

## **CINT 2014B Accepted Proposals**

*Ab initio Simulations of Interfaces in Quantum Dots; Svetlana Kilina, North Dakota State University: Sergei Tretiak*

*Abrupt Electrical Junctions in Nanowire Devices by Catalyst Alloying; Yossi Rosenwaks, Tel Aviv University: Jinkyong Yoo*

*Active Plasmonics in the Near Infrared; Gordon Keeler, Sandia National Laboratories: Willie Luk*

*Advanced Functional Biomimetic Soft/Composite Nanoparticle Protocells; Eric Carnes, Sandia National Laboratories: Wally Paxton*

*All-dielectric nanostructures for structured light manipulation on a chip; Natalia Litchinitser, State University of New York: Igal Brener*

*All-dielectric thin-film infrared metasurfaces; Nanfang Yu, Columbia University: Hou-Tong Chen*

*Atomic Layer Deposition for High Performance Graphene Electronics; Thomas Beechem, Sandia National Laboratories: John Nogan*

*Biomimetic Membranes for Ion Transport; Susan Rempe, Sandia National Laboratories: Mark Stevens*

*Characterization of a novel junction between carbon nanotube-structures and silicon substrate; Waqas Khalid, Jadoo Technologies Inc: Jinkyong Yoo*

*Compact THz sources based on 2D materials on pre-patterned substrates; Francesca Cavallo, University of New Mexico: John Nogan*

*Computational study of nanoparticle self-assembly at polymer-air interfaces; Guido Raos, Politecnico di Milano: Amalie Frischknecht*

*Copy of Growth and fabrication of multiferroic BiFeO<sub>3</sub> samples for high resolution soft x-ray imaging of magnetic domains; Richard Sandberg, Los Alamos National Laboratory: John Nogan*

*Copy of Local Evanescent Array Coupled Integrated Optics for Molecular Sensing; Kevin Lear, Colorado State University: John Nogan*

*Correlation of Atomic Structure and Photophysics for Probing the Dark Fraction of "Giant" Nanocrystal Quantum Dots; Sandra Rosenthal, Vanderbilt University: Jennifer Hollingsworth*

*Crystallization and Deformation of Refractory Metals; Matthew Janish, University of Connecticut: Katie Jungjohann*

*Defect Modeling of InAs/GaSb Type-II Strained-Layer Superlattices using Hybrid Density Functional Theory; Sanjay Krishna, University of New Mexico: Normand Modine*

*Designing Many-Body Functionality Using Complex Nanostructures; Cristiano Nisoli, Los Alamos National Laboratory: Jennifer Hollingsworth*

*Deterministic Ion Implantation for Optimization of Donor-SET Tunneling Rates for Two Qubit Formation in Silicon MOS Devices; Ed Bielejec, Sandia National Laboratories: Mike Lilly*

*Developing tri-component nano-laminate thin films that exhibit age hardening behavior Renewal and additional work proposal; Dave Bahr, Purdue University: Jon Kevin Baldwin*

*Development of non-metallic Fano-resonant infrared metamaterials with high quality factors and unusual optical functionalities; Gennady Shvets, The University of Texas at Austin: Igal Brener*

*Development of thin-film metal oxide-graphene multifunctional hybrid structures; Enkeleda Dervishi, Los Alamos National Laboratory: Quanxi Jia*

*Directed assembly of tip-functionalized carbon nanotubes; Ron Salesky, University of New Mexico: Jen Martinez*

*Effects of Nanoscale Aggregates on Dynamics in Ionomer Melts; James Runt, Penn State University: Amalie Frischknecht*

*Electric Field Induced Damage to DNA: Pathway to New Vaccines; Tanvir Ahmed, VBI Vaccines, Inc.: Peter Goodwin*

*Electrical characterization of nano-scale free-form wires; Bryan Kaehr, Sandia National Laboratories: Brian Swartzentruber*

*Electron Dynamics in Low-Dimensional Systems; Eric Shaner, Sandia National Laboratories: Tom Harris*

*Electronic Interactions in van der Waals Materials; Joshua Robinson, Pennsylvania State University: Taisuke Ohta*

*Engineering Inorganic Nanomaterials, Films, and Nanofibers; Chris Cornelius, University of Nebraska: Katie Jungjohann*

*Exciton behavior in monolayer transition metal dichalcogenides; Chih-Kang Shih, University of Texas at Austin: Han Htoon*

*Exploring Cooperative Behaviors in Mesoscopic Aerogel Networks of “giant”-Nanocrystal Quantum Dots; Stephanie Brock, Wayne State University: Han Htoon*

*Exploring Revolutionary Thermoelectric Performance via Quantum Confinement; Michael Siegal, Sandia National Laboratories: Mike Lilly*

*Exploring the Antibacterial Properties of Various Carbon Nanostructures; Kristin Omberg, Los Alamos National Laboratory: Stephen Doorn*

*Extreme nondegenerate two-photon absorption in bulk and MQW structures; Eric Van Stryland, University of Central Florida: John Reno*

*Fabrication and Optical Characterization of III-Nitride Core-Shell Nanostructures; Daniel Feezell, University of New Mexico: Igal Brener*

*Fabrication of metal-organic templates: A route for more efficient solar cells; Manuel Ramos, University of Texas at El Paso: John Nogan*

*Fabrication of subwavelength and Low loss Negative Index Metamaterials using Dark Dielectric Resonators; Aditya Jain, Ames Laboratory: Igal Brener*

*Fast and tunable infrared thermal sources; Francois Marquier, Institut d’Optique, Laboratoire Charles Fabry: Igal Brener*

*Functional Boron Nitride Nanostructures; Yoke Khin Yap, Michigan Technological University: Katie Jungjohann*

*Gas phase photophysics of DNA-templated Au and Ag nanoparticles; Scott Anderson, University of Utah: Jen Martinez*

*Gate Tunable Nano-Hybrid Superconducting Qubits; Yong-Joo Doh, Korea University Sejong Campus: Jinkyong Yoo*

*Ge/Si core/shell nanowires for quantum devices; Sergey Frolov, University of Pittsburgh: Jinkyong Yoo*

*Graphene modified biocatalytic anode for enhanced electron transfer in enzymatic power sources; Vojtech Svoboda, Binergy Scientific, Inc.: Jinkyong Yoo*

*Graphene Polymorphism; Karsten Pohl, University of New Hampshire: Taisuke Ohta*

*Graphene-Nanowire Heterostructures for High-Performance Battery Anodes; Enkeleda Dervishi, Los Alamos National Laboratory: Jinkyong Yoo*

*High-efficiency, on-chip arrays of single photon sources and detectors; Dirk Englund, Massachusetts Institute of Technology: Ryan Camacho*

*Imaging Nanoscale Chemical and Electronic Structure Variations in Thin Film Photovoltaic Materials with Low Energy Electron Microscopy; Calvin Chan, Sandia National Laboratories: Taisuke Ohta*

*Impact of High Current Pulses on Dense VCSEL Arrays; Mial Warren, TriLumina Corporation: Willie Luk*

*In situ Mechanical Testing of Metallic and Semiconducting Nanowires using the CINT Discovery Platform; Daniel Gianola, University of Pennsylvania: Tom Harris*

*In Situ TEM Characterization of Metal Oxide Memristors; Matthew Marinella, Sandia National Laboratories: Katie Jungjohann*

*In situ TEM observation of insulator-metal transition in homogenous and core-shell nanoparticles; Paul Clem, Sandia National Laboratories: Katie Jungjohann*

*Integrated quantum photonics; Damien Bonneau, University of Bristol: Ryan Camacho*

*Integration of Ion Transport Proteins into Electrochemical Energy Storage Systems; Erik Spoerke, Sandia National Laboratories: George Bachand*

*Investigating the Phase Stability of New Transition Metal Dichalcogenides for Li-ion Batteries through In-Situ TEM; Christopher Hinkle, University of Texas at Dallas: Katie Jungjohann*

*Investigation of Curvature and Grafting Effects on PNIPAM Cononsolvency; Michael J.A. Hore, Case Western Reserve University: Dale Huber*

*Investigation of the fundamental mechanisms involved in rolling contact fatigue through nano-indentation testing of plastically graded (case hardened) bearing steels; Tom Kanaby, IBC Coating Technologies Inc: Nate Mara*

*Irradiation Effects on Electrochemical Charge Storage in Nanostructured TiO<sub>2</sub> Electrode for Li-ion Batteries; Hui Xiong, Boise State University: Yongquiang Wang*

*Junctionless Nanowire Transistor-Continuation; Roderick Devine, Think-Strategically: John Nogan*

*Lattice Dynamics of complex metal oxides; Stefan Zollner, New Mexico State University: Igal Brener*

*LEEM/PEEM study of 2D nanomaterial hetero-structures; Aditya Mohite, Los Alamos National Laboratory: Taisuke Ohta*

*Light-matter interaction phenomena using subwavelength engineering of material properties; Salvatore Campione, Sandia National Laboratories: Igal Brener*

*Lithiation Mechanisms in Tin Nanostructures; M. Grant Norton, Washington State University: Katie Jungjohann*

*Micro- and Nano-domain Modulation of Fungal Pathogen Interaction with Human Dendritic Cells; Aaron Neumann, University of New Mexico: George Bachang*

*Microstructural Evolution of Ion-irradiated Nanocomposite Gallium Nitride; Debbie Senesky, Stanford University: Yongquiang Wang*

*Modeling phonon-coupled electron dynamics across pi-conjugated heterojunctions; Xi Lin, Boston University: Sergei Tretiak*

*Nanocrystalline Metals: Towards Radiation Tolerance; Mitra Taheri, Drexel University: Jon Kevin Baldwin*

*Nanoengineering polymer-enzyme conjugates for efficient enzyme-recycling; Michael Kent, Sandia National Laboratories: Wally Paxton*

*Optical Microring Resonators for Add-Drop Filters; Glenn Li, Skorprios Technologies: Ryan Camacho*

*Optimizing nanoscale thin film structure for the determination of SEI chemistry in energy storage materials; James Browning, Oak Ridge National Laboratory: Jon Kevin Baldwin*

*Optoelectronic Properties of III-Nitride Nanostructures; George Wang, Sandia National Laboratories: Igal Brener*

*Photocurrent Generation Dynamics in Organic/Inorganic Composite Nanofibers; Yang Qin, University of New Mexico: Rohit Prasankumar*

*Photon Sensing Structures Created from Two-Dimensional Transition-Metal Dichalcogenide Semiconductors; Elias Towe, Carnegie Mellon University: Willie Luk*

*Physics of Interactions of SWNTs and Ion Complexes/Macromolecules inside a Hydrogel as a Biomimetic Crowded Environment; Slava V. Rotkin, Lehigh University: Stephen Doorn*

*Polyelectrolyte elasticity; Omar Saleh, University of California at Santa Barbara: Mark Stevens*

*Probing the existence and manipulation of Majorana fermions in strongly correlated topological insulators; Filip Ronning, Los Alamos National Laboratory: John Nogan*

*PVD Synthesis and Nanomechanics of Ni/C Nanolayered Thin Films; Amit Misra, University of Michigan: Jon Kevin Baldwin*

*Quantum Plasmonics of Graphene/TMD-Semiconductor Nanostructures; Oleksiy Roslyak, Fordham University: Han Htoon*

*Renewal of Nanoparticle Mass Spectrometry of Giant Quantum Dots; Scott Anderson, University of Utah: Jennifer Hollingsworth*

*Room Temperature Deformation and Melting Point Suppression of Alumina Nanoparticles; Pylin Sarobol, Sandia National Laboratories: William Mook*

*Selective CdTe and Zn Doped CdTe Nanoheteroepitaxial Growth on Si Substrates using Close-Spaced Sublimation; Aryzbe Najera, University of Texas at El Paso: Doug Pete*

*Silicon photonic devices; Jeffrey Shainline, National Institute of Standards and Technology (NIST): Anthony James*

*Simulations and Experiments to Understand Nano-Scale Aggregates in Precise Copolymers and Ionomers; Karen Winey, University of Pennsylvania: Amalie Frischknecht*

*Single Molecule Spectroscopy and Microscopy of Semiconductor Quantum Dot Clusters Higher Order Structure; Alan van Orden, Colorado State University: Peter Goodwin*

*Small Angle X-Ray Scattering Analysis of Bipyridinium- Based Template-Directed Soft Matter in Water; Mark Olson, Texas A&M University-Corpus Christi: Millie Firestone*

*Stability and sink efficiency of different bilayer interfaces upon heavy ion irradiation; Engang Fu, Peking University: Yongquiang Wang*

*Stress-Induced Effects on the Optical Response of Doped ZnO Thin Films; Don Lucca, Oklahoma State University: Quanxi Jia*

*Strongly-Injection-Locked Cascaded Microring Lasers for Chirp-Suppressed Ultrafast Optical Transmitters; Marek Osinski, University of New Mexico: John Nogan*

*Structural and Electronic Properties of Chemically Modified Graphene and 2D semiconductors; Eric Shaner, Sandia National Laboratories: Tom Harris*

*Studies of Excitons and Photons in Single- and Double-Wall Carbon Nanotubes Using Resonance Raman Scattering; Junichiro Kono, Rice University: Stephen Doorn*

*Superparamagnetic Nanoparticles for Biomagnetic Imaging; Erica Vreeland; Senior Scientific: Dale Huber*

*Super-resolution imaging of nano- and mesoscopic membrane remodeling; Gregory Voth, University of Chicago: Jen Martinez*

*Tailoring Spontaneous Emission of Quantum Dots with Metamaterial Nanostructures; Xiaodong Yang, Missouri University of Science and Technology: Willie Luk*

*Terahertz Quantum Cascade Lasers for Atmospheric and Planetary Spectroscopy; Albert Betz, University of Colorado at Boulder: John Reno*

*The Nanomechanical Response of X/Nb (X = Cu, Zr, Mg) Nanolamellar Composites Fabricated via Accumulative Roll Bonding; John Carpenter, Los Alamos National Laboratory: Nate Mara*

*Three Dimensional Photonic Crystals for Enhanced Light Matter Interaction; Shawn-Yu Lin, Rensselaer Polytechnic Institute: Willie Luk*

*Three-Dimensional Nanostructured Surfaces for the Multi-Length Scale Self-Organization of an Artificial Pancreas; Joseph Reiser, CureDM, Inc.: George Bachand*

*Topological Nano-thermoelectrics: Enhancing Thermoelectric Properties of Tellurides through Nanostructuring; Shixiong Zhang, Indiana University: Han Htoon*

*Transparent sol-gel Electronics; Mark Phillips, 1N1 Materials: John Nogan*

*Transport studies in superconductors, skyrmions and multiferroic systems; Leonardo Civale, Los Alamos National Laboratory: Quanxi Jia*

*Tunable THz metamaterial quantum cascade lasers and high power quantum-cascade layers; Benjamin Williams, University of California, Los Angeles: John Reno*

*Ultra-dilute Two-dimensional Electron Systems for Probing Electron-electron Interaction-driven phenomena and Novel Nano-devices; Jian Huang, Wayne State University: John Reno*

*Ultrafast Probes of Non-thermal, Hidden Spin State Transitions and Coherent Magnon Generation in LaCoO<sub>3</sub>; Jigang Wang, Ames Laboratory: Rohit Prasankumar*

*Understanding Mechanical Grain Coarsening in Nanocrystalline Metals; Brad Boyce, Sandia National Laboratories: William Mook*

*Understanding the interfacial effects on ionic transport in Li ion batteries; Yang Liu, North Carolina State University: Katie Jungjohann*

*Utilizing giant-QDs for Highly Efficient Lasing Systems that Exhibit Novel Energy Transfer Phenomena; Vladimir Tsukruk, Georgia Institute of Technology: Jennifer Hollingsworth*

*Van der Waals epitaxial semiconductor/2-dimensional atomic layer heterostructures: doping and heterojunction device applications; Young Joon Hong, Sejong University: Jinkyong Yoo*