



Research Funding Opportunity

Program Title	Energy for Sustainability
Solicitation/RFP Code	PD 09-7644
Funding Organization(s)	NSF
Funding Amount(s)	The average 3-5 year award is \$100,000/yr.
Application Deadline(s)	Application windows: February 1, 2009 - March 1, 2009 August 15, 2009 - September 15, 2009
Program Summary	
<p>The Energy for Sustainability program supports fundamental research and education in energy production, conversion, and storage and is focused on energy sources that are environmentally friendly and renewable. Most world energy needs are currently met through the combustion of fossil fuels. With projected increases in global energy needs, more sustainable methods for energy production will need to be developed, and production of greenhouse gases will need to be reduced.</p> <p>Sources of sustainable energy include, sunlight, wind, and biomass.</p> <p>Hydrogen and alcohols are potential energy carriers that can be derived from renewable sources. Research that generates enabling science and technologies for more efficient hydrogen generation and storage is supported by the program. Potential sources of hydrogen include conversion from biomass and from electrolysis, photolysis or thermolysis of water. Biomass is available from agricultural crop residues, forest products, aquatic plants, and municipal wastes. In addition to hydrogen, biomass can be a source of liquid, solid, and gaseous fuels including biofuels such as ethanol.</p> <p>Fuel cells have the potential to convert fuels such as hydrogen and alcohols to electricity at high efficiencies and should play an increasing role in energy conversion. Critical components of fuel cells requiring additional research include catalysts and electrolytes. Development of these components also requires fundamental research on the reaction and transport mechanisms at the catalyst and membrane electrolyte interface. Advances in these areas are needed to address key challenges in efficiency, durability, power density, and environmental impacts. The engineering aspects of fuel-cell design and operation also require further study in areas such as water and thermal management.</p> <p>Wind power is a growing source of electrical energy. Increased efficiency requires a fundamental knowledge of the interaction of wind with the blade structure. Understanding the fluid flow, and optimizing blade design are important aspects in developing more efficient wind generators. Photovoltaic devices have the potential to supply a significant fraction of electrical energy to the power grid. Although silicon-based materials have been most widely used, other semiconducting materials and titanium dioxide also have potential. New materials and novel fabrication techniques for solar energy conversion are supported by the program.</p> <p>URL for full announcement: http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=501026&org=CBET</p> <p>Program contact: Trung Nguyen (703) 292-8320</p>	