

**PURDUE'S ENERGY CENTER AT DISCOVERY PARK** is a multidisciplinary academic community that includes faculty from the colleges/schools of Science, Engineering, Technology, Liberal Arts, Management, Consumer and Family Sciences, and Agriculture. The Energy Center comprises 10 key research initiatives: Bioenergy, Clean Coal, Electrochemical, Global Partnerships, Hydrogen, Nuclear Energy, Power Electronics, SEPAE (Social, Economic, and Political Aspects of Energy Use and Policy), Solar Energy, and Wind Energy.

Members of the Hydrogen Initiative are exploring several approaches to hydrogen storage and production including waste to hydrogen and a controlled reaction of aluminum and water. Our goal is to enable the hydrogen economy.

## HYDROGEN RESEARCH

**Mahdi Abu-Omar, College of Science—Chemistry**

Transition metal catalysts for controlled hydrogen production from liquid silanes and other chemical hydrides.

**Rakesh Agrawal, College of Engineering—Chemical Engineering**

Use of Sustainable Hydrogen to Produce Liquid Biofuels

**William Anderson, College of Engineering—Aeronautical & Astronautical Engineering**

Hydrogen ignition and combustion for propulsion and power

**Nicholas Delgass, College of Engineering—Chemical Engineering**

Hydrogen Rich Environment for Biofuel Production

Development of water gas shift catalysts using Discovery Informatics

**Timothy Fisher, College of Engineering—Mechanical Engineering**

Heat Transfer in Hydrogen Storage Systems, Nanoscale Materials and Enhanced Transport Processes for Hydrogen Storage

**Jay Gore, College of Engineering—Mechanical Engineering**

Flow, Heat Transfer and Reaction issues in Hydrogen Storage and Fire Safety

**Hugh Hillhouse, College of Engineering—Chemical Engineering**

Hydrogen Rich Environment for Biofuel Production

**Robert Kramer, College of Engineering, Calumet—Electrical and Computer Engineering**

Hydrogen Production from a Multipurpose Mine Mouth Coke Facility  
Production of Hydrogen Using an Anaerobic Biological Process

**Michael Ladisch, College of Engineering—Agricultural and Biological Engineering**

Biohydrogen Fuel Sources for Electrical Power Generation

**Issam Mudawar, College of Engineering—Mechanical Engineering**

Heat transfer in Hydrogen Storage Systems  
Thermal Management in Hydrogen Storage

**Timothee Pourpoint, College of Engineering—Aeronautical & Astronautical Engineering**

Thermal Design and Characterization of On-board Metal Hydride Storage Systems

**Daniel Raftery, College of Science—Chemistry**

Doped Semiconductor Nanoparticle Materials for Solar Hydrogen Conversion

**P.V. Ramachandran, College of Science—Chemistry**

Borane and Borohydride Chemistry

**Shripad Revankar, College of Engineering—Nuclear Engineering**

Hydrogen generation from water using nuclear energy

**Fabio Ribeiro, College of Engineering—Chemical Engineering**

Hydrogen Rich Environment for Biofuel Production

Development of water gas shift catalysts using Discovery Informatics

**Arvind Varma, College of Engineering—Chemical Engineering**

Combustion-Based Methods to Generate Hydrogen for Fuel Cells

**Duane Wegener, College of Liberal Arts—Psychology**

Public Perceptions of Hydrogen-Based Energy

**Jerry Woodall, College of Engineering—Electrical and Computer Engineering**

The Science and Technology of Al-Ga Alloys as a Material for Energy Storage, Transport, and Splitting Water

**Yuan Zheng, College of Engineering—Mechanical Engineering**

Reacting flows in subscale chemical hydride and metal hydride systems

### Energy Center

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