

Call for User Proposals

Center for Integrated Nanotechnologies 2003 Jump-Start User Program

The Center for Integrated Nanotechnologies (CINT) is a Department of Energy Office of Science sponsored Nanoscale Science Research Center (NSRC), and is jointly operated by Los Alamos and Sandia National Laboratories. As one of the DOE NSRC's, CINT will provide user access to state-of-the-art equipment, facilities and personnel for nanoscale science and engineering research. Although CINT is not expected to be fully operational until 2006, a limited operational phase is being initiated immediately. During the jump-start phase, equipment, facilities and personnel of the two sponsoring laboratories are being made available, at not cost, for external users through a proposal submission and peer review process.

User Facilities - Under the jump-start program, the CINT user community will have access to tools and capabilities that support CINT's overall focus on nanoscience integration. Fabrication and synthesis capabilities will allow the user to build and combine synthetic and biological materials and structures across nano to micro length scales. These capabilities include optical and E-beam lithography, patterned semiconductor, oxide and metal deposition and etch, MEMS, μ fluidics, and photonic lattice fabrication, self-assembled meso-porous silica, self-assembled monolayer and LB films, semiconductor and metal quantum dots, and protein synthesis. The set of available characterization tools at jump-start include neutron adsorption and reflectivity at LANSCE, short-pulse and high magnetic field studies at NHMFL, low-temperature optical and electronic transport measurements, time-resolved optical spectroscopy and microscopy, scanning probe microscopy (AFM, STM, NSOM), and nanoindentation. Users can also apply for access to computer workstations and expertise in modeling that spans first-principles to continuum modeling approaches.

Science Focus - Preference will be given to proposals that will utilize CINT resources to address the following challenges in nanoscience integration:

- (1) The integration of top-down fabrication with bottom-up assembly to create new classes of functional materials;
- (2) The control of optical and electronic energy transfer and charge transport coupled across multiple length scales;
- (3) The coupling of mechanical forces across nano, micro and larger scales, including the control of fluidic transport;
- (4) The integration of biological and synthetic materials and control of the interface between biological and non-biological components.

General Users – The external scientific community is invited to apply for open, no cost, access to CINT capabilities. Specific instructions for applicants, description of available resources, and key technical contacts are available on the CINT website. Proposals may request either short-term (few days) to long-term (weeks to months) access to CINT

resources. Collaborations with Sandia and/or Los Alamos scientists and technical experts are encouraged. A separate process will consider proposals for proprietary use of CINT resources for which full cost recovery according to standard DOE regulations is required.

Education and Training – Fellowships will be available for students and young scientists to enhance their opportunities to work within the multi-disciplinary CINT environment on approved General User projects.

Contact:

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Detailed information and Proposal submission via the web:

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

Proposal Submission Deadline: August 1, 2003