



SECOND INTERNATIONAL NANOTECHNOLOGY CONFERENCE ON COMMUNICATIONS AND COOPERATION

Abstract

Nanoscience Centers and Activities at the US Department of Energy: Present and Future Directions

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As one of the lead agencies for nanotechnology research and development, the U.S. Department of Energy (DOE) is revolutionizing the way we understand and manipulate materials at the nanoscale. As one of the Federal Government's largest supporter of basic research in the physical sciences in the United States, and overseeing the Nation's cross-cutting research programs in high-energy physics, nuclear physics, and fusion energy sciences, the DOE guides the grand challenges in nanomaterials, nanoscience, and nanotechnology research that will have an impact on everything from medicine, to energy production, to manufacturing. Within the DOE's Office of Science, the Office of Basic Energy Sciences (BES) leads research and development at the nanoscale, which supports the Department's missions of national security, energy, science, and the environment. At the cornerstone of the program in nanoscience is the establishment and operation of five new Nanoscale Science Research Centers (NSRCs), which are under development at six DOE Laboratories. Throughout its history, DOE's Office of Science has designed, constructed and operated many of the nation's most advanced, large-scale research and development user facilities, of importance to all areas of science. These state-of-the-art facilities are shared with the science community worldwide and contain technologies and instruments that are available nowhere else. Like all DOE national user facilities, the new NSRCs are designed to make novel state-of-the-art research tools available to the world, and to accelerate a broad scale national effort in basic science research and development. The five NSRCs are sited adjacent to or near existing DOE/BES major user facilities, and are designed to enable national user access to world-class capabilities for the synthesis, processing, fabrication, and analysis of materials at the nanoscale, and to transform the nation's approach to nanoscience and nanotechnology. All centers are presently operating under 'jumpstart' user programs supporting over 500 researchers, and four of the five NSRCs will be in full or initial operations occupancy by Fall of 2006. To become a user, see http://www.science.doe.gov/bes/User_Facilities/dsuf/nanocenters.htm.