum for Li-ion battery anodes: core-shell NiSi<sub>x</sub>-Al nanowire structures

*Didier Pribat, Sungkyunkwan University, Korea*

**GN-18**

**4:40p-4:55p:** Toward roll-to-roll production of nanomaterials using microwave

*Xinyu Zhang, Auburn University, USA*

**GN-19**

**4:55p-5:10p:** Composites and nanocomposites: An application towards wastewater treatment

*Ajay Kumar, Mishra University of Johannesburg, South Africa*

**GN-20**

**5:10p-5:25p:** Characterization of functionalized multiwalled - carbon nanotubes / Kevlar fiber hybrid reinforced epoxy composites using vacuum resin infusion process

*Mohamed Bassyouni, King Abdulaziz University, Saudi Arabia*

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## EMN General Workshop on Materials I

Sunday Afternoon, November 23<sup>rd</sup>

Florida Bay 2

Hafsa Khurshid, *Chair*

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### GM-10

**2:00p-2:25p:** From point defects to defect superstructures in complex oxides

*Peter Sushko, Pacific Northwest National Laboratory, USA*

### GM-11

**2:25p-2:50p:** Applications of density-functional and tight-binding theory in complex materials

*Dimitrios A. Papaconstantopoulos, George Mason University, USA*

### GM-12

**2:50p-3:15p:** Multiscale modeling of layered electroactive materials

*Serge M. Nakhmanson, University of Connecticut, USA*

### GM-13

**3:15p-3:40p:** All oxide piezo-MEMS devices: the role of clamping on piezo electric properties

*Guus Rijnders, University of Twente, The Netherlands*

### Coffee Break

### GM-14

**3:50p-4:15p:** Phase change of Ba-substituted sodium bismuth titanate ferroelectrics with Bi deficiency

*Hirotaaka Fujimori, Yamaguchi University, Japan*

### GM-15

**4:15p-4:40p:** Magneto-optical material and its application to silicon photonics

*Tetsuya Mizumoto, Tokyo Institute of Technology, Japan*

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## Nanomaterials for Photochemical Solar Cells

Sunday Afternoon, November 23<sup>rd</sup>

Florida Bay 3

Ngoc Diep Lai, *Chair*

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### SC-01

**2:00p-2:25p:** Radial tandem junction thin film solar cells design for optimal light harvesting and balanced photo-current generation

*Linwei Yu, Ecole Polytechnique, France*

### SC-02

**2:25p-2:50p:** Conducting polymer-dye composites for photoelectrochemical solar cells and energy storage

*Arash Takshi, University of South Florida, USA*

### SC-03

**2:50p-3:15p:** The Solar Thermal Electrochemical Process (STEP) for the high solar efficiency production of ammonia, fuels, iron, cement and the removal of carbon dioxide from the atmosphere

*Stuart Licht, George Washington University, USA*

### SC-04

**3:15p-3:40p:** Synthesis of nanostructured titanium dioxide for solar energy conversion

*Eray Aydil, University of Minnesota, USA*

### Coffee Break

### SC-05

**3:50p-4:15p:** Intra- to inter-molecular singlet fission in oligoenes

*Minh Tuan Trinh, Columbia University, USA*

### SC-06

**4:15p-4:30p:** On the solar hydrogen production of  $\alpha$ -Fe<sub>2</sub>O<sub>3</sub> nanorings

*Heberton Wender, Universidade Federal do Mato Grosso do Sul, Brasil*

### SC-07

**4:30p-4:45p:** Discernment of possible organic magnetic field effect mechanisms using polymer light-emitting electrochemical cells

*Rugang Geng, University of Georgia, USA*

**SC-08**

**4:45p-5:00p:** Thin flexible dye-sensitized solar cell with SWCNT cathode

*Vladimir Saik, International Scientific Centre for Thermophysics and Energetics, Russia*

**CG-07**

**4:40p-5:05p:** Band-to-band tunnel FETs in one and two-dimensional materials

*Joachim Knoch, RWTH Aachen University, Germany*

**CG-08**

**5:05p-5:30p:** In situ TEM analysis of catalyst-assisted growth of multiwall carbon nanotubes and nanofibers

*Jean-Luc Maurice, CNRS, France*

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**CNTs, Graphene and 2D Materials I**

Sunday Afternoon, November 23<sup>rd</sup>

*Tampa Bay 3*

*Didier Pribat, Chair*

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**CG-01**

**2:00p-2:25p:** One-step fabrication of functionalized graphene materials via submerged liquid plasma [SLP] in solvent under ambient conditions

*Masahiro Yoshimura, National Cheng Kung University, Taiwan*

**CG-02**

**2:25p-2:50p:** Interfaces between transferred, CVD-grown graphene and MoS<sub>2</sub> probed with STM and ARPES

*Matthias Batzill, University of South Florida, USA*

**CG-03**

**2:50p-3:15p:** Silicene, germanene and stanene: Novel 2D honeycomb crystals from first principles  
*Friedhelm Bechstedt, Institut für Festkörpertheorie und -optic, Germany*

**CG-04**

**3:15p-3:40p:** Bandgap control in graphene-molybdenum disulfide bilayer structures

*Cristian V. Ciobanu, Colorado School of Mines, USA*

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**Coffee Break**

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**CG-05**

**3:50p-4:15p:** Chemistry and electronic structure at graphene edges

*Shintaro Fujii, Tokyo Institute of Technology, Japan*

**CG-06**

**4:15p-4:40p:** Tailoring the properties of two dimensional molybdenum disulfide

*Saiful I. Khondaker, University of Central Florida, USA*

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**Keynote Session III**

Sunday Evening, November 23<sup>rd</sup>

*Tampa Bay 1-2*

*Ioanna Giouroudi, Chair*

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**K-4**

Translating Nanomaterials and Technologies to Biomedical Applications: What's in the Horizon?

*Shyam Mohapatra*

*University of South Florida, USA*

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## Functional Materials II

Monday Morning, November 24<sup>th</sup>

*Florida Bay 1*

Hariharan Srikanth, *Co-Chair*

Federico Rosei, *Co-Chair*

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### FM-10

**8:00a-8:15a:** Surface wrinkling of shape memory polymers

*Jianliang Xiao, University of Colorado, USA*

### FM-11

**8:15a-8:30a:** Influence of crystal defects on the martensitic transformation in Ni-Mn-Ga alloy

*Anna Kosogor, National University of Science and Technology "MISiS", Russia*

### FM-12

**8:30a-8:55a:** Magnetic shape memory thin films and nano-disks: effects of size reduction on magnetism, structure and microstructure

*Franca Albertini, Institute of materials for electronics and magnetism, Italy*

### FM-13

**8:55a-9:20a:** Voltage-controlled exchange bias and exchange bias training

*Christian Binek, University of Nebraska, USA*

### FM-14

**9:20a-9:45a:** Organic spintronic devices

*Luis Hueso, CIC nanoGUNE, Spain*

### FM-15

**9:45a-10:10a:** Evolution of a Disordered Nanoparticle Network into Boolean Logic

*Wilfred van der Wiel, University of Twente, The Netherlands*

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## Coffee Break

### FM-16

**10:20a-10:45a:** Transition metal based magneto caloric materials

*Ekkes Brück, Delft University of Technology, The Netherlands*

### FM-17

**10:45a-11:10a:** Caloric effects in ferroic materials  
*Lluís Manosa, Universitat de Barcelona, Spain*

### FM-18

**11:10a-11:35a:** Emerging functional properties in Cobalt-based oxides

*Chandrima Mitra, Oak Ridge National Laboratory, USA*

### FM-19

**11:35a-12:00p:** Near-infrared emitting nanoparticles for applications in biology

*Fiorenzo Vetrone, National Institute for Scientific Research, Canada*

### FM-20

**12:00p-12:15p:** Internal friction and impact toughness of superelastic FeMnAlNi alloys

*Vladimir V. Khovaylo, National University of Science and Technology "MISiS", Russia*

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## Nanophotonics and Plasmonics I

Monday Morning, November 24<sup>th</sup>

*Florida Bay 2*

W. David Wei, *Chair*

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### NP-01

**8:25a-8:50a:** Nonlinear optical imaging of plasmonic nanostructures at the limits of temporal resolution and spatial precision

*Ken Knappenberger, Florida State University, USA*

### NP-02

**8:50a-9:15a:** Optically launched acoustic phonon modes reveal adhesion strength to substrate

supported gold nanodisks  
*Wei-Shun Chang, Rice University, USA*

### NP-03

**9:15a-9:40a:** Investigation of optical nonlinearities in graphene and layered semiconductors by multiphoton imaging

*Lasse Karvonen, Aalto University, Finland*

### NP-04

**9:40a-10:05a:** Optical response of a single deposited metal nano-object

*Fabrice Vallee, CNRS - Universite Lyon 1, France*

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**Coffee Break**

**NP-05**

**10:20a-10:45a:** Taming the blackbody: thermal radiation spectrum engineering with plasmonic semiconductor nanowires

*Michael A. Filler, Georgia Institute of Technology, USA*

**NP-06**

**10:45a-11:05a:** Glass nanowires for nonlinear optics and sensing: a top-down approach

*Rand Ismaeel, University of Southampton, UK*

**NP-07**

**11:05a-11:30a:** Light emission from group-IV nanostructures in silicon

*Brian Julsgaard, Aarhus University, Denmark*

**NP-08**

**11:30a-11:55a:** Bridging the particle size gap for nanoplasmonics and nanocatalysis

*Hui Wang, University of South Carolina, USA*

**NP-09**

**11:55a-12:20p:** Spatiotemporal near-field excitation dynamics in nanostructures

*Katsuyuki Nobusada, Institute for Molecular Science, Japan*

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**Nanocarbon Based Supercapacitors**

Monday Morning, November 24<sup>th</sup>

*Florida Bay 3*

*Peng Chen, Chair*

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**NS-01**

**8:25a-8:50a:** Facile preparation of hierarchical porous carbon/graphene for energy storage

*Yufeng Zhao, Yanshan University, China*

**NS-02**

**8:50a-9:15a:** Printed highly ordered carbon nanostructures for enhanced supercapacitor performance

*Binh Duong, Worcester Polytechnic Institute, USA*

**NS-03**

**9:15a-9:40a:** Electrochemically synthesized polymer-graphene oxide composite films as supercapacitor materials

*Pia Damlin, University of Turku, Finland*

**NS-04**

**9:40a-10:05a:** Application of graphene oxide ionic liquid gels for supercapacitor electrodes

*Hiroshi Hyodo, Tohoku University, Japan*

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**Coffee Break**

**NS-05**

**10:20a-10:45a:** Graphene materials based supercapacitors

*Peng Chen, Nanyang Technological University, Singapore*

**NS-06**

**11:35a-11:50a:** Hybrid composites of porous carbon and iron oxide for supercapacitors - morphological and electrochemical studies

*Thanyalak Chaisuwan, Chulalongkorn University, Thailand*

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**Advanced Nanomaterials and Nanotechnologies for Biomedical Applications II**

Monday Morning, November 24<sup>th</sup>

*Pensacola Bay*

*Jon Dobson, Co-Chair*

*Gil Lee, Co-Chair*

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**AB-05**

**10:20a-10:45a:** Fundamentals and applications of zinc oxide nanorods in enhanced optical bioassays

*Jong-in Hahm, Georgetown University, USA*

**AB-06**

**10:45a-11:10a:** Protein hydrogel photonic crystal sensors for chemical and biological analytes

*Sanford A. Asher, University of Pittsburgh, USA*

**AB-07**

**11:10a-11:35a:** Lipid nanotechnologies for drug screening and biosensor microarrays  
*Steven Lenhart, Florida State University, USA*

**AB-08**

**11:35a-11:50a:** CdS nanocrystals prepared by colloidal solution method for biosensing application  
*Archana A. Meshram, Dr. Ambedkar College, India*

**AB-09**

**11:50a-12:05p:** Erbium-doped  $Y_3Ga_5O_{12}$  nanogarnet as optical nanothermometer in bioassays  
*Victor Lavín, Universidad de La Laguna, Spain*

**AB-10**

**12:05p-12:20p:** Optical labels based on depolarized light scattering from plasmonic nanoparticles  
*George Chumanov, Clemson University, USA*

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## Resistive Switchings of Oxides and Related Nanocomposites/Heterostructures

Monday Morning, November 24<sup>th</sup>

*Tampa Bay 3*

Tamio Endo, *Co-Chair*

Jayan Thomas, *Co-Chair*

Hiroaki Nishikawa, *Co-Chair*

Seisuke Nakashima, *Co-Chair*

**RS-01**

**8:00a-8:40a:** p-n characteristics and switchings of LBMO/ZnO hetero-junctions  
*Tamio Endo, Mie University, Japan*

**RS-02**

**8:40a-9:05a:** Ag/a-Si/c-Si crossbar switch: From discovery to commercialization  
*Yajie Dong, University of Central Florida, USA*

**RS-03**

**9:05a-9:30a:** Electrical coupling of isolated cardiomyocyte clusters grown on aligned conductive nanofibrous meshes using electrospinning technique  
*Meng-Yi Bai, National Taiwan University of Science and Technology, Taiwan*

**RS-04**

**9:30a-9:55a:** Making oxide nanocrystals via green chemistry: A story of cuprous oxide  
*Chun-Hong, Kuo Academia Sinica, Taiwan*

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### Coffee Break

**RS-05**

**10:10a-10:50a:** Nonlinear optical absorption properties of LBMO/ZnO/LAO thin films  
*Reji Philip, Raman Research Institute, India*

**RS-06**

**10:50a-11:15a:** Improving memory performance of Cu/HfO<sub>2</sub>/Pt conducting-bridge RAM by solvent substitution  
*Kentaro Kinoshita, Tottori University, Japan*

**RS-07**

**11:15a-11:40a:** The effect of changing electrode materials for the same resistive random access memory filament  
*Sang-Gyu Koh, Tottori University, Japan*

**RS-08**

**11:40a-12:05p:** Advancing high resolution characterization for 2D materials  
*Laurene Tetard, University of Central Florida, USA*

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## Functional Materials II

Monday Afternoon, November 24<sup>th</sup>

*Florida Bay 1*

Hariharan Srikanth, *Co-Chair*

Federico Rosei, *Co-Chair*

**FM-21**

**2:00p-2:25p:** Perovskite materials for energy related applications  
*Riad Nechache, Institut Nationale de la Recherche Scientifique, Canada*

**FM-22**

**2:25p-2:50p:** An STM-guided search for 2D organic ferroelectrics and Co-crystals  
*Axel Enders, University of Nebraska, USA*

**FM-23**

**2:50p-3:15p:** The role of surfaces and interfaces in multifunctional materials  
*Federico Rosei, National Institute for Scientific Research, Canada*

**FM-24**

**3:15p-3:40p:** Using micro-origami techniques to create functional materials with complex architectures  
*Leszek Malkinski, University of New Orleans, USA*

**Coffee Break****FM-25**

**3:50p-4:15p:** Controlling electrons through a single atom one at a time  
*Giuseppe C. Tettamanzi, The University of New South Wales, Australia*

**FM-26**

**4:15p-4:40p:** From “smart” Material to “smart” Devices: Novel Applications based on the Insulator-to-Metal Transition in VO<sub>2</sub>  
*Ali Hendaoui, LMN/INRS-EMT, Canada*

**FM-27**

**4:40p-5:05p:** Nanostructured magnetoplasmonic metamaterials: a promising route for label-free molecular sensing applications  
*Paolo Vavassori, CIC nanoGUNE, Spain*

**FM-28**

**5:05p-5:20p:** Europium tetrakis dibenzoylmethide triethylammonium: A bright functional material for smart sensors  
*Ross Fontenot, University of Louisiana at Lafayette, USA*

**Nanophotonics and Plasmonics II**

Monday Afternoon, November 24<sup>th</sup>  
 Florida Bay 2  
 W. David Wei, Chair

**NP-10**

**2:00p-2:25p:** Enhanced light-matter interaction in graphene  
*Sanshui Xiao, Technical University of Denmark, Denmark*

**NP-11**

**2:25p-2:50p:** Extreme light absorption architectures for solar-to-fuel conversion  
*Isabell Thomann, Rice University, USA*

**NP-12**

**2:50p-3:15p:** Surface-enhanced solar energy harvesting and conversion using plasmon active nanostructures  
*Shanlin Pan, The University of Alabama, USA*

**NP-13**

**3:15p-3:40p:** Plasmonic nanostructures for sensing and energy applications  
*Kevin L. Shuford, Baylor University, USA*

**Coffee Break****NP-14**

**3:50p-4:15p:** Resonance energy transfer and hot electron transfer from plasmonic metal to semiconductor: applications in solar energy harvesting  
*Nianqiang Wu, West Virginia University, USA*

**NP-15**

**4:15p-4:40p:** Boosting the photocatalytic efficiency of semiconductors via design of charge-transfer hybrid structures  
*Yujie Xiong, University of Science and Technology of China, China*

**NP-16**

**4:40p-5:05p:** From nanojets to threading plasmonic nanoparticle strings with light  
*Ventsislav K. Valev, University of Cambridge, UK*

**NP-17**

**5:05p-5:30p:** Surface plasmon sensors with high sensitivity and resolution to study electric-field induced changes in the refractive index of liquid crystals and modifications in the Kretschmann configuration system for SPR measurements on not-easily-accessible samples

*Suresh C. Sharma, The University of Texas at  
Arlington, USA*

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## **EMN General Workshop on Materials II**

Monday Afternoon, November 24<sup>th</sup>

*Florida Bay 3*

*Javier Alonso, Chair*

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### **GM-16**

**2:00p-2:25p:** Nanocomposite materials for energy applications

*Jackie Ying, Institute of Bioengineering and  
Nanotechnology, Singapore*

### **GM-17**

**2:25p-2:50p:** Small scale energy harvesting by magnetic shape memory alloys

*Manfred Kohl, Karlsruhe Institute of Technology,  
Germany*

### **GM-18**

**2:50p-3:05p:** A study of the photovoltaic properties of AZO:N/p-Si with an inserted ZnO or AZO layer

*Zoulikha Mouffak, California State University,  
Fresno, USA*

### **GM-19**

**3:05p-3:30p:** Synthesis of clathrate single crystals by spark plasma sintering

*Yongkwon Dong, University of South Florida, USA*

### **Coffee Break**

### **GM-20**

**3:45p-4:10p:** Synthesis of ZnO, In<sub>2</sub>S<sub>3</sub>, P<sub>3</sub>HT, ZnS and In<sub>2</sub>O<sub>3</sub> nanomaterials

*Najoua Kamoun, Tunis University, Tunisia*

### **GM-21**

**4:10p-4:25p:** Synthesis and characterization of manganese oxide particles and investigation of their catalytic activities for oxidation of benzyl alcohol in liquid phase

*Muhammed Saeed, Government College University  
Faisalabad, Pakistan*

### **GM-22**

**4:25p-4:40p:** New physical mechanism of diamond growth in low pressure linear microwave plasma

*Štěpán Potocký, Institute of Physics of the  
ASCR, v.v.i. Czech Republic*

### **GM-23**

**4:40p-4:55p:** Synthesis of silica nanoparticles with controlled size for biological applications

*Huseyin Kizil Istanbul Technical University, Turkey*

### **GM-24**

**4:55p-5:10p:** Structural, electronic and optical properties of semiconductor nanostructures

*Ariadna Sanchez-Castillo, Universidad Autonoma del  
Estado de Hidalgo, Mexico*

### **GM-25**

**5:10p-5:35p:** Spin dynamics of skyrmionic magnetic bubbles and domain walls

*Robert Reeve, Johannes Gutenberg-University  
Mainz, Germany*

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## **Advanced Nanomaterials and Nanotechnologies for Biomedical Applications II**

Monday Afternoon, November 24<sup>th</sup>

*Pensacola Bay*

*Jon Dobson, Co-Chair*

*Gil Lee, Co-Chair*

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### **AB-11**

**2:00p-2:25p:** Nanomagnetic remote control of cell signaling and gene expression

*Jon Dobson, University of Florida, USA*

### **AB-12**

**2:25p-250p:** Magnetic nanoparticles and the influence of their magnetic properties for biomedical applications

*Cindi Dennis, The National Institute of Standards  
and Technology, USA*



**AB-13**

**2:50p-3:15p:** Microfluidic biosensors using magnetic nanoparticles

*Ioanna Giouroudi, Vienna University of Technology, Austria*

**AB-14**

**3:15p-3:40p:** Magnetically barcoded microcarriers detection with TMR and asymmetric giant magneto-impedance sensors

*Pratap Kollu, University of Cambridge, UK*

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**Coffee Break**

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**AB-15**

**3:50p-4:15p:** The next generation of multifunctional magnetic nanoparticles for biomedical engineering applications

*Hafsa Khurshid, University of South Florida, USA*

**AB-16**

**4:15p-4:40p:** New class of magnetic bioceramics for biomedical applications

*Aleksandr S. Kamzin, Ioffe Physical-Technical Institute of RAS, Russia*

**PC-03**

Facile synthesis of morphologically controlled nanoporous carbon using a soft-templating method for supercapacitors

*Pornpichaya Thawepornpuriphong, Chulalongkorn University, Thailand*

**PC-04**

Novel CO<sub>2</sub> storage by using hierarchical N-rich nanoporous carbon via facile templates synthesis as an adsorbent

*Nanthawut Chokaksornsan, Chulalongkorn University, Thailand*

**PC-05**

Theoretical study of hydrogen adsorption and diffusion in spillover process on microporous carbon

*Masanori Tachikawa, Yokohama-city University, Japan*

**PC-06**

Applications of Fe<sub>3</sub>O<sub>4</sub>@Ag nanoparticles above graphite

*Anh D. Phan, University of Illinois, USA*

**PC-07**

Electronic effects in nanoparticle silver catalysts

*Nigora Turaeva, Webster University, USA*

**PC-08**

Unexpected catalytic performance of Ni/SiO<sub>2</sub> nanoparticles prepared by magnetron sputtering deposition for reverse water gas shift reaction

*Renato V. Gonçalves, University of São Paulo, Brazil*

**PC-09**

Preparation of dewetting surface showing low contact angle hysteresis toward control of water droplet behavior

*Takahiro Ishizaki, Shibaura Institute of Technology, Japan*

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**Poster Session – Group I  
Carbon-based materials and technologies,  
Catalytic materials, Polymer composites**

Monday Evening, 6p – 7:30p, November 24<sup>th</sup>

*Tampa Bay 1-3*

*Dong-Hyun Kim, Chair*

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**PC-01**

Microstructure and surface properties of carbon nanostructured materials obtained by chlorination reaction of Zr(C<sub>5</sub>H<sub>5</sub>)<sub>2</sub>Cl<sub>2</sub>

*D.J. Araujo-Pérez, Universidad Veracruzana, México*

**PC-02**

Nanoporous carbon for applications in supercapacitors and batteries

*Areeya Ninlerd  
Chulalongkorn University, Thailand*

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**Poster Session – Group II  
Smart sensor materials, Soft magnetic  
materials, Optical properties**

Monday Evening, 6p – 7:30p, November 24<sup>th</sup>

*Tampa Bay 1-3*

*Khanh Kieu, Chair*

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**PS-01**

High frequency giant magnetoimpedance effect of amorphous microwires  
*Arkady Zhukov, University of Basque Country, Spain*

**PS-02**

Radiation hardness of candidate luminescent sensor materials  
*Stephen Williams, University of Louisiana at Lafayette, USA*

**PS-03**

Using luminescent materials to detect space radiation  
*Jacque Meche, University of Louisiana at Lafayette, USA*

**PS-04**

High frequency magneto-resistance effects of Co-rich soft ferromagnetic ribbons and microwires  
*Dao Son Lam, University of South Florida, USA*

**PS-05**

Excellent magnetocaloric properties of Gd-based amorphous microwires for active magnetic refrigeration in the liquid nitrogen temperature range  
*Hongxian Shen, Harbin Institute of Technology, China*

**PS-06**

A novel biosensor based on magneto-impedance technology and functionalized magnetic nanoparticles for sensitive detection of cancer cells and biomolecules  
*Jagannath Devkota, University of South Florida, USA*

**PS-07**

Tunable magnetocaloric response in high-speed melt-spun La-Ce-Fe-Si ribbons  
*XueLing Hou, Shanghai University, China*

**PS-08**

Design and fabrication of interdigital nanocapacitors coated with Hafnium for biological sensing  
*Gabriel Gonzalez Contreras, Universidad Autonoma de San Luis Potosi, Mexico*

**PS-09**

Modified solvothermal synthesis of cobalt ferrites (CoFe<sub>2</sub>O<sub>4</sub>) nanoparticles and their optical studies  
*Abdullah G. Al-Sehemi, King Khalid University, KSA*

**PS-10**

Structural, optical and electrical studies on Eu-doped ZnO thin films for optoelectronic devices  
*Olfa Kamoun, Université de Tunis El-Manar, Tunisia*

**PS-11**

First principles simulation of phonon confinement effects in Ge [111] nanowires  
*Alejandro Trejo Baños, Instituto Politécnico Nacional, México*

**PS-12**

Magnetic deposition of aligned silver nanowire transparent electrodes  
*Oleksandr Trotsenko, University of Georgia, USA*

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**Poster Session – Group III**  
**Energy-related materials and applications**  
**Biomedical materials and applications**

Monday Evening, 6p – 7:30p, November 24<sup>th</sup>  
*Tampa Bay I-3*  
*Cindi Dennis, Chair*

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**PE-01**

Development of graphene based materials for energy conversion  
*Nanda Gopal Sahoo, Kumaun University, India*

**PE-02**

Anisotropic thermoelectric generator made from semimetal microwire  
*L.A. Konopko, D.Ghitu Institute of Electronic Engineering and Nanotechnologies, Moldova*

**PE-03**

Electrochemical behaviour of a new transparent conductive oxide(TCO) layer-less cell structure  
*Ho-Gyeong Yun, Electronics and Telecommunications Research Institute, Republic of Korea*

**PE-04**

Fabrication and evaluation of Al paste with Bi<sub>2</sub>O<sub>3</sub>-B<sub>2</sub>O<sub>3</sub>-ZnO glass frit for screen-printed energy devices

*Bit-Na Kim, Electronics and Telecommunications  
Research Institute, Republic of Korea*

**PE-05**

Initial studies on silver sulfide sensitized metal oxide  
electrodes for solar cells  
*Pooja P. Magar, University of Pune, India*

**PE-06**

Development of bioprocess technology for jet fuel  
production from photosynthetic cells  
*Ganapathy Sivakumar, Arkansas State University,  
USA*

**PE-07**

Iron oxide nanoparticles with controlled morphology  
for advanced hyperthermia  
*Zohreh Nematı Porshokouh, University of South  
Florida, USA*

**PE-08**

Mechanical properties of nanocomposite polymers  
for tissue regeneration  
*Bailey Barnes, University of Arkansas at Little Rock,  
USA*

**PE-09**

Ceramic-metal bionanocomposites for improved  
performance of medical implants  
*José F. Bartolomé, Consejo Superior de  
Investigaciones Científicas, Spain*

**PE-10**

Stability and instability of lipid multilayer drug  
screening microarrays  
*Nicholas Vafai, Florida State University, USA*

**PE-11**

Impedance Analysis of Solvent Substitution Effect on  
Resistive Switching Property of HfO<sub>2</sub>-CB-RAM  
*Masato Yoshihara, Tottori University, Japan*

**PE-12**

Particle size and morphology dependent magnetic  
properties of o-EuMnO<sub>3</sub> and h-YbMnO<sub>3</sub>  
nanoparticles  
*Raja Das, University of South Florida, USA*

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## Nanoscale Optics and Photonics

Tuesday Morning, November 25<sup>th</sup>

*Florida Bay 1*

Zhimin Shi, *Chair*

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### NO-01

**8:30a-8:55a:** Ultrafast fiber lasers enabled by carbon nanotubes and their applications

*Khanh Kieu, University of Arizona, USA*

### NO-02

**8:55a-9:20a:** Controlled coupling of nanoparticles to polymer-based photonic structures

*Ngoc Diep Lai, Institut D'Alembert, France*

### NO-03

**9:20a-9:45a:** Manipulating light with all-dielectric metasurfaces

*Jason Valentine, Vanderbilt University, USA*

### NO-04

**9:45a-10:10a:** Quantum states of light in metamaterials require a new effective-medium theory

*Martijn Wubs, Technical University of Denmark, Denmark*

### NO-05

**10:10a-10:35a:** Structured light-matter interactions at the nanoscale

*Xiaobo Yin, University of Colorado at Boulder, USA*

### NO-06

**10:45a-11:10a:** Rainbow trapping effect: Broadband light trapping and splitting in hyperbolic metafilm patterns

*Qiaoqiang Gan, The State University of New York at Buffalo, USA*

### NO-07

**11:10a-11:35a:** Superradiant thermal emission and light absorption

*Zongfu Yu, University of Wisconsin Madison, USA*

### NO-08

**11:35a-12:00p:** Slow-light spectroscopic devices on chips

*Zhimin Shi, University of South Florida, USA*

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## CNTs, Graphene and 2D Materials II

Tuesday Morning A, November 25<sup>th</sup>

*Florida Bay 2*

Didier Pribat, *Chair*

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### CG-09

**8:55a-9:20a:** Atomically thin vertical heterojunction devices

*Jing Guo, University of Florida, USA*

### CG-10

**9:20a-9:45a:** Applications of photon-electron interactions for advanced optoelectronics in 2D materials

*Swastik Kar, Northeastern University, USA*

### CG-11

**9:45a-10:00a:** Effective thermal properties and interfacial thermal resistances of multiphase nanocomposites containing carbon nanotubes and inorganic nanoparticles

*Feng Gong, National University of Singapore, Singapore*

### CG-12

**10:00a-10:15a:** Graphene oxide: bacterial stimulant or antimicrobial agent

*Wen-Shuo Kuo, National Cheng Kung University, Taiwan*

### CG-13

**10:15a-10:30a:** Carbon nanospheres synthesis using palm oil and activated carbons

*Arenst Andreas Arie, Parahyangan Catholic University, Indonesia*

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## Advanced Nanomaterials and Nanotechnologies for Biomedical Applications III

Tuesday Morning B, November 25<sup>th</sup>

*Florida Bay 2*

Jon Dobson, *Co-Chair*

Gil Lee, *Co-Chair*

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