CINT 2018A Accepted Projects

A MoS2-Graphene Electro-Absorption Modulator; Scott Minas, The University of New Mexico*: John Nogan.*

A New Route to Non-Diffusive Thermal Transport Realized through Persistent Micelle Templating; Sajad Yazdani, University of Connecticut: *Michael Pettes*.

A Novel Photonic Strategy to Probe Structure and Dynamics in Nanoscale Polymer Materials; Stacy Copp, Los Alamos National Laboratory: *Jim Werner.*

Active Terahertz Metasurfaces for Wave Front Control; Daniel Mittleman, Brown University: *Hou-Tong Chen*

An Ultrafast Single Photon Source Based on Giant Quantum Dots Coupled to Plasmonic Cavities; Maiken Mikkelsen, Duke University: *Jennifer Hollingsworth*

Atomic-Precision Delta Layer Devices; James Owen, Zyvex Labs, Inc: *Ezra Bussmann*

Atomic-Precision Single-Donor Atoms for a Si Quantum Computer; James Owen, Zyvex Labs, Inc: *Ezra Bussmann*

Atomic-Precision Tunnel Junctions for Si Quantum Computing; Richard Silver, National Institute of Standards and Technology (NIST): *Ezra Bussmann*

Beam Combining of Multi-Wavelength Terahertz Quantum Cascade Laser Arrays; Ji Chen, Lehigh University: *John Reno*

Characterization and Development of the UO2 Coherent Polaron Quantum Phase; Steven Conradson, NEqCST Corporation: *Dmitry Yarotski*

Characterization of Novel 2D Materials; David Johnson, University of Oregon: *Katie Jungjohann*

Characterization of UV Photodiodes Based on Ga2O3 and Its Alloys; Serdal Okur, Structured Materials Industries, Inc: *Igal Brener*

Confinement of Helium Precipitates Growth in Metallic Nanolayers; Yongqiang Wang, Los Alamos National Laboratory: *Khalid Hattar*

Convergent Study of SiGe Epitaxy for Si Quantum Computing; Chris Richardson, University of Maryland: *Ezra Bussmann*

Copy of Ion Binding and Transport in Nanoscopic Pathways; Susan Rempe, Sandia National Laboratories: *Mark Stevens*

Covalent Functionalization of Gold Nanorods Using the CINT Microfluidic Discovery Platform (MDP); Rich Vaia, Air Force Research Laboratory (AFRL): *Dale Huber*

Critical Dimensions on MoS2 Thin Films: Understanding crystal using Atom Probe Tomography; Manuel Ramos, Universidad Autónoma de Ciudad Juárez: *John Nogan*

Defect-interface Interactions in MgX2O4/MgO (X = Al, Ga, In) Multilayers; Juan Wen, Lanzhou University: *Aiping Chen*

Development of Sensitive THz Radiation Detectors for High-Temperature Operation; Sushil Kumar, Lehigh University: *John Reno*

Digital Electronics at the Atomic Limit; Shashank Misra, Sandia National Laboratories: *Mike Lilly*

Digitally Designed Porous Media to Control Capillary Imbibition and Release under Mechanical Deformation; Bryan Kaehr, Sandia National Laboratories: *Brad Boyce*

Dynamics of the Nanowire in a Random Potential Anderson Insulator Coupled to Various Bosonic Baths; Janez Bonca, University of Ljubljana: *Stuart Trugman*

Electric Field Based Cell Sorting and Antibody Purification; Spencer Farr, Vista Therapeutics, Inc: *John Nogan*

Electrodes Ageing Processes at the Nanoscale; Francesca Iacopi, University of Technology Sydney: *Katie Jungjohann*

Electro-Intercalation of 2D Twistronic Van der Waals Heterostructures; Kwabena Bediako, University of California at Berkeley: *Katie Jungjohann*

Electron and Phonon Transport in Ion-Irradiated 2D-on-GaN Heterostructures; Debbie Senesky, Stanford University: *Yongqiang Wang*

Electron-Phonon Coupling in Low-Dimensional Quantum Materials; Roxanne Tutchton, Los Alamos National Laboratory: *Jian-Xin Zhu*

Elucidation of Cation Effects on Polymer Interface Structures in Fuel Cell Electrodes; Rodney Borup, Los Alamos National Laboratory: *Peter Goodwin*

Evaluating Materials Assurance for Nano and Micro lattices; Nick Leathe, Sandia National Laboratories: *Brad Boyce*

Fabrication and Characterization of Nonfilamentary Memristors for Neuromorphic Synaptic Devices; Marek Osinski, University of New Mexico: *John Nogan*

Genetically Engineered Polymer for Control and Interrogation of Angiogenesis Signaling; Eva Rose Balog, University of New England: *Jen Martinez*

Graphene Nano Channel for Chemo Resistive Gas Sensor; Ho Won Jang, Seoul National University: *Jinkyoung Yoo*

Growth of a Dense and Uniform Array of Semiconductor Nanowires by Ion-Beam Treatment and Its Application to Highly Efficient Solar Cells; Jung-Kun Lee, University of Pittsburgh: *Jinkyoung Yoo*

Higgs Mode in Inhomogeneous Superconducting Nano Films; Shizeng Lin, Los Alamos National Laboratory: Jian-Xin Zhu

High Speed, Low Divergent Semiconductor Beam Combining; John Joseph, OptiPulse: *John Nogan*

High Temperature Nanomechanical Characterization of Nanograined Zirconia Using Laser Heated in situ TEM; Robson Lopes Grosso, University of Sao Paulo: *Khalid Hattar*

Hole-Spin Qubits in Strained Ge/SiGe Quantum Wells; Dwight Luhman, Sandia National Laboratories: *Mike Lilly*

Hybrid Active Optical Probe for Nanoscale Ultra-Fast Spectroscopy; Alexander Ukhanov, Actoprobe LLC: *Doug Pete*

Imaging Chemical Activity Dynamics of Interacting Fungi and Bacteria During Plant Litter Decomposition; John Dunbar, Los Alamos National Laboratory: *Anatoly Efimov*

In Situ Observation of Strain Localization in Structural Amorphous Steels (SAS) using the SEM Picoindenter; Corinne Packard, Colorado School of Mines: *Brad Boyce*

In-situ TEM Characterization of Solid Electrolyte in 3D Lithium Ion Nanobattery has been submitted to the Center for Integrated Nanotechnologies (CINT); Jane Chang, University of California at Los Angeles: *Katie Jungjohann*

In-situ TEM Experiments of Electrochemical Lithiation and Delithiation of Carbon Nanotube-SnO2 Core-Shell Nanowires; Wenzhi Li, Florida International University: *Katie Jungjohann*

Intrinsic Optical Imaging of Metabolic Byproducts in Biofuel Organisms; Blake Hovde, Los Alamos National Laboratory: *Anatoly Efimov*

Intrinsically Tunable and Ultra-Linear Multi-Fin GaN MOS-HEMT Devices; Shadi Dayeh, University of California at San Diego: *John Nogan*

Investigating the Growth Mechanism and Magnetic Properties of Catalytically Active Ruthenium Nanostructures Selectively Coated with Platinum; Richard Tilley, University of New South Wales: *Dale Huber*

Investigating the Structure and Behavior of DNA Stabilized Metal Clusters Using the Titan ETEM; Renee Goreham, Victoria University of Wellington: *Dale Huber*

Ion Beam Analysis of p-type Doping of Wide Bandgap Semiconductors; Rachel Goldman, University of Michigan: *Yongqiang Wang*

Kondo Weyl Semimetals and Quantum Criticality in Heavy Fermion Systems; Huiqiu Yuan, Zhejiang University: *Jian-Xin Zhu*

Lateral and Vertical Transport in n- and p-type InAsSb and InAs/InAsSb Type-II Strained Layer Superlattices for Infrared Detector Applications; Balakrishnan Genesh, University of New Mexico: *Rohit Prasankumar*

LEDs on Metal Foil; Vladimir Matias, iBeam Materials, Inc: *Anatoly Efimov*

Light Funneling through Ultra-Subwavelength Channels for Broadband Detection; Ganapathi Subramania, Sandia National Laboratories: *Dale Huber*

Linear and Nonlinear High-Contrast Mie-Resonant Nanostructures for Visible Frequencies; Isabelle Staude, Friedrich-Schiller University: *Igal Brener*

Lithography for Atomic Physics Applications in Space III; Mayer Landau, Air Force Research Laboratory (AFRL): *John Nogan*

Low-Dimensional Electron/Hole Systems in SiGe Heterostructures; Tzu-Ming Lu, Sandia National Laboratories: *Mike Lilly*

Making the Unmakeable: Nanostabilized Magnetic Alloys; Andrew McGrath, Los Alamos National Laboratory: *Sergei Ivanov*

MBE Patterned Regrowth of Void-Semiconductor Photonic Crystal Surface Emitting Lasers; Balakrishnan Genesh, University of New Mexico: *John Nogan*

Measuring Stress Distribution in a Loaded Slab Using Nano-Indentation and AFM; Pamela Burnley, University of Nevada, Las Vegas: *Nan Li*

Mechanical and Irradiation Response of Nanostructured Metallic Materials; Xinghang Zhang, Purdue University: *Nan Li*

Metamaterial-Based Infrared Modulators; Jason Valentine, Vanderbilt University: *Igal Brener*

Micromachined Thermal Platforms for Nanoscale Thermoelectrics and Spintronics; Barry Zink, University of Denver: *John Nogan*

Modeling of Conducting Conjugated Polymers. Part 3: Towards Computer-Aided Design of Conjugated Polymers; Andriy Zhugayevych, Skolkovo Institute of Science and Technology: *Sergei Tretiak*

Modeling Photochemistry and Spin-States in Photoactive Molecular Materials; Tammie Nelson, Los Alamos National Laboratory: *Sergei Tretiak*

Molecular-Scale Breaking Due to Repeated Loading in Nanomachines; Henry Hess, Columbia University: *George Bachand*

Multi-Chain Responsive and Adaptive Soft Nanoparticles; Dvora Perahia, Clemson University: *Gary Grest*

Multi-Modal Nanoscale Cellular Probes; Shadi Dayeh, University of California at San Diego: *Jen Martinez*

Nanocomposite Waveguides for Laser Cooling Applications; Yuliya Kuznetsova, Picotek, LLC: *Anatoly Efimov*

Nano-Materials Informatics (Nano-MI) Methods for Soft-Synthesis Nanomaterial Design and Discovery; Petko Bogdanov, University at Albany-SUNY: *Jennifer Hollingsworth*

Nanopatterning of Ne/Ar Gas-Bubble Superlattice in bcc Metals; Cheng Sun, Idaho National Laboratory: *Yongqiang Wang*

Nanoscale Phenomena in Two-Dimensional Electron Gases at Extreme Magnetic Fields; Denis Karaiskaj, University of South Florida: *John Reno*

Nanostructured Response of Shape Memory Alloys; Peter Anderson, Ohio State University: *Khalid Hattar*

Non-Equilibrium Osmophoric Response of Unilamellar Vesicles in Concentration Gradient Fields; Atul Parikh, University of California at Davis: *Dale Huber*

Nonlinear Optical Materials for Characterizing Femtosecond X-ray Pulses Using Slow, Visible Detectors; Pamela Bowlan, Los Alamos National Laboratory: *Jian-Xin Zhu*

Novel Strategies for Precise Control over Aqueous Block Polymer Self-Assembly via Dynamic Covalent Chemistry; Brad Jones, Sandia National Laboratories: *Millie Firestone*

Observing a Sensor in Action: In-situ Study of Adsorption of Analytes on Nanomaterials; Ravishankar Narayanan, Indian Institute of Science; *Katie Jungjohann*

Observing the Catalytic Behavior of Nickel Silicate Nanoparticles During the Oxidation of Methane to Produce Dimethyl Ether and Other Oxygenated Compounds; M. Grant Norton, Washington State University: *Katie Jungjohann*

Oxide Interface Control of Magneto Transport Properties in La0.9A0.1MnO3-SrTiO3 Superlattices; Judith Driscoll, University of Cambridge: *Aiping Chen*

Passive Radiative Metasurface Cooler; Abul Azad, Los Alamos National Laboratory: *John Nogan*

Physics of electrostatic discharge; Ezra Bussmann, Sandia National Laboratories: *Ezra Bussmann*

Preparation of Wafers for Solar Composition Analysis; Roger Wiens, Los Alamos National Laboratory: *John Nogan*

Probing the Structure Property Relationship of Mixed Polymer Brushes; Chester Simocko, San Jose State University: *Dale Huber*

Processing-microstructure-mechanical behavior relationships in lattice structures made of super alloys; Kavan Hazeli, University of Alabama in Huntsville: *Brad Boyce*

Pyrochlore Ordering in YSZ; Jessica Krogstad, University of Illinois at Urbana-Champaign: *Khalid Hattar*

Quantification of Thermal Instability within Commercial Lithium-Ion Battery Components; Loraine Torres-Castro, Sandia National Laboratories: *Sergei Ivanov*

Quantum Electronic Transport in Tubular Conduction Channel; Yong-Joo Doh, Gwangju Institute of Science and Technology: *Jinkyoung Yoo*

Realistic Molecular Dynamics of Strongly Correlated Electrons Systems; Jean-Pierre D Julien, Institute NEEL CNRS/UJF: *Jian-Xin Zhu*

Silver Cluster Chromophores Tuned via Targeted DNA Modifications; Jeff Petty, Furman University: *Peter Goodwin*

Simulated Gastrointestinal Tract: Enteroid Monolayers and Microfluidics; Olga Kovbasnjuk, University of New Mexico: *George Bachand*

Simulation of the Influence of Defects and Irradiation on the Magnetism of Iron; Julien Tranchida, Sandia National Laboratories: *Remi Dingreville*

Single Photon Sources in Novel Materials; Xiaoqin (Elaine) Li, The University of Texas at Austin: *Han Htoon*

Solid Polymer Electrolytes from Polymerized Mesophases of Plutonic/Ionic Liquid/Oil; Reza Foudazi, New Mexico State University: *Millie Firestone*

Solid-State Lithium-Sulfur Batteries Based on Nanopillar Electrodes; Jacob Spendelow, Los Alamos National Laboratory: *Jinkyoung Yoo*

Spatially Precise Single Photon Emission through Chemical Functionalization and Strain Localization of an Atomically-Thin Semiconductor; Wei Wu, University of Connecticut: *Michael Pettes*

Study of Resonant Light Scattering by Artificial Nanostructures; Sang-Yeon Cho, New Mexico State University: *Igal Brener*

Supercapacitor Based on Nanoporous Frameworks of Redox-Active Metal Clusters; Minyuan Li, Los Alamos National Lab: *Sergei Ivanov*

Surface functionalization of BaTiO3 to Enable Agglomeration Free Composites; Tyler Stevens, Sandia National Laboratories: *Sergei Ivanov*

Surface Treatment Effects on Ultra-Wide Bandgap III-N Local Electronic Structure; Erica Douglas, Sandia National Laboratories: *Taisuke Ohta*

Synthesis of Strained Thick Epitaxial Nanoscaffolding Films for much Enhanced Functionalities; Quanxi Jia, University of Buffalo: *Aiping Chen*

Targeting of a Nanoformulation Preventing Atrial Fibrillation; Kenneth Dormer, Liberty University: *Dale Huber*

Terahertz Colossal Magnetoresistance in Oxide Nanocomposites; James Lloyd-Hughes, University of Warwick: *Aiping Chen*

Terahertz Metamaterial Filters Under High Intensity Conditions; George Keiser, Washington College: *Hou-Tong Chen*

Terahertz Quantum Cascade Lasers for Security and Military Applications; Qing Hu, Massachusetts Institute of Technology: *John Reno*

The Dynamics of Cellulose Oxidation by Lytic Polysaccharide Monooxygenases (LPMOs); K. Benedikt Möllers, University of Copenhagen: *Peter Goodwin*

The Morphology and Pore Structure Control Effect on Epitaxial SrTiO3 for High Power Lithium Ion Batteries; Hyungkyu Han, Los Alamos National Laboratory: *Aiping Chen*

Theoretical Material Design of F-Electron Topological Superconductors; Hongchul Choi, Pohang University of Science and Technology (POSTECH): *Jian-Xin Zhu*

Thermoelectric Effect in S/F Hybrid Nanostructures; Meenakshi Singh, Colorado School of Mines: *Mike Lilly*

Thin Films Coating and Quality Evaluation for Preventing Carbon Contamination During Ion Irradiation; Yuanyuan Zhu, Pacific Northwest National Laboratory (PNNL): *Aiping Chen*

THz/IR QCL Frequency Combs for Threat Detection; Qing Hu, Massachusetts Institute of Technology: *John Reno*

Topological Insulator Quantum Cascade Lasers; Peter Qiang Liu, University at Buffalo: *John Reno*

Toward Novel Spectroscopy-Based DNA Sequencing; Olga Amosova, Armonica technologies, LLC: *Anatoly Efimov*

Tracking Defect Accumulation and Annealing in Highly Oriented Materials; Jeffery Aguiar, Idaho National Laboratory: *Khalid Hattar*

Tracking Particle and Fluid Transport through 3D Networks; Duncan Ryan, Los Alamos National Laboratory: *Jim Werner*

Transepitaxy of Semiconductor across Graphene; Young Joon Hong, Sejong University: *Jinkyoung Yoo*

Trapping Hydrogen with Helium Nanobubbles; Brian Wirth, University of Tennessee: *Khalid Hattar*

Tuning of Magnetic and Transport properties on Lightly Doped Perovskite Manganites La0.9Sr0.1MnO3 via Substrate and Thickness Induced Epitaxial Strain; Binod Paudel, New Mexico State University: *Aiping Chen*

Ultrafast and Nonlinear Optical Phenomena Using All-Dielectric Metasurfaces; Igal Brener, Sandia National Laboratories: *Igal Brener*

Ultra-wide Solar Spectrum Type-I Photo-Thermoelectric Cell; Julio Martinez, Manhattan College: *Brian Swartzentruber*

Understanding Extreme Strength and Plasticity in Nanotwinned NiMoW Alloys; Kevin Hemker, Johns Hopkins University: *Khalid Hattar*

Understanding Si-Decorated Nanoporous-Carbon Anodes for High-Performance Li-Ion Energy Storage; Katharine Harrison, Sandia National Laboratories: *Katie Jungjohann*

Understanding the Interface Structure on Irradiation Resistance and Mechanical Properties of Nanostructured Composites; Osman Anderoglu, University of New Mexico: *Remi Dingreville*

Unlocking Nanoscale Charge Transport Dynamics in Thin Films using Multiple Integrated Tips Device; Kwame Amponsah, Xallent LLC: *John Nogan*

Unraveling Novel Electronic States at the Interface of Dirac Materials; Elbert Chia, Nanyang Technological University: *Jian-Xin Zhu*