



Hydrogen News



Drs. Seal and Bartine to Speak at the National Nanotech Initiative

Dr. Sudipta Seal will speak on his NASA-Hydrogen funded research before the National Nanotechnology Initiative Grand Challenge Workshop at Palo Alto, California. The workshop is organized by the National Aeronautics and Space Administration. The title of Dr. Seal's lecture is "Nanostructures for H-sensors" (see: <http://nasagrandchallenge.arc.nasa.gov/program.html>). Dr. Seal is the lead PI of the NASA Hydrogen Research at Florida Universities funded hydrogen sensor work entitled "Development of Hydrogen Gas Sensor with High Sensitivity and Selectivity Based on Doped Nanocrystalline-Nanoporous Metal/Metal Oxides for Space Explorations." The effort is being conducted at the University of Central Florida's Advanced Materials Processing & Analysis Center and Mechanical, Materials and Aerospace Engineering. Other researchers involved in this research include: Dr. S. Shukla (sensor development team leader), Dr. S. Kuiry, S. Deshpande, S. Patil, D. Bera and collaborators, L. Ludwig and Dr. J. Cho.

In addition to Dr. Seal, Dr. David Bartine of NASA-Kennedy Space Center and one of the Program Managers involved with the NASA Hydrogen Research at Florida Universities program will also speak at this by-invitation-only workshop. The titles of Dr. Bartine's lectures are: "Orbiter Lessons Learned?" and "Next Generation Shuttle Sensors."

The NNI is a workshop organized through the National Nanotechnology Coordination Office (NNCO) and member agencies of the Nanoscale Science, Engineering and Technology (NSET) Subcommittee, Committee on Technology, National Science and Technology Council. The output of this workshop will be an NSET report to serve as input to the new NNI strategic plan for the next 5-10 years, and will also be provided through the NSET to the President's Council of Advisors on Science and Technology (PCAST) as input for the PCAST's ongoing review of NNI.

The workshop's focus centers on the following six themes:

- Nanomaterials
- Microcraft
- Nanorobotics
- Nano-micro-macro Integration
- Nanosensors and Instrumentation
- Astronaut Health Management

In addition to the impact on space exploration, the above themes are of interest to the missions of other agencies and the commercial sector.

With the unique properties that nanotechnology building blocks provide, the potential for development of a wide variety of sensors and novel, low power, multi-functional

instruments for science missions, particularly for in-situ analysis and robotic operations, is tremendous. Sensors may be wireless ultra-fast, super sensitive, and non-invasive and may use chemical, electronic or photonic based detection.

All of the research and regulatory agencies of the U.S. government have strong interests in improved sensors and instrumentation that will arise from developments in nanotechnology; National Institutes of Health has a particularly strong interest in biological sensors and the Department of Homeland Security has an interest in biological, chemical, and radiological sensors.

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***For more information, contact
Dr. Sudipta Seal
sseal@pegasus.cc.ucf.edu***