

Safety experts ill-equipped to handle nanotechnology in workplace

December 28 2006

A strategic plan and more resources for risk research are needed now in order to ensure safe nano-workplaces today and in the future. That is the conclusion of Project on Emerging Nanotechnologies Chief Science Advisor Andrew Maynard in a new article, "Nanotechnology and Safety" just released by Cleanroom Technology magazine.

Last year, nanotechnology was incorporated into \$30 billion in manufactured goods--a number predicted to grow to \$2.6 trillion in annual manufactured goods by 2014. Already, there are almost 400 manufacturer-identified nanotechnology-based consumer products on the market--ranging from computer chips to automobile parts and from clothing to cosmetics and dietary supplements. By 2015, the National Science Foundation estimates that the nanotechnology sector will employ more than 2 million workers.

But little is known about potential risks in many areas of nanotechnology--including worker exposures. Funding for risk-focused research is a small fraction of what is being spent on nanotechnology commercial applications.

"Because nanotechnology is a way of doing or making things rather than a discrete technology, there will never be a one-solution-fits-all approach for nanotechnology and nanomaterials workplace safety," states Maynard. "That is why the federal government needs to invest a minimum of \$100 million over two years in targeted risk research in order to begin to fill in our occupational safety knowledge gaps and to

lay a strong, science-based foundation for safe nanotechnology workplaces."

In the short term, because of incomplete information, Maynard stresses the need to supplement good hygiene practices in the workplace with nano-specific knowledge. Until more research data is available, Maynard proposes developing a "control banding" approach to nanotechnology workplace risk--a course of action that is between inaction and banning all nanomaterials as hazardous. This could involve selecting appropriate control approaches based on a nanomaterial "impact index" centered on composition-based hazard, and perturbations associated with their nanostructure--like particle size, shape, surface area and activity, and bulk-size hazard--and on an "exposure index" representing the amount of material used and its "dustiness."

The article is available in the magazine's December 2006 / January 2007 issue and is freely available online: <http://www.cleanroom-technology.co.uk>

Source: Project on Emerging Nanotechnologies

Citation: Safety experts ill-equipped to handle nanotechnology in workplace (2006, December 28) retrieved 11 August 2024 from <https://phys.org/news/2006-12-safety-experts-ill-equipped-nanotechnology-workplace.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.