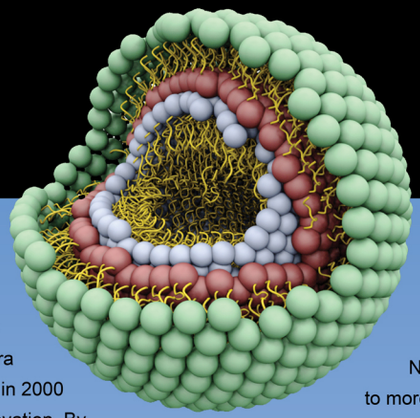
CALIFORNIA NANOSYSTEMS INSTITUTE



HISTORY

The California NanoSystems Institute is a multidisciplinary research partnership between UCLA and UC Santa Barbara established by the state legislature and California industry in 2000 as one of the first California Institutes for Science and Innovation. By exploring the power and potential of manipulating structures, molecule-by-molecule, the CNSI is on its way to creating revolutionary new materials, devices, and systems that will enhance virtually every aspect of our lives – helping to drive California's economy through innovations in medical delivery and health care, powerful new information technologies, energy efficient devices, environmental improvements, and more.

MISSION

Our institute's mission is to create the collaborative, closely-integrated and strongly interactive environment that will foster innovation in nanosystems research and education. Our goals include:

- Providing a world-class intellectual and physical environment with crucial instrumentation and facilities necessary to propel the next generation of nanosystems discoveries
- Generating ideas, discoveries and the talent that will continue to fuel innovation in nanosystems
- Fostering interdisciplinary collaboration
- Supporting and mentoring the next generation of scientists and engineers

RESEARCH

Biology & Biomedical

Nanoscale constructs promise new approaches to more effective, disease-specific medical therapies. Tools and diagnostics that can directly probe the electrical, structural and optical behavior of biological materials can illuminate our understanding of those systems and inspire device constructs that can be engineered from hybrid biological-non biological components.

Energy Efficiency

There are critical needs for device technologies that can more efficiently capture, transform and store energy and power from either natural sources or engineered sources like the electrical grid. Nanoscale science enables the development of new materials and devices to improve efficiencies in lighting, catalysis, energy capture, generation and storage.

Information Technologies

The storage and transport of electronic spin in semiconductor devices "spintronics", may revolutionize the electronic device industry. Nanophotonic and nanoelectronic technologies promise more compact and rapid information processing and new means of accessing and controlling photons and charge, leading to new paradigms of computation such as quantum information processing.

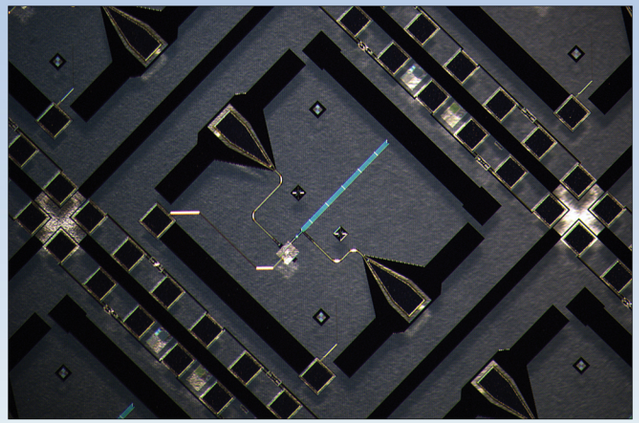
FACILITIES

Elings Hall houses cutting edge instrumentation and facilities that enable complete in-house fabrication of novel nanomaterials. Over 10,000 square feet of the CNSI is dedicated to the characterization of materials of every sort and nature. The physical, chemical, electrical, optical and magnetic properties of materials are resolved through state-of-the-art instrumentation. A trio of shared laboratories is available to researchers interested in exploring the synergistic opportunities envisioned between the physical, chemical and biological attributes of nanostructures:

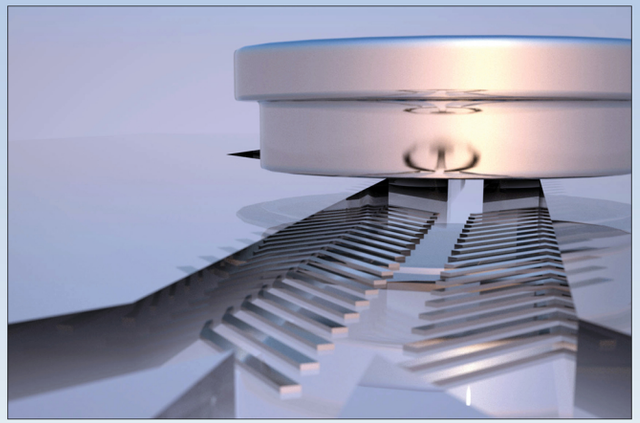
- Chemical Nanostructures Laboratory
- Biological NanoStructures Laboratory
- Nanostructures Cleanroom Facility

CENTERS

- Center for Polymers & Organic Solids
- Center for Spintronics and Quantum Computation
- Center for Stem Cell Biology and Engineering
- Institute for Collaborative Biotechnologies
- *STAGE* - Scientists, Technologists and Artists Generating Exploration
- Station Q
- Western Institute of Nanoelectronics



CNSI
cnsi.ucsb.edu



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