



# Scientific Symposium: Material Challenges for Clean Energy in the New Millennium

Wednesday, April 29, 2009 8:15 am - 5:15 pm, Northeastern University

The Northeastern University Center for Renewable Energy Technology (NUCRET) and the Department of Chemistry & Chemical Biology are pleased to present:

## Material Challenges for Clean Energy in the New Millennium

This scientific symposium will be held on Wednesday, April 29, the third and final day of NUCRET's inaugural event, "Energy Challenges for the New Millennium."

Wednesday's scientific symposium will offer a glimpse into future materials for clean energy conversion and storage. The day-long program features distinguished scientists and engineers who are working at the frontier of the bio-nano interface – and materials design, manipulation and imaging at the atomic scale – to develop new materials and techniques for next generation clean energy technologies.



# Northeastern

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Harvard University  
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## MORNING SESSION - 8:15 am. Northeastern University, 20 West Village F, Boston, Massachusetts

Chair: Prof. Graham Jones, Chair, Department of Chemistry & Chemical Biology, Northeastern University

Dr. Kenneth Blank, Vice Provost for Research, Northeastern University  
Introductory Remarks

Prof. George Whitesides, Department of Chemistry & Chemical Biology, Harvard University  
Materials Science and Energy

Prof. Mildred Dresselhaus, Institute Professor of Electrical Engineering and Physics, Massachusetts Institute of Technology  
Potential Impacts of Nanoscience and Nanotechnology on the Energy Landscape

Prof. Allen J. Bard, Department of Chemistry and Biochemistry, University of Texas, Austin, Texas  
Application of Scanning Electrochemical Microscope to the Discovery of Photocatalysts

Prof. Robert Blankenship, Department of Chemistry, Washington University in St. Louis, St. Louis, MO  
Photosynthetic Membranes as Natural Nanoscale Bioenergy Conversion Devices.

Prof. Gerald Audette, Department of Chemistry, York University, Toronto, Canada  
Protein-Carbon Nanotube Composites for Bio-Fuel Cells and Alternate Energy Strategies

## AFTERNOON SESSION - 1:30 pm. Northeastern University, 20 West Village F, Boston, Massachusetts

Chair: Prof. Sanjeev Mukerjee, Department of Chemistry & Chemical Biology, Northeastern University

Prof. Sanjeev Mukerjee, Department of Chemistry & Chemical Biology, Northeastern University  
Overview of Materials Research at Northeastern University Center for Renewable Energy Technologies

Prof. Charles Lieber, Department of Chemistry & Chemical Biology, Harvard University  
Nanowires as Solar Cells and Nanoelectronic Power Sources

Prof. Ponisseril Somasundaran, School of Mines, Department of Earth & Environmental Engineering  
Green Nanostructures for Enhanced Energy Recovery

Dr. Venkatesan Renugopalakrishnan, Professor of Bioengineering, National University of Singapore, Children's Hospital, Harvard Medical School, Adjunct Professor, Department of Chemistry & Chemical Biology, Northeastern University  
Engineering Proteins for Efficient Energy Harvesting

Dr. Gilles Dennler, Director Device Research, Konarka Technologies, MA  
Conjugated Polymer - Fullerene Based Organic Solar Cells: State of the Art, Future Challenges and Industrial Perspectives

Prof. Shriram Ramanathan, School of Engineering and Applied Sciences, Harvard University  
Materials and Devices for Low Temperature Solid Oxide Fuel Cells

Prof. Sanjeev Mukerjee, Department of Chemistry & Chemical Biology, Northeastern University  
Closing Statement

For more information, please visit [www.northeastern.edu/cas/nucret.html](http://www.northeastern.edu/cas/nucret.html)

The sessions are free, but please pre-register at [www.northeastern.edu/cas/nucret.html](http://www.northeastern.edu/cas/nucret.html)