



Pacific Northwest
NATIONAL LABORATORY

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PNNL researchers are working with graphene to meet the national challenge for new energy storage materials and create the next generation of energy-efficient batteries. This image shows a new class of layered nanocomposites containing stable, ordered, alternating layers of nanocrystalline metal oxides and graphene or graphene stacks. These graphene and graphene stacks can also be incorporated into liquid-crystal-templated nanoporous structures to form high-surface-area, conductive networks, or can be incorporated into free-standing, flexible metal oxide-graphene nanocomposite films and electrodes. PNNL researchers have investigated the Li-ion insertion properties of these electrodes for energy storage and have demonstrated that SnO_2 -graphene nanocomposite films can achieve near theoretical specific energy density without significant charge/discharge degradation. Image provided by PNNL Fellow Jun Liu.

Director's Distinguished Lecture Series

Dr. Ellen D. Williams

Chief Scientist, BP

January 25, 2011 | 3:30 | Battelle Auditorium

Making energy sustainable - The role of science, technology, policies and partnerships

The scale and cost of the energy challenge are immense. Everyone wants secure, reliable, and affordable energy, but climate change and demand growth are transforming and continuously evolving the energy landscape. We can't change things overnight, and there is no single solution. To produce more energy in a low-carbon way will require time, money and global-scale asset and infrastructure deployment. The solutions are different for each country, and the transformation requires a tailored approach based on each nation's natural circumstances. Research, technology, policies and partnerships will determine the pace of change – with the appropriate balance of priorities we can accelerate the transition to a more sustainable energy future.

