

# Center for Integrated Nanotechnologies

Sandia National Laboratories • Los Alamos National Laboratory



## Department of Energy / Office of Science / Nanoscale Science Research Centers

Center for Nanoscale Materials / Argonne National Laboratory • Center for Functional Nanomaterials / Brookhaven National Laboratory  
The Molecular Foundry / Lawrence Berkeley National Laboratory • Center for Nanophase Materials Sciences / Oak Ridge National Laboratory  
Center for Integrated Nanotechnologies / Sandia National Laboratories and Los Alamos National Laboratory



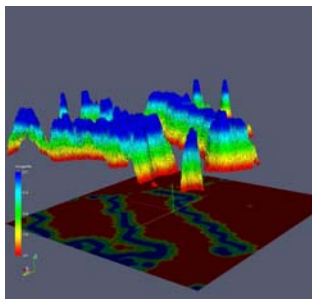
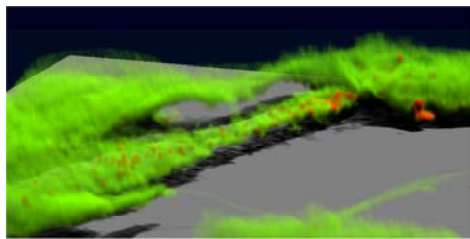
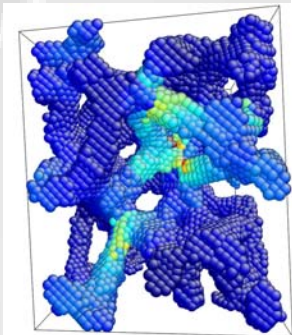
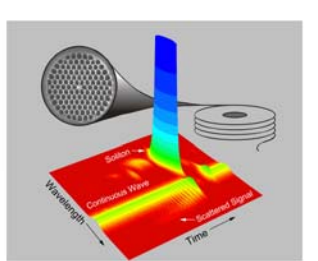
### The Center for Integrated Nanotechnologies

CINT is a Department of Energy/Office of Science Nanoscale Science Research Center operating as a national user facility devoted to establishing the scientific principles that govern the design, performance, and integration of nanoscale materials. Through its Core Facility and Gateways to both Los Alamos and Sandia National Laboratories, CINT provides access to tools and expertise to explore the continuum from scientific discovery to the integration of nanostructures into the micro and macro worlds.

### Scientific Thrusts

To address the national grand challenges of nanoscience and technology, CINT supports four scientific thrusts that serve as synergistic building blocks for integration research available to the user community:

- Nanophotonics & Optical Nanomaterials - Synthesis, excitation and energy transformations of optically active nanomaterials and collective or emergent electromagnetic phenomena (plasmonics, metamaterials, photonic lattices).
- Nanoscale Electronics and Mechanics- Control of electronic transport and wavefunctions, and mechanical coupling and properties using nanomaterials and integrated nanosystems.
- Soft, Biological & Composite Nanomaterials - Solution-based materials synthesis and assembly of soft, composite and artificial bio-mimetic nanosystems.
- Theory & Simulation of Nanoscale Phenomena - Assembly, interfacial interactions, and emergent properties of nanoscale systems, including their electronic, magnetic, and optical properties.



*"One scientific community focused on nanoscience integration"*

## Facilities and Capabilities

The CINT community can access dedicated research capabilities in the Core Facility (Albuquerque) and the Gateway to Los Alamos (Los Alamos). Together, these facilities provide laboratory and office space for researchers to synthesize and characterize nanostructured materials, theoretically model and simulate their performance, and integrate nanoscale materials into larger-scale systems in a flexible, clean-room environment.

Unique to CINT are Discovery Platforms™, modular, micro-laboratories designed and batch fabricated expressly for the purpose of integrating nano and micro length scales and for studying the physical and chemical properties of nanoscale materials and devices.

CINT researchers also have access to selected Los Alamos and Sandia capabilities in biosciences, microelectronics, nanofabrication and computing on a limited basis. Joint proposals involving other national user facilities at both locations, including the Los Alamos Neutron Science Center and the National High Magnetic Field Laboratory, are encouraged.

## User Program

CINT operates as a national user facility providing access to state-of-the-art facilities staffed by laboratory scientists, post-doctoral fellows and technical support personnel who are leaders in the CINT scientific thrust areas. Access is via peer-reviewed technical proposals, for independent or collaborative research, submitted in response to semi-annual Calls for User Proposals. Pre-competitive research that will be published in the open literature can be approved for no-fee access to CINT. Proprietary research may be conducted in accord with Federal regulations for full-cost recovery. CINT cannot provide funding to users.

Information regarding the next Calls for User Proposals and instructions for proposal submission are available on the CINT web site: <http://cint.lanl.gov>.

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*CINT Core Facility*



*CINT Gateway to Los Alamos*



*A Collaborative Research Environment*

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## On the web

<http://cint.lanl.gov>  
<http://cint.sandia.gov>

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