

Public release date: 4-Feb-2013

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February 2013 story tips from Oak Ridge National Laboratory

HEALTH – Neutron imaging breast cancer . . .

More precise optical imaging is vital for better diagnosis of breast cancer, which strikes one in eight women annually in the United States alone. Researchers at Oak Ridge National Laboratory and the University of Tennessee are using the neutron imaging beam line at ORNL's High Flux Isotope Reactor to evaluate neutron imaging as a powerful new tool for early detection. The study, led by Dr. Maria Cekanova of UT, working with imaging instrument scientist Hassina Bilheux, is using tissue from dogs treated at the UT College of Veterinary Medicine. Canine cancers have a similar composition to human cancers, and researchers noted that no animals were hurt or euthanized for this study. [Contact: Agatha Bardeel, (865) 574-0644; bardoelaa@ornl.gov]

MATERIALS – Grand-scale graphene . . .

In the race to make graphene available for flexible touch screens, smart phones, flat-panel displays, solar panels and more, researchers at Oak Ridge National Laboratory and New Mexico State University have produced a graphene sheet 40 inches in diagonal. This sheet, the largest demonstration in the United States, was made using an atmospheric pressure setup that eliminated significant difficulties with the approach previously used, known as low-pressure chemical vapor deposition. Team leader Ivan Vlasiouk noted the achievement represents a major step toward the goal of industrial roll-to-roll graphene manufacturing that could produce literally miles of graphene. The process is highlighted in a paper titled "Large scale atmospheric pressure chemical vapor deposition of graphene" published in the journal *Carbon*. The paper is available at <http://dx.doi.org/10.1016/j.carbon.2012.11.003>. [Contact: Ron Walli, (865) 576-0226; wallira@ornl.gov]

CLIMATE – Adapting to change . . .

By studying the effects of climate change on the Gulf Coastal region's economy, agriculture and energy production, ORNL researchers are addressing key questions posed by the Department of Energy while designing a tool that the scientific community can use to predict how climate change will impact small localized areas elsewhere. Researchers are using information gained from computer modeling to assess the effects of sea level rise, increases in hurricanes, higher temperatures, sporadic droughts and more on individuals living in particular regions of the United States. [Written by Jennifer Brouner; media contact: Ron Walli, (865) 576-0226; wallira@ornl.gov]

TECH TRANSFER -- Bridging the Gap event . . .

Several of Oak Ridge National Laboratory's most promising applied R&D capabilities will be in the spotlight March 5-6 as dozens of entrepreneurs, investors and scientists gather at the lab's third annual Bridging the Gap conference. "This is a great opportunity for the region's business community to receive capability briefings from some of the lab's most dynamic researchers and to explore commercialization and collaboration opportunities," said Tom Rogers, ORNL's director of Industrial Partnerships and Economic Development. Last year's conference attracted 135 attendees. The agenda includes talks on energy, advanced materials and big data and tours of ORNL's new Carbon Fiber Technology Facility and Manufacturing Demonstration Facility. Registration info can be found at <http://www.ornl.gov/adm/partnerships/events.shtml>. [Contact: Morgan McCorkle, (865) 574-7308; mccorkleml@ornl.gov]

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