



News Release

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Nanotechnology: Learning From Past Mistakes
Nanotech's success depends on addressing safety questions

Washington, DC — A new expert analysis in *Nature Nanotechnology* questions whether industry, government and scientists are successfully applying lessons learned from past technologies to ensure the safe and responsible development of emerging nanotechnologies.

The study applies the 12 “late lessons from early warnings,” published by the European Environment Agency (EEA) in 2001, to the emerging field of nanotechnology. EEA’s “lessons” are drawn from case studies that include the introduction of ozone-damaging halocarbons and of environmentally persistent and toxic PCBs.

The authors of this latest study, who include Steffen Foss Hansen of the Technical University of Denmark and Project on Emerging Nanotechnologies Chief Science Advisor Andrew Maynard, conclude that while the nanotechnology community is doing some things right, “we are still in danger of repeating old, and potentially costly, mistakes.”

“Despite a good start, nanotechnology commercialization appears hampered and diverted because many of the same government organizations responsible for promoting nanotechnology also are responsible for regulating it. Risk research strategies are weak and not leading to clear answers to critical safety questions and to filling clear knowledge gaps. Collaborations on risk research, environment and health monitoring, and ‘green’ applications are hindered by disciplinary and institutional barriers. Most importantly, stakeholders and the public are not being fully engaged,” according to lead author Hansen.

“Nanotechnology is all about looking to the future—solving new challenges with new science,” says Maynard. “But if it is to succeed, we also need to look back and heed the lessons of the past. And those lessons are clear—work with foresight, honesty and humility; be grounded in reality; and listen to people. We still have a chance to get it right with nanotechnology. But we are not there yet.”

The commentary “Late lessons from early warnings for nanotechnology” is currently available online at www.nature.com/nnano.

About Nanotechnology

Nanotechnology is the ability to measure, see, manipulate and manufacture things usually between 1 and 100 nanometers. A nanometer is one billionth of a meter; a human hair is

roughly 100,000 nanometers wide. In 2007, the market for nanotechnology-based products totaled \$147 billion. Lux Research projects that figure will grow to \$3.1 trillion by 2015, or about 15% of total global output.

The **Project on Emerging Nanotechnologies** (www.nanotechproject.org) is an initiative launched by the **Woodrow Wilson International Center for Scholars** and **The Pew Charitable Trusts** in 2005. It is dedicated to helping business, government and the public anticipate and manage possible health and environmental implications of nanotechnology.

Nature Nanotechnology, published by Nature Publishing Group, was launched in October 2006. The journal covers all areas of nanoscience and nanotechnology, including chemistry, physics, materials science, the life sciences and engineering, and also the application of nanotechnology in a wide range of industrial sectors.

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