

2008B Accepted CINT User Proposals

Nano and Microstructured Surfaces to Control Water and Biological Fluids, Antonio Garcia, Arizona State University; Lead CINT Scientist: Tom Picraux

Ion Irradiation Effects on The Transport Properties and Degradation Mechanisms of Organic Field-Effect Transistors, Beatrice Fraboni, University of Bologna; Lead CINT Scientist: Michael Nastasi

An atomistic multi-scale description of charge and excitation motion in conjugated materials, David Garcia, University of Mons-Hainaut; Lead CINT Scientist: Sergei Tretiak

Assembling Carbon Nanotubes Using Molecular Motors, Robert Haddon, University of California – Riverside; Lead CINT Scientist: Bruce Bunker

Active Switching Terahertz Surface Plasmon Device, Weili Zhang, Oklahoma State University; Lead CINT Scientist: Toni Taylor

Cantilever Oscillators for Chemical Vapor Sensors, Year 2, Michele Miller, Oklahoma State University; Lead CINT Scientist: John Sullivan

Nanoscale Lithography of Organic Thin Films Adsorbed on GaAs (001) and Au, Amy Walker, Washington University at St. Louis; Lead CINT Scientist: Julia Hsu

Magnetic Directed Assembly of Nanoscale Junctions for Electronic Measurements, James Kushmerick, National Institute of Standards and Technology; Lead CINT Scientist: Bruce Bunker

Photoexcitation Dynamics in Thin Organic Interfacial Layers, Matthew Lloyd, Sandia National Laboratories; Lead CINT Scientist: Julia Hsu

TED and B clustering: the role of the surface recombination studied by LEAP microscopy in B doped Si nanowires, Lucia Romano; Lead CINT Scientist: Tom Picraux

Characterization of Reactions between Metal and Semiconductor Nanowires and the Corresponding Electrical Properties, Jane Chang, University of California - Los Angeles; Lead CINT Scientist: Tom Picraux

Quantum Control of Energy Localization in Nanoparticulate Energetic Materials, David Moore, Los Alamos National Laboratory; Lead CINT Scientist: Anatoly Efimov

Non-intuitive nano-electronic device design, Stephan Haas, University of Southern California; Lead CINT Scientist: Alexander Balatsky

Carrier Dynamics and THz Detection with Composite Nanomaterials, Joshua Zide, University of Delaware; Lead CINT Scientist: Toni Taylor

Investigation of novel plasmonic and quantum Hall-effect THz photodetectors, Nikolai Kalugin, New Mexico Institute of Mining and Technology; Lead CINT Scientist: Aaron Gin

Growth of heterostructures for scanning gate microscopy of quantum dots, Brian LeRoy, University of Arizona; Lead CINT Scientist: John Reno

Protein labeling using water-soluble infrared PbSe quantum dots, Yinlan Ruan, University of Adelaide; Lead CINT Scientist: Jennifer Hollingsworth

Synthesis and Characterization of Individual Boron Nitride Nanostructures, Yoke Khin Yap, Michigan Technological University; Lead CINT Scientist: Jianyu Huang

Evaluating Molecular Trafficking within Cells Using Biofunctionalized Magnetic Nanoparticles, David Bear, University of New Mexico; Lead CINT Scientist: Dale Huber

Time-resolved THz spectroscopy in semiconductor quantum posts, Domini Steher, University of California - Santa Barbara; Lead CINT Scientist: Toni Taylor

Heat Generation and Dissipation in Nanoscale Materials, Sergei Shenogin, Rensselaer Polytechnic Institute; Lead CINT Scientist: Sergei Tretiak

BIOFILM DISRUPTION, Rashi Iyer, Los Alamos National Laboratory; Lead CINT Scientist: Peter Goodwin

Design principles of RNA-based molecular switches, Kevin Sanbonmatsu, Los Alamos National Laboratory; Lead CINT Scientist: Peter Goodwin

Spatially Resolved Ferromagnetic Resonance Studies in Continuous Media using Magnetic Resonance Force Microscopy, P. Chris Hammel, Ohio State University; Lead CINT Scientist: Roman Movshovich

Shocked Photonic Crystals: Frequency Conversion in a New Regime, Evan Reed, Lawrence Livermore National Laboratory; Lead CINT Scientist: Toni Taylor

Controlling electron-phonon coupling in semiconducting nanostructures, Jason Petta, Princeton University; Lead CINT Scientist: John Reno

Multiexciton dynamics and binding energies in type-II semiconductor nanocrystals, Marc Achermann, University of Massachusetts – Amherst; Lead CINT Scientist: Victor Klimov

Development of Multiple AFM Cantilevers for Tip-based Nanoassembly, Robert Westervelt, Harvard University; Lead CINT Scientist: John Sullivan

Nanoparticle Dispersion into Soft Condensed Phases, Sanat Kumar, Columbia University; Lead CINT Scientist: Gary Grest

Metamaterials for controlling the quantum vacuum, Diego Dalvit, Los Alamos National Laboratory; Lead CINT Scientist: Toni Taylor

Quantum Invisibility in Nanoassembled Structures, Jonas Fransson, Uppsala University; Lead CINT Scientist: Alexander Balatsky

Nanopatterning of pro-thrombotic recombinant adhesion molecules, Enrique Saldivar, La Jolla Bioengineering Institute; Lead CINT Scientist: Aaron Gin

High Pressure Ultrafast Spectroscopy of Metal-Insulator Transitions, David Hilton, University of Alabama – Birmingham; Lead CINT Scientist: Toni Taylor

Development of Metal Substrates with Reproducible and Reliable SERS Responses, Hsing-Lin Wang, Los Alamos National Laboratory; Lead CINT Scientist: Darrick Williams

Investigating the Potential of Rhenium Oxide as a New Plasmonic Material, Richard Averitt, Boston University; Lead CINT Scientist: Quanxi Jia

Modulating the Resonant Response of Metamaterials, Richard Averitt, Boston University; Lead CINT Scientist: Toni Taylor

Scanning Tunneling Microscopy Studies of a New Family of One-Dimensional Organic Nanostructures, Hongyou Fan, Sandia National Laboratories ; Lead CINT Scientist: Brian Swartzentruber

Physical and Optical Characterization of Thin-Films for Laser-Driven Shock Compression Experiments, Daniel Eakins, Los Alamos National Laboratory; Lead CINT Scientist: Peter Goodwin

Atomic-resolution in-situ transmission electron microscopy of nanomaterial nucleation and growth in a carbon nanotube reactor cell, Hongyou Fan, Sandia National Laboratories ; Lead CINT Scientist: Jianyu Huang

Magnetic field controlled Terahertz Quantum Cascade Lasers, Dmitry Smirnov, National High Magnetic Field Laboratory, Lead CINT Scientist: John Reno

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

Delivery of nanomaterials across the blood-brain barrier: Three-dimensional tracking of transcytosis, Christine Payne, Georgia Institute of Technology; Lead CINT Scientist: Jim Werner

Growth, Properties, and Integration of Nanowires and Nanowire Heterostructures, Shadi Dayeh, Los Alamos National Laboratory; Lead CINT Scientist: Tom Picraux

Modeling Hybrid Bilayer Nanoparticles, Scott Reed, Portland State University; Lead CINT Scientist: Amalie Frischknecht

Long-wavelength Terahertz Quantum Cascade Lasers for Applications in Imaging and Spectroscopy, Sushil Kumar, Massachusetts Institute of Technology; Lead CINT Scientist: John Reno

Photophysical properties of fluorescent metal nanoclusters: theory and simulations, Andrei Piryatinski, Los Alamos National Laboratory; Lead CINT Scientist: Sergei Tretiak

Investigation of virus-vector relationship through time-resolved scanning confocal microscopic analysis, James Ng, University of California – Riverside; Lead CINT Scientist: John Werner

Characterization of free-standing S-string-based electromagnetic metamaterials by THz time-domain spectroscopy, Mohammed Bahou, National University of Singapore; Lead CINT Scientist: Toni Taylor

Anomalous Fatigue Suppression in Nanocrystalline Alloys, Henry Padilla, University of Illinois - Urbana Champaign; Lead CINT Scientist: Sean Hearne

TEM study of interfaces in in-situ densified CNT-reinforced combustion synthesized materials, Lori Groven, South Dakota School of Mines and Technology; Lead CINT Scientist: Jianyu Huang

Charge Mobility in Organic Polymers, Enrique Batista, Los Alamos National Laboratory; Lead CINT Scientist: Darryl Smith

Interfacial Chemistry for Magnetic Nanomanipulation of DNA and Protein-DNA Complexes, University of Texas – Dallas, Stephen Lavene, Lead CINT Scientist: Jennifer Martinez

SEM-nanoprobe measurements of biological cells integrated into solid-state platforms, Bryan Kaehr, Sandia National Laboratories; Lead CINT Scientist: Brian Swartzentruber

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

Nano-scale Characterization of Stable Salt-Induced Protein Aggregates, Gina MacDonald, James Madison University; Lead CINT Scientist: Jennifer Martinez

Investigating optical response from plasmonic nanostructures as SERS substrates, Peng Zhang, New Mexico Institute of Mining and Technology; Lead CINT Scientist: S.Ting "Willie" Luk

Guided-wave Terahertz Metamaterials, Rajind Mendis, Rice University; Lead CINT Scientist: Toni Taylor

Quantum Charge and spin pump in strongly correlated one-dimensional GaAs Nanosystems, Jian Huang, Taylor University; Lead CINT Scientist: John Reno

Enhancement of Exciton Formation and Dissociation in Organic Solar Cells, Bruce Alphenaar, University of Louisville; Lead CINT Scientist: Sergei Tretiak

Clustering of Cell Membrane Receptors by Supported Lipid Bilayers, James Thomas, University of New Mexico; Lead CINT Scientist: Andrew Dattelbaum

Advanced Hot-Electron Nanobolometers for Infrared Detection and Photon Counting, Boris Karasik, Jet Propulsion Laboratory; Lead CINT Scientist: Aaron Gin

Terahertz Focusing by a Gradient Index Metamaterial Lens, Wolfgang Rudolph, University of New Mexico; Lead CINT Scientist: Toni Taylor

Controllable spatial terahertz modulator for imaging based on compressed sensing, Daniel Mittleman, Rice University; Lead CINT Scientist: Toni Taylor

Local Spectroscopy of Heavy Fermion Materials: Uncovering the Nature of Hidden and Exposed Orders in a Kondo Lattice., Seamus Davis, Cornell University; Lead CINT Scientist: Alexander Balatsky

Evaluation of Red and Near-Infrared Quantum Dot Labels for Spectrally Extended Flow Cytometry, William Lawrence, Radiation Monitoring Devices, Inc; Lead CINT Scientist: Jennifer Hollingsworth

Non-blinking Quantum Dots for Single Particle Tracking, Diane Lidke, University of New Mexico; Lead CINT Scientist: Jennifer Hollingsworth

Designing a Microfluidic Membrane Laboratory, Yonggang Zhu, Designing a Microfluidic Membrane Laboratory; Lead CINT Scientist: Bruce Bunker

Growth and characterization of GaSb based quantum dots for solar cell applications, University of New Mexico, Diana Huffaker, University of New Mexico; Lead CINT Scientist: Victor Kilmov

The Quantum Hall Effect as an Undergraduate Laboratory Experiment, Scott Paulson, James Madison University; Lead CINT Scientist: John Reno

Silver Nanowire Based Surface Enhanced Raman Substrates, Hsing-Lin Wang, Los Alamos National Laboratory; Lead CINT Scientist: Han Htoon

Plasmon-exciton interactions in Au nanoshell-semiconductor nanocrystal complexes, Naomi Halas, Rice University; Lead CINT Scientist: Jennifer Hollingsworth

Single Molecule Spectroscopy and Microscopy of Semiconductor Quantum Dot Clusters, Alan Van Orden, Colorado State University; Lead CINT Scientist: Peter Goodwin

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: Nathan Mara

Photonic Crystal Solid: Making Photonic Lattices with NanoCrystal Materials, Katherine Bogart, Sandia National Laboratories; Lead CINT Scientist: S.Ting "Willie" Luk

Nonlinear Phenomena in Metamaterials, Sergei Tochitsky, University of California - Los Angeles; Lead CINT Scientist: Toni Taylor

Raman Characterization of Single-Walled Carbon Nanotube (SWNT) Arrays, Peter Burke, University of California – Irvine; Lead CINT Scientist: Han Htoon

Kinetics of Motor Protein Motility on Microtubules via Single Particle Tracking, Darryl Sasaki, Sandia National Laboratories; Lead CINT Scientist: George Bachand

Long-Wave Infrared (10 micrometer) Negative Index Materials, Steven Brueck, University of New Mexico; Lead CINT Scientist: Igal Brener

Deformation of bilayer lipid membranes under complex loading: modeling and experiments, Dierk Raabe, Max Planck Institute; Lead CINT Scientist: Mark Stevens

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

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

Development of plasmonic and polaritonic metamaterials in the mid-infrared spectral range based on selectively doped semiconductor multilayers, Gennady Shvets, University of Texas – Austin; Lead CINT Scientist: Igal Brener

In-situ TEM investigation: deformation of nanocomposites and nanofoams, Nathan Mara, Los Alamos National Laboratory; Lead CINT Scientist: Jianyu Huang

A Test Bed for Space Flight Mechanics Enabled by Nanoscale Electronics, Mechanics & Systems Principles, Mason Peck, Cornell University; Lead CINT Scientist: Sean Hearne

Field distributions in metamaterials: From fundamental physics towards applications, Roland Kersting, Ludwig-Maximilians - Universtat Munich Amalienstr; Lead CINT Scientist: Toni Taylor

Transport studies of electron-hole bilayers in the exciton condensation regime, Christian Morath, Sandia National Laboratories; Lead CINT Scientist: Michael Lilly

Controlling electron and phonon interactions in grapheme, Michael Crommie, University of California – Berkeley; Lead CINT Scientist: Alexander Balatsky

Controlling the Kondo Effect in Graphene, Hari Manoharan, Stanford University; Lead CINT Scientist: Alexander Balatsky

Mid-Infrared Beam Steering with Plasmonic Structures, Daniel Wasserman, University of Massachusetts – Lowell; Lead CINT Scientist: Sean Hearne

Photoinduced Charge Transfer between Conducting Polymer and Quantum Dots, John Ferraris, University of Texas – Dallas; Lead CINT Scientist: Victor Klimov

III-V Nanopillar Array Development for Photonic and Electronic Applications, Diana Huffaker, University of New Mexico; Lead CINT Scientist: Aaron Gin

High Saturation Magnetization Nanocomposite Particles for Biodetection, Victor Esch, nanoMR; Lead CINT Scientist: Dale Huber

Multiexciton Dynamics and Carrier Multiplication in Highly Luminescent Si Nanocrystals, Multiexciton, Kortshagen Uwe, University of Minnesota; Lead CINT Scientist: Victor Klimov

Scanning probe Characterization of Chemically Patterned Addressable Surfaces at the Nano-Bio Interface, Ronen Polsky, Sandia National Laboratories ; Lead CINT Scientist: Gabriel Montano

Real space imaging of the vortex lattice in CeCoIn₅, Andrea Bianchi, Universite de Montreal, Lead CINT Scientist: Roman Movshovich

Minority carrier lifetimes in silicon nanowires, Mark Reed, Yale University, Lead CINT Scientist: Tom Picraux

Analytical TEM Investigations of GaN-based III-V Semiconductor Superstructures, Jian-Guo Zheng, University of California – Irvine; Lead CINT Scientist: Jianyu Huang

Development of Measurement Methods for Determining the Blocking Temperature of Nanoparticle Systems, Cindi Dennis, National Institute of Standards and Technology; Lead CINT Scientist: Dale Huber

Understanding Charge Separation and Transfer at Interfaces in Energy Materials, Paul Barbara, University of Texas – Austin; Lead CINT Scientist: Julia Hsu

Determination of the factors controlling the mechanical stability of free-standing nanograined FCC films by in situ TEM investigation using a MEMS-based tensile platform, Khalid Hatter, University of Illinois - Urbana Champaign; Lead CINT Scientist: Sean Hearne

Nanomanipulator and AFM studies of resistive switching in Ag/TiO₂ thin films, Tito Busani, New Mexico Institute of Mining and Technology; Lead CINT Scientist: Brian Swartzentruber

Computational study of supercapacitors based on carbon nanotube forests, Lu Yang, Los Alamos National Laboratory; Lead CINT Scientist: Sergei Tretiak

Investigation of the electron and nuclear spin dynamics in semiconductor nanocrystals, Carlos Meriles, City College of New York; Lead CINT Scientist: Sergei Ivanov

AFM and STM measurements of the growth morphology of graphene thin films, Taisuke Ohta, Sandia National Laboratories ; Lead CINT Scientist: Brian Swartzentruber