

**POSTER SESSION**

Pegasus Ballroom A-F

Poster Session Chair: Ying Zheng, NanoPhotonica, Inc., Gainesville, FL

Monday, March 4, 5:00-7:00 pm

Tuesday, March 5, 8:00-9:00 am

**P-01**

**MAGNETIC PROPERTIES OF Fe AND Fe-Pt NANOPARTICLES: APPLICATION OF THE DFT-INHOMOGENEOUS-DMFT APPROACH**, Alamgir Kabir<sup>a</sup>, Volodymyr Turkowski<sup>a,b</sup>, and Talat S. Rahman<sup>a,b</sup>, <sup>a</sup>Department of Physics, University of Central Florida, Orlando, FL 32816, <sup>b</sup>NanoScience and Technology Center, University of Central Florida, Orlando, FL 32816

**P-02**

**GAMMA IRRADIATION IMPACT ON ELECTRONIC CARRIER TRANSPORT IN AlGaIn/GaN HIGH ELECTRON MOBILITY TRANSISTORS**, Anupama Yadav, Casey Schwarz, Elena Flitsiyan and Leonid Chernyak, Department of Physics, University of Central Florida, Orlando, FL 32816, USA

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**STRESS ANALYSIS OF FREE-STANDING SILICON OXIDE FILMS USING OPTICAL INTERFERENCE**, Imen Rezadad<sup>1</sup>, J. Boroumand Azad<sup>1</sup>, E. Smith<sup>1</sup>, P. Figueiredo<sup>1</sup>, Robert E. Peale<sup>1</sup>, <sup>1</sup>Department of Physics, University of Central Florida, Orlando, FL, USA 32816

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**CORRELATION OF EMBRYONIC SKELETAL MUSCLE MYOTUBE PHYSICAL CHARACTERISTICS WITH CONTRACTILE FORCE GENERATION ON AN AFM-BASED BIOMEMS DEVICE**, K.L. Pirozzi, C.J. Long, C.W. McAleer, A.S.T. Smith and J.J. Hickman, NanoScience Technology Center, University of Central Florida, 12424 Research Parkway, Orlando, FL 32826, USA

**P-05**

**FIRST-PRINCIPLE INVESTIGATION OF THE STABILITY AND VIBRATIONAL SPECTRUM OF MOSX NANOSTRUCTURES GROWN ON Cu(111)**, Maral Aminpour, Duy Le, Marisol Alcántara Ortigoza, and Talat S. Rahman, University of Central Florida, Department of Physics, Orlando FL 32816-2385, USA

**P-06**

**TUNING PLASMON AND EXCITON EXCITATIONS IN TRANSITION-METAL DOPED ARRAYS OF NOBLE-METAL NANOCHAINS**, Neha Nayyar<sup>a</sup>, Volodymyr Turkowski<sup>a,b</sup>, Talat S. Rahman<sup>a,b</sup>, <sup>a</sup>Department of Physics, University of Central Florida, Orlando, FL-32826, <sup>b</sup>Nano Science Technology Center, University of Central Florida, Orlando, FL-32826

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**THE DESIGN & FABRICATION OF QUANTUM CASCADE LASERS**, P. Figueiredo, R.E. Peale, Physics Dept, University of Central Florida, Orlando, FL 32826

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**DIFFUSION OF SMALL Ni AND Cu CLUSTERS ON Ni (111): APPLICATION OF SLKMC-II\***, Syed Islamuddin Shah, Giridhar Nandipati, and Talat S. Rahman, Department of Physics, University of Central Florida, Orlando, FL 32816

**P-09**

**ELECTRONIC AND EXCITONIC PROPERTIES OF SINGLE-LAYER MoS<sub>2</sub> WITH A SULFUR-VACANCY ROW: FIRST-PRINCIPLES INVESTIGATIONS**, Takat Rawal<sup>1</sup>, Duy Le<sup>1</sup>, Alfredo Ramirez<sup>1</sup>, Volodymyr Turkowski<sup>1,2</sup>, and Talat S. Rahman<sup>1,2</sup>, <sup>1</sup>Department of Physics, University of Central Florida, Orlando, FL, 32816, <sup>2</sup>Nanoscience Technology Center, University of Central Florida, Orlando, FL 32816

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**REDUCTION OF INPUT POWER DURING SEQUENTIAL ELECTRICAL BREAKDOWN OF ALIGNED ARRAY OF CARBON NANOTUBES**, Udai Bhanu and Saiful I. Khondaker, Nanoscience Technology Center and Department of Physics, University of Central Florida, 12424 Research Parkway, Orlando, Florida 32826, USA

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**NOVEL APPROACHES TO IMPROVED TRANSPARENT CONDUCTING OXIDES**, A. B. Hicks and T. J. Anderson, Department of Chemical Engineering, University of Florida, Gainesville, FL 32611, USA

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**ADHESIVE PEG-BASED BINDER FOR AQUEOUS FABRICATION OF THICK LITHIUM-ION BATTERY ELECTRODES**, Binh Tran, UCF NanoScience Technology Center, 12424 Research Parkway Ste 400, Orlando, FL 32826

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**NANOIMPRINT PEDOT:PSS ORGANIC SOLAR CELL**, Chao Li<sup>1,2</sup>, Binh Duong<sup>1</sup> and Jayan Thomas<sup>1, 2, 3</sup>, <sup>1</sup>NanoScience Technology Center, University of Central Florida, Orlando, FL 32826, United States, <sup>2</sup>Department of Materials Science, University of Central Florida, Orlando, FL 32826, United States, <sup>3</sup>CREOL and College of Engineering, University of Central Florida, Orlando, FL 32826, United States

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**PHOTOVOLTAIC MODULE PERFORMANCE ANALYSIS USING VARIOUS CHARACTERIZATION TECHNIQUES**, Eric Schneller, Narendra Shiradkar and Neelkanth Dhere, Florida Solar Energy Center, 3679 Clearlake Rd, Cocoa, FL 32922

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**TANDEM SMALL MOLECULE ORGANIC SOLAR CELLS WITH BROAD SPECTRAL RESPONSE AND HIGH OPEN-CIRCUIT VOLTAGE**, John Mudrick, Weiran Cao, and Jiangeng Xue, Department of Materials Science and Engineering, University of Florida, Gainesville, FL 32611, USA

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**CONJUGATED POLYMER SUPRAMOLECULAR STRUCTURES ON GRAPHENE FOR ORDERED HETEROJUNCTION SOLAR CELLS**, Matthew McInnis, Jean Calderon, Nick Bouniconti, Dr. Lei Zhai, University of Central Florida Nanoscience and Technology Center, 12424 Research Parkway, STE 400, Orlando, FL 32826

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**CARBON NANOTUBE THIN FILM TRANSISTORS USING CARBON NANOTUBE ELECTRODES**, Narae Kang<sup>1,2†</sup>, Bidut K. Sarker<sup>1,2,†</sup>, and Saiful I. Khondaker<sup>1,2,3,†</sup>, <sup>1</sup>Nanoscience Technology Center, <sup>2</sup>Department of Physics, and <sup>3</sup>School of Electrical Engineering and Computer Science, <sup>†</sup>University of Central Florida, USA

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**STUDY OF FORMIC ACID ELECTROOXIDATION BY PLATINUM DEPOSITED FROM HALOPLATINATE COMPLEXES ON Au BY ELECTROCHEMISTRY AND SURFACE ENHANCED RAMAN SPECTROSCOPY**, Ranjani Muralidharan, and Xiao Li, Department of Chemistry, University of South Florida, 4202 E. Fowler Ave CHE205, Tampa, FL 33620

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**STUDY OF HYDROGEN DETECTION RESPONSE TIME WITH Pt-GATED AlGaIn/GaN BASED DIODES**, Yuyin Xi<sup>1</sup>, Lu Liu<sup>1</sup>, Ya-Hsi Hwang<sup>1</sup>, Oluwadamilola Phillips<sup>1</sup>, Stephen J. Pearton<sup>2</sup>, Jihyun Kim<sup>3</sup>, Chien-Hsing Hsu<sup>4</sup>, Chien-Fong Lo<sup>5</sup>, Jerry Wayne Johnson<sup>5</sup>, and Fan Ren<sup>1</sup>, <sup>1</sup>Department of Chemical Engineering, University of Florida, Gainesville, Florida 32611, <sup>2</sup>Department of Materials Science and Engineering, University of Florida, Gainesville, Florida 32611, <sup>3</sup>Department of Chemical and Biological Engineering, Korea University, Seoul 136-713, Korea, <sup>4</sup>Department of Chemical Engineering, Feng Chia University, Taichung 40724, Taiwan, <sup>5</sup>Kopin Corporation, Taunton, MA 02780

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**EFFECT OF TEMPERATURE ON CO DETECTION SENSITIVITY IN AIR AMBIENT BY USING ZnO NANOROD-GATED AlGaIn/GaN HIGH ELECTRON MOBILITY TRANSISTORS**, Chien-Fong Lo<sup>1</sup>, Yuyin Xi<sup>1</sup>, Lu Liu<sup>1</sup>, Fan Ren<sup>1</sup>, Stephen J. Pearton<sup>2</sup>, S. Doré<sup>3</sup>, Chien-Hsing Hsu<sup>4</sup>, A. Dabiran<sup>5</sup> and P. P. Chow<sup>5</sup>, <sup>1</sup>Department of Chemical Engineering, University of Florida, Gainesville, Florida 32611, <sup>2</sup>Department of Materials Science and Engineering, University of Florida, Gainesville, Florida 32611, <sup>3</sup>Departments of Anesthesiology, Neurology, Psychiatry and Neuroscience, University of Florida, Gainesville, Florida 32610, USA, <sup>4</sup>Department of Chemical Engineering, Feng Chia University, Taichung 40724, Taiwan, <sup>5</sup>SVT Associates, Eden Prairie, Minnesota 553446, USA

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**TRANSPARENT SUPERCAPACITORS FROM MnO<sub>2</sub>-BASED NANOPARTICLES**, Zenan Yu<sup>1,2</sup>, Binh Duong<sup>1</sup>, Jayan Thomas<sup>1,2,3</sup>, <sup>1</sup>NanoScience Technology Center, <sup>2</sup>Department of Materials Science, <sup>3</sup>CREOL and College of Engineering, University of Central Florida, Orlando, FL 32826, United States

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**EFFECTS of PROTON IRRADIATION ON RELIABILITY AND DC CHARACTERISTICS of AlGaIn/GaN HIGH ELECTRON MOBILITY TRANSISTORS**, C. Vélez<sup>1</sup>, L. Liu<sup>2</sup>, F. Ren<sup>2</sup>, S.J. Pearton<sup>3</sup>, Jihyun Kim<sup>4</sup>, R. C. Fitch<sup>5</sup>, D. E. Walker Jr.<sup>5</sup>, K. D. Chabak<sup>5</sup>, J. K. Gillespie<sup>5</sup>, M. Kossler<sup>5</sup>, M. Trejo, and A. Crespo<sup>5</sup>, <sup>1</sup>Department of Electrical and Computer Engineering, University of Florida, Gainesville, Florida 32611, USA, <sup>2</sup>Department of Chemical Engineering, University of Florida, Gainesville, Florida 32611, USA, <sup>3</sup>Department of Materials Science and Engineering, University of Florida, Gainesville, FL 32611, USA, <sup>4</sup>Department of Chemical and Biological Engineering, Korea University, Seoul 136-701, Korea, <sup>5</sup>Sensors Directorate, Air Force Research Laboratory, Wright-Patterson Air Force Base, OH 45433-7322, USA

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**A BIO-MEMS DEVICE FOR MEASURING CONTRACTILE FORCES AND ENDURANCE OF CULTURED MYOTUBES ON MICROFABRICATED CANTILEVERS**, Christopher W. McAleer<sup>1</sup>, Christopher J. Long<sup>1</sup>, Sarah A. Najjar<sup>1</sup>, Kristen L. Pirozzi<sup>1</sup>, James J. Hickman<sup>1</sup>, Nanoscience Technology Center, University of Central Florida, Orlando, FL 32826, USA

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**EXCITONIC PROPERTIES OF NONLUMINESCENT AND LUMINESCENT PTV DERIVATIVES BY ELECTROABSORPTION AND PHOTOLUMINESCENCE**, Evan Lafalce, Xiaomei Jiang, Cheng Zhang\*, Department of Physics, University of South Florida, 4202 E. Fowler Ave., Tampa, FL 33620, \*Department of Chemistry & Biochemistry, South Dakota State University, Brookings, SD 57007

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**PERFORMANCE ESTIMATIONS FOR A RADIANT ENERGY IMAGER USING NULL SWITCHING**, Evan Smith<sup>1</sup>, Javaneh Boroumand<sup>1</sup>, Imen Rezadad<sup>1</sup>, Pedro Figueiredo<sup>1</sup>, Janardan Nath<sup>1</sup>, Deep Panjwani<sup>1</sup>, R. E. Peale<sup>1</sup>, Oliver Edwards<sup>2</sup>, <sup>1</sup>University of Central Florida, 4000 Central Florida Blvd. PS430, Orlando, FL 32816 USA, <sup>2</sup>Zyberwear Inc. 2650 Florence Street, Orlando, FL 32818 USA

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**PROBING INTRA-CELLULAR DRUG RELEASE EVENT USING ACTIVATABLE (OFF/ON) CdS:Mn/ZnS QUANTUM DOTS (QDOT): SPECTROSCOPIC STUDIES TO INVESTIGATE INTERACTIONS OF QDOTS WITH QUENCHER**, Jeremy Tharkur<sup>1,2</sup> and Swadeshmukul Santra<sup>1,2,3,\*</sup>, <sup>1</sup>Burnett School of Biomedical Sciences, <sup>2</sup>NanoScience Technology Center, <sup>3</sup>Department of Chemistry, University of Central Florida, 12424 Research Parkway, Suite 400, Orlando, FL 32826

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**THE IMPROVEMENT OF THE RELIABILITY OF AlGaIn/GaN HIGH ELECTRON MOBILITY TRANSISTORS BY EMPLOYING DIFFERENT BUFFER STRUCTURES**, L. Liu<sup>1</sup>, C. F. Lo<sup>1</sup>, Y. Y. Xi<sup>1</sup>, F. Ren<sup>1</sup>, S. J. Pearton<sup>3</sup>, O. Laboutin<sup>3</sup>, Y. Cao<sup>3</sup>, J. W. Johnson<sup>3</sup> and I. I. Kravchenko<sup>4</sup>, <sup>1</sup>Department of Chemical Engineering, University of Florida, Gainesville, Florida 32611, <sup>2</sup>Department of Materials Science and Engineering, University of Florida, Gainesville, Florida 32611, <sup>4</sup>Kopin Corporation, Taunton, Massachusetts 02780, <sup>3</sup>Center for Nanophase Materials Sciences, Oak Ridge National Laboratory, Oak Ridge, Tennessee 37830

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**SYNTHESIS, CHARACTERIZATION AND CATALYTIC ACTIVITY OF Pt NANOPARTICLES SUPPORTED ON  $\gamma$ -Al<sub>2</sub>O<sub>3</sub>: OXIDATION STATE EFFECTS**, Mahdi Ahmadi, L. Merte, Beatriz Roldan Cuenya, Physics department, University of Central Florida, Orlando, FL 32816

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**SYNTHESIS AND STUDY OF CORE-SHELL ZINC SILICA NANOPARTICLES**, Megan Berroth<sup>1</sup>, and Swadeshmukul Santra<sup>1,2,3,\*</sup>, <sup>1</sup>Burnett School of Biomedical Sciences, <sup>2</sup>NanoScience Technology Center, <sup>3</sup>Department of Chemistry, University of Central Florida, 12424 Research Parkway, Suite 400, Orlando, FL 32826

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**SYNTHESIS AND STUDY OF COPPER LOADED SILICA NANOMATERIALS**, Mikaeel Young<sup>1</sup>, Pavithra Maniprasad<sup>1</sup> and Swadeshmukul Santra<sup>1,2,3,\*</sup>, <sup>1</sup>Burnett School of Biomedical Sciences, <sup>2</sup>NanoScience Technology Center, <sup>3</sup>Department of Chemistry, University of Central Florida, 12424 Research Parkway, Suite 400, Orlando, FL 32826

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**MORPHOLOGICAL, STRUCTURAL, AND OPTICAL CHARACTERIZATION OF HIGH QUALITY HOMOEPITAXIAL ZnO FILMS FOR ULTRAVIOLET APPLICATION**, Ming Wei, R. Casey Boutwell, Winston V. Schoenfeld, CREOL, The College of Optics and Photonics, University of Central Florida, 4000 Central Florida Blvd, Orlando, FL 32816, United States

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**DESIGN RULE FOR THE FABRICATION OF CARBON NANOTUBE SINGLE ELECTRON TRANSISTOR**, Muhammad Rakibul Islam, Daeha Joung, Saiful Khondaker, Department of Physics, NanoScience Technology Center, University of Central Florida, 12424 Research Parkway, Orlando, FL-32826

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**CORROSION BEHAVIOR OF 304SS WITH SOLAR SALT**, Omar Ahmed<sup>1,3</sup>, Nahid Mohajeri<sup>2,3</sup>, Yongho Sohn<sup>1,3</sup>, <sup>1</sup>Advanced Materials Processing and Analysis Center, <sup>2</sup>Florida Solar Energy Center, <sup>3</sup>Department of Materials Science and Engineering, University of Central Florida, Orlando, FL 32826, USA

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**ENHANCED NONLINEAR SCATTERING AND NONLINEAR ABSORPTION OF GRAPHENE OXIDE BY FLUORINATION**, Panit Chantharasupawong<sup>†</sup>, Reji Philip<sup>\*,‡</sup>, Narayanan T. Narayanan<sup>††</sup>, Parambath M. Sudeep<sup>‡</sup>, Akshay Mathkar<sup>††</sup>, Pulickel M. Ajayan<sup>††</sup>, and Jayan Thomas<sup>\*,§,†</sup>, <sup>†</sup>College of Optics and Photonics, CREOL, University of Central Florida, Orlando, FL 32816, USA, <sup>\*</sup>NanoScience Technology Center, University of Central Florida, Orlando, FL 32826, USA, <sup>††</sup>Department of Mechanical Engineering and Materials Science, Rice University, Houston, TX 77005, USA, <sup>‡</sup>Department of Physics, Cochin University of Science and Technology, Kochi 682 022, India, <sup>§</sup>Department of Material Science and Engineering, University of Central Florida, Orlando, FL 32816, USA

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**ONE STEP SURFACE MODIFICATION OF GOLD NANOPARTICLES FOR SURFACE-ENHANCED RAMAN SPECTROSCOPY**, Seongmin Hong, and Xiao Li\*, Department of Chemistry, University of South Florida, Tampa, FL 33620, USA

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**PREPARATION OF MAGNETITE  $\text{Fe}_3\text{O}_4/\text{Ag}$  NANOSTRUCTURES FOR SURFACE ENHANCED RAMAN SPECTROSCOPY**, Siqi Sun, and Xiao Li, Department of Chemistry, University of South Florida, 4202 E. Fowler Ave CHE 205, Tampa, FL

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**NANOPARTICLES IN ELECTROSPUN POLYELECTROLYTE FIBERS**, Astha Malhotra<sup>†,§</sup>, Jean E. Calderon<sup>†,§</sup>, Lei Zhai<sup>†,§,\*</sup>, <sup>†</sup>NanoScience Technology Center, <sup>§</sup>Department of Chemistry and University of Central Florida, 12424 Research Parkway, Suite 400, Orlando, FL 32826.

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**ADULT NEURONAL FUNCTION AND SYNAPTIC ACTIVITY IN A HIGH-THROUGHPUT MEA SYSTEM**, Bonnie Berry<sup>1</sup>, Mark Schnepfer<sup>1</sup>, James J. Hickman<sup>1</sup>, <sup>1</sup>NanoScience Technology Center, University of Central Florida, Orlando, FL, USA

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**PATTERNING OF OXIDE-HARDENED GOLDBLACK BY STANDARD PHOTOLITHOGRAPHY AND METAL LIFT-OFF**, Deep Panjwani<sup>a</sup>, Mehmet Yesiltas<sup>a</sup>, Doug Maukonen<sup>a</sup>, Imen Rezadad<sup>a</sup>, Evan Smith<sup>a</sup>, Janardan Nath<sup>a</sup>, R.E. Peale<sup>a</sup>, Julia Sedlemair<sup>b</sup>, Ralf Wehlitz<sup>b</sup>, Carol Hirschmugl<sup>b</sup>, <sup>a</sup>Department of Physics, University of Central Florida, Orlando FL 32816, <sup>b</sup>Synchrotron Radiation Center, University of Wisconsin-Madison, Stoughton WI

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**PLASMONIC MID-IR SPECTROMETER**, Farnood K. Rezaie<sup>1,\*</sup>, Chris J. Fredericksen<sup>2</sup>, Walter R. Buchwald<sup>3, 4</sup>, Justin W. Cleary<sup>5</sup>, Evan M. Smith<sup>1</sup>, Imen Rezadad<sup>1</sup>, Andrew Davis<sup>4</sup> and Robert E. Peale<sup>1</sup>, <sup>1</sup>Department of Physics, University of Central Florida, FL 32816, <sup>2</sup>LRC Engineering, Inc., 9345 Chandon Dr., Orlando, FL 32825, <sup>3</sup>Department of Physics and Engineering, University of Massachusetts Boston, MA 02125, <sup>4</sup>Solid State Scientific Corporation, 27-2 Wright Rd., Hollis, New Hampshire 03049, <sup>5</sup>Sensors Directorate, AFRL, Wright Patterson AFB, Dayton, OH 45433

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**THIN-FILM, WIDE-ANGLE, DESIGN-TUNABLE, SELECTIVE ABSORBER FROM NEAR UV TO FAR INFRARED**, <sup>1</sup>Janardan Nath, <sup>1</sup>Douglas Maukonen, <sup>1</sup>Evan Smith, <sup>1</sup>Pedro Figueiredo, <sup>1</sup>Guy Zummo, <sup>1</sup>Deep Panjwani, <sup>1</sup>Robert E. Peale, <sup>2</sup>Glenn Boreman, <sup>3</sup>Justin Cleary, <sup>4</sup>Isaiah Oladeji, <sup>1</sup>Department of Physics, University of Central Florida, Orlando FL 32816, <sup>2</sup>Department of Physics and Optical Science, University of North Carolina at Charlotte, Charlotte, NC 28223, <sup>3</sup>Air Force Research Lab, Sensors Directorate, Hanscom AFB MA 01731, <sup>4</sup>SISOM Thin films LLC, 1209 West Gore Street, Orlando, FL 32805

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**RELEASE OF MEMS DEVICES WITH HARD-BAKED POLYIMIDE SACRIFICIAL LAYER**, Javaneh Boroumand, Imen Rezadad, Janardan Nath, Evan Smith, Robert E. Peale, Department of Physics, University of Central Florida, Orlando, FL USA 32816

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**POLYMER DERIVED CERAMIC (PDC) OF POLYACRYLONITRILE/OLIGOSILAZANE COMPOSITE NANOFIBERS**, Jean E. Calderon<sup>1</sup> and Lei Zhai<sup>1</sup>, <sup>1</sup>NanoScience Technology Center, Department of Chemistry, University of Central Florida, Orlando, Florida 32826, United States

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**EFFECT OF La DOPING ON THE FERROELECTRIC PROPERTIES OF PZT THIN FILMS DEPOSITED USING DUAL LASER ABLATION**, M. Hordagoda<sup>1</sup>, D. Mukherjee<sup>1</sup>, R. Hyde<sup>1</sup>, D. Ghosh<sup>2</sup>, J.J.L Jones<sup>2</sup>, S. Witanachchi<sup>1</sup>, and P. Mukherjee<sup>1</sup>, <sup>1</sup>Department of Physics and Center for Integrated Functional Materials, University of South Florida, Tampa FL 33620, <sup>2</sup>Department of Material Science and Engineering, University of Florida, Gainesville, FL 32611, United States.

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**PATTERNING CELLS WITH ALKYL SILANE MONOLAYERS**, Maria Stancescu<sup>1</sup>, Kerry Wilson<sup>1</sup>, Mainak Das<sup>1</sup>, Neelima Bhargava<sup>1</sup>, and James J Hickman<sup>1</sup>, <sup>1</sup>NanoScience Technology Center, University of Central Florida, Orlando, FL, USA

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**STUDY OF CELL INTERNALIZATION OF POLYMER COATED NANOPARTICLES USING A LIPOSOME MODEL**, S. Barkam, S. Das, D. Reid, L. Atencio, P.Mendez, S. Seal, Advanced Materials Processing and Analysis Center, University of Central Florida 4000 Central Florida Blvd. Box 162455, Orlando, Florida, 32816

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**CHARACTERISTICS OF ALUMINUM OXIDE FILMS BY ATOMIC LAYER DEPOSITION FROM TRIMETHYLALUMINUM AND WATER**, Ya-Hsi Hwang<sup>1</sup>, L.Liu<sup>1</sup>, B.Gila<sup>2</sup>, R.Holzworth<sup>3</sup>, K.S. Jones<sup>3</sup>, and Fan Ren<sup>1</sup>, <sup>1</sup>Department of Chemical Engineering, University of Florida, Gainesville, FL 32611, <sup>2</sup>Nanoscale Research Facility, University of Florida, Gainesville, FL 32611, <sup>3</sup>Department of Materials Science and Engineering, University of Florida, Gainesville, FL, 32611

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**INVESTIGATION OF EDGE EFFECTS WITH RAMAN MICROPROBE**, Andrew Fiorillo, Brian Hosterman, Mariana Sendova, Division of Natural Sciences, New College of Florida, Sarasota, FL

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**COMPOSITE GRAPHENE AEROGELS FOR HYDROGEN SENSING AND CATALYSIS**, Joseph Zuyus, Matthew McInnis, Jean Calderon, and Lei Zhai, University of Central Florida, Nanoscience and Technology Center, 12424 Research Parkway STE 400, FL 32836

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**TOPICAL DELIVERY OF LIPOSOME ENCAPSULATED CERIA NANOPARTICLE TO REDUCE OXIDATIVE STRESS IN RETINAL CELLS**, Leonel Atencio, Swetha Barkam, Soumen Das, and Sudipta Seal, Advanced Materials Processing and Analysis Center, University of Central Florida, 4000 Central Florida Blvd., Orlando, FL 32816

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**GRAPHENE/MULTI-WALLED CARBON NANOTUBES/POLY (O-TOLUIDINE) TERNARY NANOCOMPOSITE FOR HIGH PERFORMANCE ELECTROCHEMICAL SUPERCAPACITOR ELECTRODES**, Melanie Martuch<sup>1</sup>, Punya A. Basnayaka<sup>1,2</sup>, Ajit Mujumdar<sup>1</sup>, Manoj K. Ram<sup>2,3</sup>, <sup>1</sup>Department of Mechanical Engineering, <sup>2</sup> Clean Energy Research Center, <sup>3</sup>Nanotechnology Research and Education Center, <sup>4</sup>Department of Electrical Engineering, University of South Florida, 4202 E Fowler Avenue, ENB 118, Tampa, FL 33620

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**HYDROGEN SENSING MEMS DEVICE BASED ON NANOSTRUCTURED TIN OXIDE ARRAY**, Rameech McCormack<sup>1,3</sup>, Nozomi Shirato<sup>5</sup>, Umesh Singh<sup>1</sup>, Soumen Das<sup>3,4</sup>, Amit Kumar<sup>2,3</sup>, Hyung J. Cho<sup>1</sup>, Ramki Kalyanaraman<sup>5,6,7</sup>, Sudipta Seal<sup>2,3,4\*</sup>, <sup>1</sup>Department of Mechanical & Aerospace Engineering, <sup>2</sup>Department Materials Engineering, <sup>3</sup>Advanced Materials Processing Analysis Center, <sup>4</sup>NanoScience Technology Center (NSTC), University of Central Florida, Orlando, FL-32816, USA, <sup>5</sup>Department of Materials Science & Engineering, <sup>6</sup>Department of Chemical & Biomolecular Engineering, <sup>7</sup>Sustainable Energy Education and Research Center (SEERC), University of Tennessee, Knoxville, TN 37996, USA

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**FABRICATION OF SILICA CORE SILVER SHELL NANOPARTICLE AS A SERS ACTIVE SUBSTRATE**, Sungyub Han, Janet Mara, and Xiao Li\*, Chemistry, Arts and Science, University of South Florida, Tampa, Florida 33602