Brookhaven Lab Breaks Ground for New Nanocenter

October 3 2005

The U.S. Department of Energy's Brookhaven National Laboratory held a groundbreaking ceremony today for the Center for Functional Nanomaterials (CFN). The CFN will provide researchers with advanced probes and the ability to use new fabrication techniques to study materials at nanoscale dimensions – typically, billionths of a meter, or 1,000 times smaller than a human hair. These materials have different chemical and physical properties than bulk materials and could form the basis of new technologies.

The CFN – one of five Nanoscale Science Research Centers to be built at DOE national laboratories – was designed by HDR Architecture, Inc., of Alexandria, Virginia, and is being constructed by E. W. Howell Co., Inc., of Woodbury, New York. The 94,500-square-foot state-of-the-art laboratory/office facility is expected to attract an estimated 300 researchers from the Northeast annually.

Brookhaven employees and distinguished guests, including local Congressman Tim Bishop and Dr. Patricia Dehmer, Associate Director for the U.S. Department of Energy's Office of Basic Energy Sciences, attended the ceremony against a backdrop of heavy equipment at the CFN location in the center of Brookhaven's 5,300-acre site.

"The Center for Functional Nanomaterials will be at the forefront of research that is expected to lead to new technologies, such as faster computers, new communications devices, improved solar energy and new energy alternatives," Congressman Bishop said. "Long Island is fortunate to have this center here. Everyone reaps benefits when the best minds and the best technology merge to explore the frontiers of science."

DOE's Office of Basic Energy Sciences is funding the $81-million CFN project. The contemporary building, which has a metal and glass exterior, will cost $38 million to build, while specialized equipment, such as electron microscopy facilities and lithography-based fabrication facilities, and engineering and project management will account for the balance of the budget. The facility, which will occupy nine square acres and will accommodate 150 people, will be considered "green," or energy efficient and environmentally friendly, based on the U.S. Green Building Council's rating system. Construction is expected to be completed by March 2007, and experiments are due to begin shortly after that date.

The overarching research goal of the CFN is to help solve energy problems in the U.S. by exploring materials that use energy more efficiently and by researching practical alternatives to fossil fuels, such as hydrogen-based energy sources and improved, economical solar energy systems.

Under the energy banner, CFN studies will focus on three key areas: nanocatalysis, the acceleration of chemical reactions using nanostructures; biological and soft nanomaterials, such as polymers and

liquid crystals, in which specialized design is expected to lead to new functions; and electronic nanomaterials that exhibit unprecedented control of electrons, which are expected to lead to new communication and energy-control devices.

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