

2006 ACCEPTED CINT USER PROPOSALS

Directed Sequential Assembly of DNA Nanostructures, Michael L. Norton;
CINT Scientist (s): Aaron Gin.

Excitonic Condensation in Double Quantum Wells, Yogesh N. Joglekar, Indiana University – Purdue University; CINT Scientist (s): Alexander Balatsky.

Transport in Self-Assembled Charged Polymer Hydrogels, Murat Guvendiren; Northwestern University, IL; CINT Scientist (s):

Effect of Nanoparticle Surface Segregation on Polymer Film Dewetting; Michael E. Mackay, Michigan State University;
CINT Scientist (s): Amalie Frischknecht.

Spectroscopy of Double-Walled Carbon Nanotubes, Junichiro Kono, Rice University, TX;
CINT Scientist (s): Han Htoon.

Development of a Novel MEMS Sensor for Hydrogen Absorption/Desorption Control in Molecular Materials, Juan C. Noveron, University of Texas at El Paso, TX;
CINT Scientist (s): John Sullivan

Terahertz Quantum Cascade Lasers for Security and Military Applications, Qing Hu, Massachusetts of Technology, MA; CINT Scientist (s): John Reno.

Directed Growth of Si-Alloy Nanostructures on Amorphous Surfaces, John G. Ekerdt;
CINT Scientist (s): Elshan Akhadov.

Understanding Carrier Dynamics in a Novel Nanoscale System: Heterostructure, Sanjay Krishna, University of New Mexico; CINT Scientist (s): Rick Averitt.

Advanced Imaging and Spectroscopy of Membrane Heterogeneity and Dynamics, Atul Parikh, University of California at Davis; CINT Scientist (s): Gabriel Montano.

Martix-Seeded Growth of Narrow Gap Nitride Semiconductor Nanostructures, Rachel S. Goldman, University of Michigan; CINT Scientist (s): Mike Nastasi.

Nonlinear Optics in Photonic Crystal Fibers in the Mid-Infrared, Jonathan Knight, University of Bath, United Kingdom; CINT Scientist (s): Anatoly Efimov.

Quantum Confinement and Strain Effects in Photonic Nanocrystals, Don A. Lucca, Oklahoma State University; CINT Scientist (s): Mike Nastasi.

Terahertz Spectroscopy of Single-Walled Carbon Nanotubes, Robert C. Haddon, University of California at Riverside; CINT Scientist (s): Toni Taylor.

Characterization of Lipid Bilayers Supported on Nanotextured Surfaces,
Gabriel P. Lopez, University of New Mexico; CINT Scientist (s); Gabriel Montano.

Broadband Near-field Interference Spectroscopy of Flat Gold Nanoparticles,
Lloyd A. Bumm, Los Alamos National Laboratory, NM;
CINT Scientist (s): Victor Klimov.

Optical Transduction Using Nanoscale Colloidal Photonic Crystals for Specific Biomolecular Recognition, Atul Parikh, University of California at Davis;
CINT Scientist (s): Gabriel Montano.

Design of a Fluorescent Glucose Sensor, Jonathan D. Dattelbaum, University of Richmond, VA; CINT Scientist (s); Dattelbaum.

Role of Layer-Interfaces and Grain Boundaries on the Properties of Nano-structured Nitride Thin Films, Haiyan Wang, Texas A & M; CINT Scientist (s): Quanxi Jia.

Tunneling Transport and Strain Relaxation in SiGe and Ge Nanowires,
Alex Zaslavsky, Brown University, RI; CINT Scientist (s): Tom Picraux.

Doped SiGe Nanowires for Functional Nanodevices, Stephen M. Goodnick,
Arizona State University; CINT Scientist (s); Elshan Akhadov.

Supramolecular Photosynthetic Protein Organization in Biomimetic Multilamellar Assemblies, Robert Blankenship, Arizona State University;
CINT Scientist (s); Dattelbaum.

Shape-Controlled Type-II Quantum Dots Synthesized by Crystalline Face-Recognition Peptides, Hiroshi Matsui, Hunter College, NY; CINT Scientist (s); Jennifer Martinez.

Two-Photon Absorption Properties of Extended and Coupled Chromophore Systems,
Joseph W. Perry, Georgia Institute of Technology; CINT Scientist (s); Sergei Tretiak.

Ultra-Efficient Energy Transfer in Single Polymeric Light-Harvesting Complexes,
John M. Lupton, University of Utah; CINT Scientist (s); Sergei Tretiak.

Synthesis and Mechanical Behavior of Metallic Thin Films with Nanoscale Growth Twins, Xinghang Zhang, Texas A & M University; CINT Scientist (s); Amit Misra.

Fabrication of High Energy Storage Density Nanoscale Capacitors, Richard Riman,
Rutgers University, NJ; CINT Scientist (s); Elshan Akhadov.

Ultrafast Nonlinear-Optical Properties of All-Solid Photonic Crystal Fibers,
Dmitry Skryabin, University of Bath, United Kingdom;
CINT Scientist (s); Anatoly Efimov.

Optical Components Using Left-Handed Plasmonic Waveguides, Amr Helmy, University of Toronto, Canada; CINT Scientist (s); Rohib Prasankumar.

Nonlinear Optical Spectroscopy of Nanocrystal Quantum Dots in Photonic Crystal Cavities, Weidong Zhou, University of Texas at Arlington; CINT Scientist (s); Victor Klimov.

Time Resolved Optical Spectroscopy of (In) GaAs/(GaAs and InAs/InP Quantum Dots-in-a-Well Structures, Chennupati Jagadish, Australia National University, Australia; CINT Scientist (s); Rohib Prasankumar.

Ultrafast Dynamics in Pentacene Single Crystals and Film, Verner K. Thorsmolle, Ecole Polytechnique Federal de Lausanne, Switzerland; CINT Scientist (s); Rick Averitt.

Supramolecular Nanophotonics: A Concerted Experimental and Theoretical Approach, Mireille Blanchard-Desce, CNRS (Centre National de la Recherche Scientifique), France; CINT Scientist (s); Sergei Ivanov.

Strain Engineered Nanowire Heterostructures, Jeff Drucker, Arizona State University; CINT Scientist (s); Tom Picraux.

Atomic Scale Imaging of Dopants in Si and Si/Ge Nanostructures, Emmanuelle Marquis, Sandia National Laboratories, CA; CINT Scientist (s); Tom Picraux.

Optical and Terahertz Characterization of Epitaxially-Grown Semimetal/Semiconductor Nanocomposites (renewal), Joshua M. O. Zide, University of California at Santa Barbara; CINT Scientist (s); Rick Averitt.

Energy Transfer in Metal-Semiconductor Quantum Dot Nanoparticles, Mark Stockman, Georgia State University; CINT Scientist (s); Sergei Ivananov.

Electromagnetic Response of Broken-Symmetry Nano-Scale Clusters, Stephen Haas, University of Southern California; CINT Scientist (s); Alexander Balatsky.

Bionanofabrication of Si Nanowire Array Using Bacterial Surface Layer Protein/Nanoparticle Templates, Carl Batt, Cornell University, NY; CINT Scientist (s); Gabriel Montano.

Integrated Silicon Nanowire Biodelectors, Mark Reed, Yale University, CT; CINT Scientist (s); Jennifer Martinez.

Ordered Nanocomposite Silica Films for Oxygen Sensing, Frank V. Bright, University of Buffalo, The State University of New York; CINT Scientist (s); Andrew Dattlebaum.

NiTi-TiC Nano-Layers: Investigating Shape-Memory Behavior at Reduced Length Scales, Raj Vaidyanathan, University of Central Florida; CINT Scientist (s): Ammit Misra.

Discovering Novel Functional DNA-Condensates for Effective Gene-Vaccines: Metal-Directed Lyotropic Gene Capsules at the Nano-and Meso-Scales, Juan C. Noveron, University of Texas at El Paso; CINT Scientist (s): Gabriel Montano.

Carrier Dynamics in a Type-II InAs/GaSb Nanoscale Superlattice Sensors, Sanjay Krishna, University of New Mexico; CINT Scientist (s): Robit Prasankumar.

Dynamics of Excitons and Polarons in Low Dimensional and Mesoscopic Devices, Holger Fehske, Ernst-Moritz-Arndt Universitaet Griefswald, Germany; CINT Scientist (s): Rick Averitt.

Investigating Luminescence Mechanism of Er-Doped SiNx Film Containing a Si Nanocrystal for Light Sources, Gun Yong Sung, Electronics and Telecommunications Research Institute, South Korea; CINT Scientist (s): Mike Nastasi.

Exploring the Effect of V Group Element Implantation on Electrical and Optical Properties of ZnO Thin Film and Zno Nanostructures, Sang Yeol Lee, Tonsei University, South Korea; CINT Scientist (s): Mike Nastasi.

The Effects of Aggregation on the Electronic Properties of Oligomers Designed for Organic LED's, Linda Peteanu, Carnegie Mellon University, PA; CINT Scientist (s): Andrew Shreve.

Sel Assembly of 3D-Ordered Metallic Nanoparticles in Transparent Conducting Oxide Arrays, Terry L. Alford, Arizona State University; CINT Scientist (s): Mike Nastasi.

Experimental Investigations of Lumped Nanocircuit Elements at Optical Frequencies, Nader Engheta, University of Pennsylvania; CINT Scientist (s): Rick Averitt.

Electrical Conductive and Mechanical Behavior of MoO3 Nanostructures as a Function of Temperature for Gas Sensing, Francisco Paraguay-Delgado, Centro de Investigacion en Materiales, Chihuahua, Mexico; CINT Scientist (s): Elshan Akhadov.

Micron-Scale Pillars to Study Mechanical Strength and Internal Deformation in Nanoscale Metallic Multilayer Thin Films, Peter Anderson, Ohio State University; CINT Scientist (s): Amit Misra.

Design and Engineering of Optical Nanomaterials Based on Organic Branched Structures, Vladimir Y. Chernyak, Wayne State University, MI; CINT Scientist (s): Sergei Tretiak.

Photophysics of Luminescence Sensors at the Nanolevel, James Demas, University of Virginia; CINT Scientist (s): Peter Goodwin.

Capacitive Control of Spin in Nanoparticles and Quantum Dots, Leonid Levitov, Massachusetts Institute of Technology; CINT Scientist (s): Alexander Balatsky.

Measurements of the Near-Field and Ultra-Fast Dynamics of QDs Embedded in a Nanoscale Microcavity Electromagnetic Environment for Quantum Information Science Applications, Oskar Painter, California Institute of Technology; CINT Scientist (s): Robit Prasankumar.

Synthesis and Characterization of Bifunctional Magnetic-Metal/Semiconductor Core/Shell Nanocomposites, Evagelia Moshopoulou, National Center for Scientific Research, Greece; CINT Scientist (s): Sergei Ivanov.

Nanoscale Inhomogeneity in Correlated Electronic Systems, Thomas Devereaux, University of Waterloo, Ontario, Canada; CINT Scientist (s): Alexander Balatsky.

Characterization of the Photoluminescence Spectra and Charge Dynamics within Single CdSe Quantum Wires at Low Temperature, Richard A. Loomis, Washington University, MO; CINT Scientist (s): Jennifer Hollingsworth.

Time-Domain Atomistic Simulation of Quantization Effects on the Relaxation Dynamics of the Photogenerated Carriers in Quantum Dots, Oleg Prezhdo, University of Washington, WA; CINT Scientist (s): Victor Klimov.

Sequence Dependent Fluorescence from DNA-Encapsulated Silver Nanoclusters, Jeff Petty, Furman University, SC; CINT Scientist (s): Peter Goodwin.

Nanoscale Texturing in Ferromagnetic Superconductors, Jose Matutes-Aquino, Centro de Investigacion en Materiales, Chihuahua, Mexico; CINT Scientist (s): Rick Averitt.

Indirect Excitation of Multi-Photon Up-Conversion Using Quantum Dots, Dale Spall, Authenix, Inc., NE; CINT Scientist (s): Jennifer Hollingsworth.

Dynamical and Spectroscopic Signatures of Carrier Multiplication in Semiconductor Quantum Dots, Diana Huffaker, University of New Mexico; CINT Scientist (s): Victor Klimov.

Characterization and Manipulation of Interactions at the Bio-Nano Interface, Gnana Gnanakaran, Los Alamos National Laboratories, NM; CINT Scientist (s): Jennifer Martinez.

Ionic Liquid-Embedded Nanocomposite Luminescent Sensors, Gary Baker, Oak Ridge National Laboratories, TN; CINT Scientist (s): Andrew Dattlebaum.

Nanoscale Ordering in Heavy Electrons Probed by Ultrafast Optics, Jure Demsar, Jozef Stefan Institute, Slovenia; CINT Scientist (s): Rick Averitt.

Understanding the Surface Interfacial Properties of Silicon Nanowires: Electrical Contacts and Chemicals Functionalization, Larry Nagahara, Motorola, Inc., CA; CINT Scientist (s): Tom Picraux.

Size, Shape and Well Depth Dependence of Zero-Mode Waveguides as Solid Supports for Lipid Bilayers Films, James A. Brozik, University of New Mexico; CINT Scientist (s): Elshan Akhadov.

Investigating Teomere Structure and Function byt Atomic Force Microscopy and Fluorescence Microscopy, Edwin Goodwin, Los Alamos National Laboratories, NM; CINT Scientist (s): Peter Goodwin.

Nanostructures in Copolymer Materials: Synthesizing a Predictive Model from Experimental 3-D Imaging, Richard Spontak, North Carolina State University; CINT Scientist (s): Alexander Balatsky.

Computational Study of Electronic and Optical Properties of Nanoscale Core-Shell Structures, Igor V. Vasiliev, University of New Mexico; CINT Scientist (s): Sergei Ivanov.

Biological Effects of Nanostructured Materials on Cultured Human Cells, Elba Serrano, University of New Mexico; CINT Scientist (s): Jennifer Hollingsworth.

Combined Optical and Transport Study of Single Semiconductor Nanowire Field Effect Transistors, Hongbin Yu, Arizona State University; CINT Scientist (s): Han Htoon.

Spin-Dependent Transport & Many-Body Interactions in Coupled Quantum Wires, Jonathan P. Bird, University of Buffalo – The State University of New York; CINT Scientist (s): Mike Lilly.

Assembling Single-Walled Carbon Nanotubes Using Kinesin Based Molecular Motors, Robert C. Haddon, University of California at Riverside; CINT Scientist (s):George Bachand.

Probing Molecular Junctions at the Nanoscale with Ballistic Electrons, Karen L. Kavanagh, Simon Fraser University, British Columbia, Canada; CINT Scientist (s): Julia Hsu.

Direct Correlation of the Macroscopic Mechanical Properties with the Deformation Mechanisms in Nanograined Metallic Systems, Ian Robertson, University of Illinois at Urbana-Champaign; CINT Scientist: David Follstaedt.

Multi-Scale Modeling of Nanostructured Protein Hydrogels, James L. Harden;
CINT Scientist (s): Gary Grest.

Interactions of Biological Lipid Membranes with Inorganic Solids: Building a Foundation for the Man-Machine Interface, Jan H. Hoh, Johns Hopkins University, MD.;
CINT Scientist (s): Mark Stevens.

Density Functional Theory for the Many-Body Interaction Between Nano-Particles in Complex Fluids, Arun Yethiraj, University of California at Davis;
CINT Scientist (s): Amalie Frischknecht.

Characterization and Synthesis of Superparamagnetic Nanoparticles for Biomagnetic Imaging, Edward Flynn, Senior Scientific, NM; CINT Scientist (s): George Bachand.

Elasto-Dynamical Modeling of Collisions Between Cargo-Carrying Biomolecular Shuttles, Alan A. Barhorst, Texas Tech University; CINT Scientist (s): George Bachand.

Complaint Electrodes: Transport Phenomina in Carbon-Nanotube-Elastomer Nanocomposites, Richard Vaia, Air Force Research Laboratory, NM;
CINT Scientist (s): Julia Hsu.

Quantum Electronics in GaAs/A/GaAs by Means of Resistive NMR and Scanned Probe Imaging, Guillaume Gervais, McGill University, Quebec, Canada;
CINT Scientist (s): Mike Lilly.

Tunneling Transport and Strain Relaxation in SiGe and Ge Nanowires, Alex Zaslavsky, Brown University, RI; CINT Scientist (s): Normand Modine.

Engineering Thermostable Motor Proteins for Nanotechnology Application, Andrew K. Boal, University of Hawaii; CINT Scientist (s): George Bachand.

Application of the Nanoparticle Synthesis Discovery Platform to Magnetic Nanoparticle Synthesis, J. Ping Liu, University of Texas at Arlington; CINT Scientist (s): Nelson Bell.

Integration of the Socorro Code into the NNIN/C Code Base and Application to DNA Nanowires and Heavily Doped Semiconductors, Efthimios Kaxiras, Harvard University, MA; CINT Scientist (s): Normand Modine.

Modelling Three Dimensional Structure of Actin with Charged Membranes, Monica Olvera de la Cruz, Northwestern University, IL;
CINT Scientist (s): Mark Stevens.

Nanoscale Multilayer Approach Toward Realizing Negative Refraction, Yalin Lu, United States Air Force Academy, CO; CINT Scientist (s): Dale Huber.

ZnO-Polymer Nanocomposite Piezo-Electrics, Richard Vaia, Air Force Research Laboratory, NM; CINT Scientist (s): Nelson Bell.

Scanning Tunneling Microscopy Studies of a New Family of Mesoporous Carbon Nanotubes (MCNTs): Hongyou Fan; CINT Scientist (s): Brian Swartzentruber.

High-Mobility 2D Electron Samples for Studies of the Microwave-Induced Zero-Resistance States, Rui-Rui Du, Rice University, TN.; CINT Scientist (s): Mike Lilly.

Novel Low-Voltage Coupled Electrical-Nanomechanical Resonators, Daniel Sheehan, University of San Diego, CA; CINT Scientist (s): John Sullivan.

A MEMS-Based “Loadfram-On-A-Chip” for Observing Nanomechanical Behavior: David C. Miller; CINT Scientist (s): Amalie Follstaedt.

Evaluating Whether GeSi Quantum Dot Molecules Can Behave as Quantum Cellular Automata, Jerrold Floro, Sandia National Labs, NM; CINT Scientist (s): Elshan Akhadov.

Growth Mechanisms of Anisotropic Metal Nanoparticles, Catherine Murphy, University of South Carolina; CINT Scientist (s): Bruce Bunker.

Electromigration and Co Films on Cu, James B. Hannon, IBM T. J. Watson Research Center, NY; CINT Scientist (s): Kellogg.

Micron-Sized Polymer Gel Device to Induce Directed Motion on Small Scales, Ulrich Wiesner, Cornell University, NY; CINT Scientist (s): Dale Huber.

Scanning Probe Characterization and Manipulation of Phosphorus-Doped Silicon Nanocrystal, Malcolm S. Carroll; CINT Scientist (s): Brian Swartzentruber.

Incorporation of Semiconductor Nanocrystals into Photoconductive and Photorefractive Polymeric Composites for Purposes of Photosensitization, Jeffery G. Winiarz, University of Missouri-Rolla, MO; CINT Scientist (s): Dale Huber.

Fundamental Studies of the Electromechanical Behavior of a NEMS Two-State Switch: Horacio Espinosa; CINT Scientist (s): John Sullivan.

CADP for Magnetic Cantilever Calibration, Daniel Cole, Duke University, NC; CINT Scientist (s): Koch.

Development of Reproducible Two-Terminal Molecular Devices for Hybrid CMOS/Nanodevice Integrated Circuits, Konstantin Likharev, State University of New York at Stony Brook; CINT Scientist (s): Dale Huber.

Self-Assembly of Epitaxial Silver Nanowires on Cu (110), Phillip Sprunger, Louisiana State University; CINT Scientist (s): Kellogg

Interfacial Effects of Nanometer Fluorinated Segments on Energy Controlled Responsive Polymeric Films, Dvora Perahia; CINT Scientist (s): Gary Grest.

Microwave Spectroscopy of Magnetically Confined Wires and Dots in 2D Electron Systems Decorated with Ferromagnets, Lloyd W. Engel, Florida State University; CINT Scientist (s): Mike Lilly.

Coupled Vibrations and Parametric Resonances of Microcantilevers with Applications to Novel Sensors and Atomic Force Microscopy, Arvind Raman, Purdue University, IN.; CINT Scientist (s): John Sullivan.

Nano-Scale Wear of Tetrahedral Amorphous Carbon Using Scanning Probe Microscopy and X-Ray Spectromicroscopy, Robert W. Carpick, University of Wisconsin at Madison; CINT Scientist (s): John Sullivan.

Measuring Single Electrons on the Surface of Liquid Helium, Stephen A. Lyon, Princeton University, NJ; CINT Scientist (s): Mike Lilly.

CINT Nano/Biophysics Expertise and Platforms for Single-Molecule Eukaryotic Transcription Studies, Karen Adelman; CINT Scientist (s): John Sullivan.

Resonant Magnetotransport Phenomena in 2D Semiconductor Structures, Michael A. Zudov, University of Minnesota; CINT Scientist (s): Mike Lilly.

STM Investigation of Functionalized Carbon Nanotubes, James B. Hannon, IBM T. J. Watson Research Center, NY; CINT Scientist (s): Brian Swartzentruber.

Nanomechanical Characterization of Bioactive TiO₂ Nanotubes on a Titanium Substrate, Nik Chawla, Arizona State University; CINT Scientist (s): Houston.

Direct Writing of Nanophotonic Structures in Self-Organized Photonic Crystals, Paul V. Braun, University of Illinois at Urbana-Champaign; CINT Scientist (s): Nelson Bell.

Ab Initio simulated STM Images for Compound Semiconductor Alloys, Joanna Millunchick, University of Michigan; CINT Scientist (s): Normand Modine.

Characterization of Surface Band and Structure of Germanium Nanorings Using Scanning Tunneling Microscopy: Path to Non-Planar Positioning of Active Germanium Nanostructures on Silicon Using Highly Selective Molecular Beam Epitaxy, Sang M. Han, University of New Mexico; CINT Scientist (s): Brian Swartzentruber.

Directed Sequential Assembly of DNA Nanostructures, Michael L. Norton;
CINT Scientist (s): Matzke

A High-Production-Yield Single-Photon Source, Kevin D. Osborn;
CINT Scientist (s): Elshan Akhodov.

*Nanoscale Biology-Uncovering Fundamental Membrane Protein Motion: Serotonin
5HT3 Receptor, James A. Brozik, University of New Mexico;*
CINT Scientist (s): George Bachand.

*Interfacial Force Microscopy Studies of the Interaction of Fluids With Optically-
Modifiable Nanostructured Surfaces, Devens Gust, Arizona State University;*
CINT Scientist (s): Jack Houston.

*Biom mineralization and Nanostructured Biopolymer Interfaces, Robert J. Asaro,
University of California at San Diego; CINT Scientist (s): Hawley.*