

2010A Accepted CINT User Proposals

In-situ TEM of Silicon-coated Carbon Nanofibers for Li-ion battery technology, David Burton, Applied Sciences, Inc; Lead CINT Scientist: Jianyu Huang

Phonon, exciton, and light interactions in Semiconducting Single Walled Carbon Nanotubes, Anna Swan, Boston University; Lead CINT Scientist: Stephen Doorn

Novel Nanoindentation Technique for Quantifying Quantum Mechanical Barrier Height, David Fullwood, Brigham Young University; Lead CINT Scientist: Andrew Dattelbaum

Photocurrent spectroscopy as a tool to study charge transport in semiconductor nanocrystal films, Victor Klimov, Center for Advanced Solar Photophysics; Lead CINT Scientist: Han Htoon

Light-matter interaction between nanostructured metals and semiconductor nanocrystals, Victor Klimov, Center for Advanced Solar Photophysics; Lead CINT Scientist: Aaron Gin

Electrochromatic carbon Nanotube/ Polydiacetylene composite fibers for in-situ monitoring of structural integrity in aircraft, Huisheng Peng, Fudan University; Lead CINT Scientist: Quanxi Jia

Developing crystalline assemblies of nanoparticles through biomolecular recognition systems, Hyojong Yoo, Hallym University; Lead CINT Scientist: Jen Martinez

On-chain charge generation and relaxation mechanisms in isolated conjugated oligomers, Guglielmo Lanzani, IIT and Politecnico di Milano; Lead CINT Scientist: Sergei Tretiak

Quantum Control and Measurements of Excitons and Trions in GaAs Quantum Wells, Chih-Wei Lai, Michigan State University; Lead CINT Scientist: John Reno

Towards Quantum Simulators based on Cavity Polariton Lattices in Semiconductor Nanostructures, Chih-Wei Lai, Michigan State University; Lead CINT Scientist: John Reno

Atom probe tomography of giant nanocrystal quantum dots, Lincoln Lauhon, Northwestern University; Lead CINT Scientist: Jennifer Hollingsworth

In-situ electron microscopy and spectroscopy studies of interfaces in advanced Li-Ion batteries under dynamic operation conditions, Chongmin Wang, Pacific Northwest National Laboratory (PNNL); Lead CINT Scientist: Jianyu Huang

Quantum Imaging of Dirac Materials, Hari Manoharan, Stanford University; Lead CINT Scientist: Sasha Balatsky

DTEM Studies of Solution-Liquid-Solid Growth, Nigel Browning, University of California, Davis; Lead CINT Scientist: Aaron Gin

Programmable Lipid-Nanoparticle Composites: controlled reorganization of membrane-nanoparticle interactions using external Stimuli, Atul Parikh, University of California Davis; Lead CINT Scientist: Bruce Bunker

Quantum Interference Injection & Control of Ballistic Transport in Two-Dimensional High-Mobility GaAs Nanostructures, Arthur Smirl, University of Iowa; Lead CINT Scientist: John Reno

Characterization of a MEMS Device to Measure Stress/Strain in Li-Ion Battery Electrodes Assisted by the CINT Discovery Platform, Reza Ghodssi, University of Maryland; Lead CINT Scientist: John Sullivan

Development of Interband Cascade Devices, Rui Yang, University of Oklahoma; Lead CINT Scientist: Aaron Gin

Molecular basis of nanowire mediated electron transfer and coupling to metabolism in the photosynthetic bacterium Synechocystis sp. PCC 680, Martin Hohmann-Marriott, University of Otago; Lead CINT Scientist: Gabe Montano

Stable immobilization of fluorescent protein biosensors, Jon Dattelbaum, University of Richmond; Lead CINT Scientist: Andrew Dattelbaum

Minority Carrier Lifetimes in Silicon Nanowires, Mark Reed, Yale; Lead CINT Scientist: Tom Picraux

Photonic integration of “giant” nanocrystal quantum dots for real time fluorescence detection and quantum information processing, Hong Tang, Yale University; Lead CINT Scientist: Han Htoon

A study of the effect of interfaces on microstructure and mechanical properties of ion implanted materials (extension# P0978), Osman Anderoglu, LANL; Lead CINT Scientist: Jianyu Huang

Transformational Approach for the Fabrication of Semiconductor Nanowires: “Flow” Solution-Liquid-Solid Growth, Kumar Palaniappan, LANL; Lead CINT Scientist: Jennifer Hollingsworth

Establishing Materials-by-Design Strategies for “Giant” Nanocrystal Quantum Dots Toward High-Efficiency Solid-State Lighting, Yagnaseni Ghosh, LANL; Lead CINT Scientist: Jennifer Hollingsworth

Surface enhanced raman performance of constrained nanoparticle geometries; Lead CINT Scientist: Han Htoon

Silicon nanowire cells, Ian Campbell, LANL; Lead CINT Scientist: Tom Picraux

Photophysical and sensing properties of single-walled carbon nanotubes-silica-aerogel, Juan G Duque, LANL; Lead CINT Scientist: Han Htoon

Resonant raman spectroscopy of Chirality-enriched semiconducting single walled carbon nanotubes, Juan G Duque, LANL; Lead CINT Scientist: Stephen Doorn

Experimental verification of the reduction of diffusion broadening by time-gated single-molecule data acquisition, Thomas Yoshida, LANL; Lead CINT Scientist: Peter Goodwin

Nanoscale Plasticity within energetic and inert molecular single crystals, Kyle Ramos, LANL; Lead CINT Scientist: Nate Mara

Light-matter interactions at the nanoscale, Diego Dalvit, LANL; Lead CINT Scientist: Stuart Trugman

Investigation of relativistic spin-splitting in non-centrosymmetric crystal structures, with VIZ@CINT, Hari Dahal, LANL; Lead CINT Scientist: Sasha Balatsky

Light-Up nanoclusters and their applications in biosensing, Hsin-Chih Yeh, LANL; Lead CINT Scientist: Jen Martinez

Ultrafast optical spectroscopy of nanoscale heterostructures of correlated electron materials, Dzmitry Yarotski, LANL; Lead CINT Scientist: Anatoly Efimov

Health effects of engineered nanomaterials, Rashi Iyer, LANL; Lead CINT Scientist: Gabe Montano

Active chiral metamaterial with tunable optical activity, John O'Hara, LANL; Lead CINT Scientist: Hou Tong Chen

Investigation of nanoscale superconductivity phenomenology, Michael Rabin, LANL; Lead CINT Scientist: Aaron Gin

Atomic force microscopy studies of nitride thin films, Todd Williamson, LANL; Lead CINT Scientist: Nate Mara

Mechanical deformation of nanocomposites and nanofoams, Nan Li, LANL; Lead CINT Scientist: Jianyu Huang

Fatigue and wear of nanocrystalline metals, Brad Boyce, Sandia National Laboratories; Lead CINT Scientist: Jianyu Huang

Correlation of network Architecture and the development of synaptic memory in in vitro engineered neuronal cell networks, Conrad James, Sandia National Laboratories; Lead CINT Scientist: George Bachand

Inorganic III-nitride Emitters on flexible substrates, Jonathan Wierer, Sandia National Laboratories; Lead CINT Scientist: Willie Luk

Ellipsometric Characterization of infrared metamaterials, James Ginn, Sandia National Laboratories; Lead CINT Scientist: Aaron Gin

Voltage tunable Mid-infrared Metamaterials, Eric Shaner, Sandia National Laboratories; Lead CINT Scientist: Aaron Gin

Structural and electronic relaxation properties of planar and nonplanar grapheme nanostructures, Eric Shaner, Sandia National Laboratories; Lead CINT Scientist: Aaron Gin

Tunable semiconductor Plasmon terahertz detectors with subwavelength antennas, Eric Shaner, Sandia National Laboratories; Lead CINT Scientist: John Reno

Scaling in quantum hall plateau-to-plateau transition in undoped alloy-disorder dominated $\text{Al}_x\text{Ga}_{1-x}\text{As}/\text{Al}_{0.32}\text{Ga}_{0.68}\text{As}$ Heterostructures, Wei Pan, Sandia National Laboratories; Lead CINT Scientist: Mike Lilly

Cryogenic CMOS characterization for integration to quantum circuitry, Robert Kaplar, Sandia National Laboratories; Lead CINT Scientist: Mike Lilly

Semiconductor alloy nanowires for light emission applications, Cun-Zheng Ning, Arizona State University; Lead CINT Scientist: Willie Luk

Single molecule spectroscopy and microscopy of semiconductor quantum dot clusters, Alan Van Orden, Colorado State University; Lead CINT Scientist: Jim Werner

Characterization of stable salt-induced protein aggregates, Gina McDonald, James Madison University; Lead CINT Scientist: Gabe Montano

Entanglements at interfaces and the mechanical strength of polymer welds, Thomas Woolf, Johns Hopkins University; Lead CINT Scientist: Gary Grest

Electrostatics in Coarse-Grained Dynamics of Nanosystems: Water and Lipid Bilayers, Thomas Woolf, Johns Hopkins University; CINT Lead Scientist: Mark Stevens

Long-wavelength terahertz quantum cascade lasers for applications in imaging and spectroscopy, Sushil Kumar, Massachusetts Institute of Technology; Lead CINT Scientist: John Reno

Quantum electronics in GaAs/AlGaAs by means of resistive NMR and scanned probe imaging, Guillaume Gervais, McGill University; Lead CINT Scientist: John Reno

Synthesis and characterization of individual boron nitride nanostructures, Yoke Khin Yap, Michigan Technological University; Lead CINT Scientist: Jianyu Huang

Nonlinear responses of superconducting terahertz metamaterials, Keith Nelson, Massachusetts Institute of Technology; Lead CINT Scientist: Aaron Gin

Ultrafast infrared and terahertz studies of energy transfer dynamics in strongly coupled vibrational systems, Keith Nelson, Massachusetts Institute of Technology; Lead CINT Scientist: Toni Taylor

High saturation magnetization nanocomposite particles for biodetection, Victor Esch, NanoMR; Lead CINT Scientist: Dale Huber

Luminescence mechanisms of Eu ions in ZnO and their coupling to surface plasmons, Handong Sun, Nanyang Technological University; Lead CINT Scientist: Quanxi Jia

Magnetic field controlled terahertz quantum cascade lasers, Dmitry Smirnov, National High Magnetic Field Laboratory; Lead CINT Scientist: John Reno

Real-time TEM studies of li-ion battery conversion anodes, M.V. Reddy, National University of Singapore; Lead CINT Scientist: Jianyu Huang

Development of surface Plasmon nanocavities for biosensing, Sang-Yeon Cho, New Mexico State University; Lead CINT Scientist: Igal Brener

Active switching semiconductor and superconductor terahertz surface Plasmon devices, Weili Zhang, Oklahoma State University; Lead CINT Scientist: Hou-Tong Chen

Guided-wave terahertz metamaterials, Rajind Mendis, Rice University; Lead CINT Scientist: Hou-Tong Chen

Self-aligned process for production of nanogap plasmoniv structures, Douglas Natelson, Rice University; Lead CINT Scientist: Aaron Gin

Controllable spatial terahertz modulator for imaging based on compressed sensing, Daniel Mittleman, Rice University; Lead CINT Scientist: Hou-Tong Chen

Study of exciton-phonon coupling behavior in armchair single-walled carbon nanotubes and double-walled carbon nanotubes using raman scattering excitation profiles, Junichiro Kono, Rice University; Lead CINT Scientist: Stephen Doorn

Charge and spin pump in strongly correlated one-dimensional GaAs systems, Jian Huang, Taylor University; Lead CINT Scientist: Aaron Gin

Effect of size scale on magnetic field-induced martensitic transformation in meta-magnetic shape memory alloys, Ibrahim Karaman, Texas A&M University; Lead CINT Scientist: Nate Mara

Fluorescent-magnetic nanocomposites: A new tool for manipulating the cytoskeleton, Jessica Winter, The Ohio State University; Lead CINT Scientist: George Bachand

High-speed optical modulation of negative-index materials, Steven Brueck, University of New Mexico; Lead CINT Scientist: Rohit Prasankumar

Characterization of single silicon nanowire based li-ion battery for energy storage, Jane Chang, UCLA; Lead CINT Scientist: Jianyu Huang

Time-resolved Thz spectroscopy in semiconductor quantum posts, Mark Sherwin, UCSB; Lead CINT Scientist: Toni Taylor

Infrared ellipsometry of grapheme films, Dmitri Basov, UCSD; Lead CINT Scientist: Rohit Prasankumar

Mid-infrared beam steering with plasmonic structures, Daniel Wasserman, UMass Lowell; Lead CINT Scientist: John Nogan

Hybrid optomechanical oscillator, Mani Hossein-Zadeh, University of New Mexico; Lead CINT Scientist: Aaron Gin

Ion implantation effects on the transport properties and degradation mechanisms of organic field-effect transistors, Beatrice Fraboni, University of Bologna; Lead CINT Scientist: Mike Nastasi

Specific heat measurements of VLS nanowires, Daniel Queen, University of California, Berkeley; Lead CINT Scientist: Tom Picraux

Role of Mn doping on the electrical properties of lead strontium titanate films, Menka Jain, University of Connecticut; Lead CINT Scientist: Quanxi Jia

Carrier dynamics and Thz detection with composite nanomaterials, Joshua Zide, University of Delaware; Lead CINT Scientist: Hou-Tong Chen

Ge nanowire anodes for solid state li-ion batteries, Kevin Jones, University of Florida; Lead CINT Scientist: Tom Picraux

An atomistic multi-scale description of charge and excitation motion in conjugated materials, David Beljonne, University of Mons; Lead CINT Scientist: Anatoly Efimov

Non-blinking Quantum Dots for multi-color and 3D single particle tracking, Diane Lidke, University of New Mexico; Lead CINT Scientist: Jennifer Hollingsworth

Development of plasma membrane bilayers to characterize intercellular interactions, Amanda Carroll-Portillo, University of New Mexico; Lead CINT Scientist: Gabe Montano

Supermagnetic nanoparticles for specific magnetic resonance imaging and therapy of prostate cancer, Laurel Sillerud, University of New Mexico, School of Medicine; Lead CINT Scientist: Dale Huber

In situ mechanical testing of phase change nanowires using the CINT discovery platform, Daniel Gianola, University of Pennsylvania; Lead CINT Scientist: John Sullivan

Interfacial chemistry for magnetic nanomanipulation of DNA and protein-DNA complexes, Stephen Levene, University of Texas at Dallas; Lead CINT Scientist: Jen Martinez

Passive and active Terahertz waveguides using metamaterial building blocks, Ajay Nahata, University of Utah; Lead CINT Scientist: Igal Brener

Imaging interferometric nanoscopy to the limits of available frequency space, S.R.J. Brueck, University of New Mexico; Lead CINT Scientist: Aaron Gin

Energy and charge transfer in engineered nanostructures via single dot tunneling and optical spectroscopy, Bogdan Daconescu, LANL; Lead CINT Scientist: Han Htoon

Equilibration in Correlated Quantum Systems, Stephan Haas, University of Southern California; Lead CINT Scientist: Sasha Balatsky

Microstructure and Physical property Characterization of Epitaxial Oxide Nanocomposite Films, Hongmei Luo, New Mexico State University. Lead CINT Scientist: Jennifer Hollingsworth

Quantum Invisibility in Nanoassembled Structures, Jonas Fransson, Uppsala University. Lead CINT Scientist: Sasha Balatsky

Surface plasmon nanoresonator sensors for malaria detection; Sang-Yeon Cho, New Mexico State University, Lead CINT Scientist: Igal Brener

Development of THz quantum cascade lasers as local oscillators for space applications, Jian Rong Gao, SRON Netherlands Institute for Space Research. Lead CINT Scientist: John Reno