

MAR14-2013-000530

Abstract for an Invited Paper
for the MAR14 Meeting of
the American Physical Society

The Role of Nanoscience and Nanotechnology in Addressing the World's Energy Challenges

JAMES DICKERSON, Brookhaven National Laboratory

The Center for Functional Nanomaterials (CFN) at Brookhaven National Laboratory in the United States provides state-of-the-art capabilities for the fabrication and study of nanoscale materials, with an emphasis on atomic-level tailoring to achieve desired properties and functions. The CFN is a science-based user facility, simultaneously developing strong scientific programs while offering broad access to its capabilities and collaboration through an active user program. The overarching scientific theme of the CFN is the development and understanding of nanoscale materials that address the Nations' challenges in energy security, consistent with the Department of Energy mission. The CFN is one of five Nanoscale Science Research Centers (NSRCs) funded by the Office of Science of the United States Department of Energy. The CFN supports Brookhaven's goal of leadership in the development of advanced materials and processes for selected energy applications. In my presentation, I will highlight the role that the CFN, through its scientific staff and this scientific user community, is playing in addressing the world's energy challenges. I will focus on several trajectories of research that are being executed at CFN, including work on photovoltaics, novel nanostructured materials for catalysis, soft and biological materials, and our state-of-the-art electron microscopy and proximal probe microscopy facilities.