Nanotechnology symposium showcases new facility

A two-day nanotechnology symposium will be held Thursday and Friday, Sept. 24 and 25, in the Whitaker Hall auditorium to highlight the opening of Washington University's nano research center.

WUSTL invested $8 million in the Nano Research Facility and the Center for Materials Innovation after it was invited to join the National Science Foundation's 14-member nanotechnology network, said Dong Qin, Ph.D., associate dean for research in the School of Engineering & Applied Science and research associate professor.

The facility, which Qin calls a "machine shop" for nanotechnologists, brings together the instruments needed to engineer, manipulate and manufacture materials at the nanoscale (in billionths of a meter). It is an open facility available to both academic and corporate scientists who seek to foster interdisciplinary research in the energy, environment and biomedical fields.

Chancellor Mark S. Wrighton and Lawrence S. Goldberg, Ph.D., a WUSTL alumnus and a senior engineering adviser at the National Science Foundation, will welcome participants to the 1st Symposium on Nanotechnology for Public Health, Environment, and Energy. George M. Whitesides, Ph.D., the Woodford L. and Ann A. Flowers University Professor at Harvard University, will deliver the keynote address.

The symposium will focus on the practical issues arising as nanomaterials begin to leave the lab and enter consumer products. An initial session will address cost-effective means of making nanoparticles that exploit the ability of atoms to assemble themselves into useful structures, such as miniature cubes of silver or tiny cages of gold.

Given the recent discovery that nanoparticles can infiltrate cells, particular attention will be paid to developing toxicological tests that eventually will provide the information for the material safety data sheets that are required for all materials in commercial use. "The facility is committed to make every reasonable effort to anticipate and mitigate adverse effects and unintended consequences (of the new technology)," Qin said.

The new facility comprises four labs — a micro and nano-fabrication lab, a surface characterization lab, a particle technology lab and a bio-imaging lab — located in the Earth & Planetary Sciences Building and Whitaker Hall.

The fabrication lab includes Class 100, Class 1,000 and Class 10,000 clean rooms — the class referring to the level of contamination permitted in the room. A class 100 clean room, for example, may have only 100 particles greater than 0.5 micrometers in size per cubic foot of air. Ordinary room air is approximately class 1 million, nearly a hundred thousand times dirtier.

Among the latest equipment acquisitions is NanoMan, an advanced scanning probe microscope precise enough to move atoms around one by one. The facility offers training sessions on its instruments and is available to both academic and industrial users.

An open house and poster session will be held on the lower level of the Earth & Planetary Sciences Building at 5 p.m. Sept. 24. Visitors will be able to see nanomaterials made in the facility, tour the labs and watch streaming video from the labs in Whitaker Hall.

For more information, visit nano.wustl.edu/symposium.aspx or call 935-8893.