Nanofabrication Laboratory

Big Science, Small Scale

Western University has made significant investments in nanotechnology as a critically important and emerging discipline within the University's broadly recognized research strengths in materials and biomaterials. Nanotechnology is poised to revolutionize and advance many vital sectors in the global economy, including biotechnology, healthcare, information technology, telecommunications and electronics.

The Nanofabrication Laboratory fosters, supports and sustains advanced research in biotechnology and nanotechnology in a wide range of disciplines.

What is the Nanofabrication Laboratory?

- A permanently staffed and fully serviced comprehensive facility focused on the design, analysis and fabrication of materials and devices at a scale below the wavelength of light
- Includes a 2,300-square-foot clean room to support research and development in nanotechnology and photonics
- Houses state-of-the-art instruments, with tools for SEM capabilities and focused ion beam machining, sophisticated etch and deposition processes and specialized lithography to allow for pattern and feature definition of materials on the nanoscale
- Attracts academic and industrial partners interested in theoretical and applied nanoscience research in science, engineering and medicine
- On a user-fee basis, provides clients with access and consultation expertise for technical advice in tool use, deposition, patterning, analysis and characterization techniques

Expertise

- Research related to patterning, imaging and functionalization at the submicron level, with specializations in developing biopolymers for biomedical applications and in producing nano-biosensors
- Unique strengths and contributions to nanoscience lie in the University's focus on assembling, synthesizing and functionalizing nanostructures
- Nanofabrication Laboratory researchers are also authorities in the study of photonics, with particular expertise in nanobiophotonics and in exploring novel ways to make photonic band gap materials
- Applications of photonics are endless, and the commercialization of technologies enabling smaller, more powerful components promises to advance numerous industrial sectors
- Researchers at the Nanofabrication Laboratory working in the areas of biophotonics are linked to the **Ontario Photonics Consortium**, a world-class, collaborative, inter-university research initiative established to promote exploration, discovery, development and engineering in photonics

Equipment

The Nanofabrication Laboratory is home to a number of high-tech instruments, including:

- A combined focused ion beam/scanning electron microscope
- A highly sophisticated two-photon confocal microscope with a high precision sample stage
- A microfabrication facility, including resist, masking, etching, deposition and optical microscopy
- A multiphoton confocal microscope
- A differential scanning calorimeter, gas chromatograph and thermal gravimetric analyzer

For more information, please visit: www.uwo.ca/fab

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