

# CIB Presents: An International Workshop on Integrated Design & Delivery Solutions (IDDS)



The International Council for Research and Innovation in Building and Construction (CIB) will be holding a one-day international workshop on April 18, 2012, to showcase global research, technology and innovative practices in architecture, engineering and construction (AEC).

For more information and to register see the workshop website:  
[www.nist.gov/el/cib.cfm](http://www.nist.gov/el/cib.cfm)

On April 19, you are invited to participate in a half-day of tours at the National Institute of Standards and Technology, in Gaithersburg, Md., that will highlight exciting research in the areas of energy, fire, materials, and nanotechnology.

Tours of the following facilities will take place beginning at 9:30 a.m. Attendees will be able to register for tours when they register for the workshop.

**Registration for NIST tours must be completed no later than 5pm Monday, April 16, 2012.**

## Net Zero Energy Residential Test Facility

Net Zero Energy Residential Test Facility (208)

*Hunter Fanney, Chief, Energy and Environment Division,  
Engineering Laboratory*

The Net Zero Energy Residential Test Facility will enable the development and demonstration of measurement science needed to achieve net zero energy residential homes. The facility will initially be used to demonstrate that a residence, typical in size/features of homes in the metropolitan D.C. area, can produce as much energy from renewable energy resources as it consumes on an annual basis. It will subsequently be used to provide “real world” field data to validate and improve energy models and to improve laboratory based measurements of systems and components to better represent field performance. This facility, designed to achieve LEED Platinum certification, represents the joint efforts of NIST’s Engineering Laboratory, Building Science Corporation, the Department of Energy’s Building America Program, and NIST’s Office of Facilities and Property Management.



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## Research in the NIST National Fire Research Laboratory

National Fire Research Laboratory (205)

*Jiann Yang, Director, National Fire Research Laboratory,  
Fire Research Division, Engineering Laboratory*

NIST's National Fire Research Laboratory provides the capability to conduct experiments with fires up to 10 MW in size. Ongoing collaborative research on wildland-urban interface fires, upholstered furniture flammability, and electric cable tray fires will be highlighted. An ongoing expansion will add the capability to conduct experiments on real-scale structures up to two stories tall under fire loads up to 20 MW and applied structural loads simulating service conditions. This facility will be used to conduct experiments that provide the scientific basis for the development of fire safety standards and building codes, support post-fire studies, and validate advanced computational fire models that are used by engineers for building design.

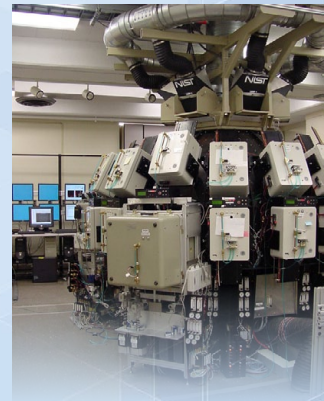


## Life Cycle Performance of Building Materials using the NIST SPHERE Facility Research

Building Research Building (226), Room B349

*Joannie Chin, Leader, Polymeric Materials Group,  
Materials and Structural Systems Division, Engineering Laboratory*

Reliably predicting the service life of polymers, such as paints, coatings, sealants, roofing materials, plastics, and structural composites exposed to real world conditions has been identified by industry as a critical measurement science need. Using a device called the SPHERE, NIST researchers have successfully linked field and laboratory testing results for the first time. The SPHERE, which stands for Simulated Photodegradation via High Energy Radiant Emission, enables scientists to create and control a number of environmental pressures, including sunlight and humidity. Measuring how well materials perform under various weather conditions will allow industry researchers to make improvements in future products.



## The NIST Center for Nanoscale Science and Technology

AML (215) NanoFab viewing corridor

*Lloyd Whitman, Deputy Director, Center for Nanoscale  
Science and Technology (CNST)*

The NIST Center for Nanoscale Science and Technology (CNST) supports the U.S. nanotechnology enterprise from discovery to production by providing industry, academia, NIST, and other government agencies with access to world-class nanoscale measurement and fabrication methods and technology. The CNST is the only national nanocenter with a focus on commerce. The NanoFab, a shared national resource for nanofabrication and measurement, gives researchers economical access to and training on a state-of-the-art tool set required for cutting-edge nanotechnology development. Looking to the future, multidisciplinary CNST research is creating the next generation of nanoscale measurement instruments and methods, which are made available through collaboration.

