

www.nanocenter.umd.edu

Providing cutting-edge nanotechnologies and services for engineering and science researchers in academia, industry and government

Developing future professionals who have hands-on experience in nanotechnology

Promoting a vibrant nanotech economy in the state of Maryland through interactions with established and emerging companies

The Maryland NanoCenter is founded on the University of Maryland's historic strengths in engineering and science, strategic investments in technology and talent, and a strong culture, which stimulates and nurtures the highly cross-disciplinary teams that drive nano's progress.

Maryland NanoCenter users and collaborators benefit greatly from extensive on-campus expertise, cutting-edge facilities, strong interactions with corporate partners, and close ties with the nation's greatest concentration of federal laboratories.

THE MARYLAND NANOCENTER WELCOMES AND SERVES:

- Outside users who wish to share our superb new facilities for nanofabrication (FabLab) and nanocharacterization (NISPLab)
- Students who seek the excitement of a career in nano and a solid path to obtain it
- R&D collaborators who want to advance their goals in science or technology and product development
- Entrepreneurs who seek partnerships to advance their technology and intellectual property base and to generate new ideas for products in the nanotechnology marketplace



TEM image of HfO_2 nanotubes formed by atomic layer deposition into anodic aluminum oxide nanopore template.

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UNIVERSITY OF MARYLAND



FEATURES

RESEARCH FROM SCIENCE TO NANOTECHNOLOGY PRODUCTS:

- Nanomaterials Synthesis
- Nanoscale Measurements
- Nanoelectronics
- Microsystems
- Nano-bio technology
- Nano-based energy systems

EDUCATION:

- Undergraduate minor in nanotechnology
- Introductory nanotechnology lab training

CUTTING-EDGE, OPEN FACILITIES:

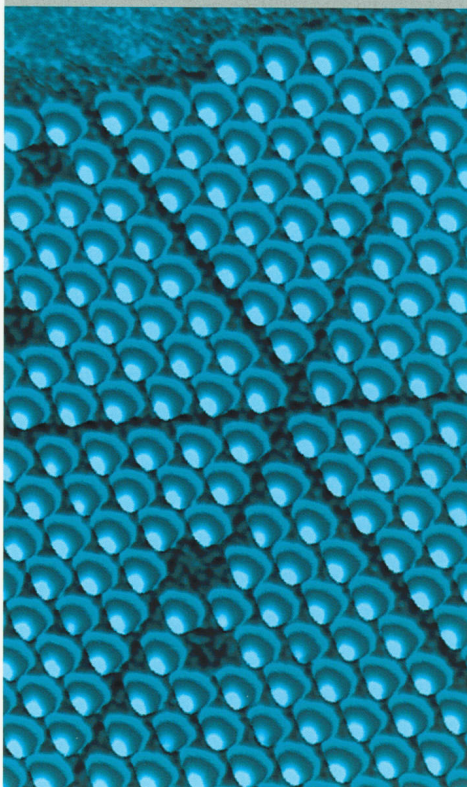
- Nanofabrication in the FabLab
- Nanocharacterization in the NISPLab

TECHNOLOGY DEVELOPMENT WITH INDUSTRY:

- Collaborative R&D programs
- Open user facilities
- Entrepreneurship opportunities
- Equipment demonstrations

ONE-STOP SHOPPING:

- Nanotechnology expertise
- Specialized equipment
- Joint research programs



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RESEARCH

PROJECTS INCLUDE:

Nanotube, nanowire, and nanofilm electronic devices

Flexible, multifunctional, nano-enhanced electronic systems

Manufactured nanostructures that exploit self-assembly, self-limiting reaction, and self-alignment

Combinatorial discovery and engineering of multifunctional nanomaterials

Nanostructured polymer, composite, and biomaterial systems

Cutting-edge nanocharacterization, particularly through scanning probes and electron microscopy

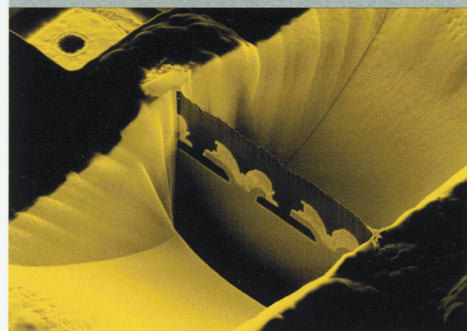
Highly controlled nanoparticle synthesis, application, and toxicology

Targeted, imagable nanoparticle-based drug delivery

Biomicrosystems and biofabrication for biomolecular reactions and cell response

Microsystems integrating sensing, actuation, and control

Novel nanostructures for energy capture, storage, and management



PEOPLE

RESEARCHERS:

100 faculty experts in nano- and micro- science, technology, and manufacturing

PROFESSIONAL STAFF:

Supporting shared user facilities

Open to companies, laboratories, and other institutions, as well as the University of Maryland

STUDENTS:

Students working together from engineering, life sciences, chemistry, physics, and other disciplines

Preparing the nanotechnology workforce



THE MARYLAND NANOCENTER IS A PARTNERSHIP AMONG:



A. JAMES CLARK
SCHOOL OF ENGINEERING

COLLEGE of CHEMICAL
AND LIFE SCIENCES

cmPS
at the edge of discovery ...

College of Computer, Mathematical
and Physical Sciences