Greenlist Bulletin

From the Toxics Use Reduction Institute at the University of Massachusetts Lowell

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This is the weekly bulletin of the TURI Library at the University of Massachusetts Lowell. Greenlist Bulletin provides previews of recent publications and websites relevant to reducing the use of toxic chemicals by industries, businesses, communities, individuals and government. You arewelcome to send a message to jan@turi.org if you would like more information on any of the articles listed here, or if this email is not displaying properly.

Greening work styles: analysis of energy behavior programs in the workplace

Source: ACEEE, January 10, 2012
Author: Shui Bin

This report focuses on energy behavior programs in the workplace, which aim to reduce building energy use through change in employees' attitudes and behaviors. The report reviews five energy behavior projects across the U.S. and Canada. Energy savings of the studied energy behavior projects are from 4% (savings from a stand-alone behavior program) to nearly 75% (savings from a comprehensive project in which a behavior program is a component).

The report also identifies four intervention strategies shared by the reviewed energy behavior projects: (1) setting the tone with strong support from upper management and good program branding; (2) building a team consisting of a stakeholder-oriented program committee and peer champions selected from building occupants; (3) employing communication tools including e-mail, Web sites, prompts, posters and public meetings; and (4) deploying key engagement techniques such as feedback, benign peer pressure, competition, rewards, and reference to appropriate social norms.

The report suggests that the energy research community and energy efficiency professionals should work together to develop an improved evaluation framework to better document, study, and evaluate energy behavior programs. The integration of energy behavior programs into relevant building energy efficiency initiatives would help promote the development and deployment of advanced technologies in a more conservation-conscious environment. Moreover, government at every level should consider leading by example by implementing their own energy behavior programs, which would help promote a culture of energy saving in their workplaces and beyond.

Download the report

Coatings influence nanoparticle toxicity

Source: Chemical & Engineering News, January 12, 2012

To understand the toxicity of nanoparticles, most scientists have focused on the materials' metal cores. But now researchers have shown that the chemicals that decorate silver nanoparticle surfaces can change their toxicity.

Known for their antibacterial properties, silver nanoparticles find use in medical devices, textiles, and other products. In 2010, Mitchel Doktycz of Oak Ridge National Laboratory and his colleagues reported that unlike other silver nanoparticles, those with fatty oleate coatings were not toxic to bacteria. Those results led Doktycz and his team to wonder whether chemical coatings could make particular nanoparticles more toxic to bacteria but less toxic to eukaryotic cells.

The researchers synthesized and purified silver nanoparticles with four different chemical surfaces. They then tested the particles' toxicity toward mouse cell lines from the lung and immune system and used microscopy to look for damage to the cells' membranes. Nanoparticles coated with an ammonium-containing polymer were the most toxic to cells, followed by those coated with proteins and oleates. Uncoated silver nanoparticles proved the least toxic. Lung epithelial cells were less likely to die or experience membrane damage than macrophages were.

The results offer insights that may help materials scientists match nanoparticles and their coatings with applications, says Anil Suresh, first author of the study and now a staff scientist in molecular medicine at City of Hope, a cancer research center in Duarte, Calif. Doktycz now wants to understand the details of how cells interact with these nanoparticles and their coatings, including how the cells might modify the surface chemicals.

EPA Toxics Release Inventory doesn't offer full picture of pollution

Source: The Center for Public Integrity, iWatch News, January 9, 2012
Author: Corbin Hiar

The U.S. Environmental Protection Agency has unveiled its analysis of the 2010 Toxics Release Inventory, a database containing information on the disposal or release of 650 potentially dangerous chemicals used by almost 21,000 facilities. Though there were some increases between 2009 and 2010, it found that releases of these chemicals have generally decreased, with the total down 30 percent since 2001.

But, as the EPA acknowledged, the database provides only a snapshot of the pollution produced by American industry. "Users of TRI data should be aware that...it does not cover all toxic chemicals or all sectors of the U.S. economy," the analysis warned. "Furthermore, the quantities of chemicals reported to TRI are self-reported by facilities and are often estimates."

These estimates in some cases dramatically understate the extent of pollution, as the Center for Public Integrity and NPR reported in the Poisoned Places series, an investigation of lax Clean Air Act enforcement.

Read more

Tox Town introduces new US Southwest neighborhood

Source: National Library of Medicine, January 10, 2012

What is fracking? What are uranium tailings and how can they affect my health? Answers to these questions can be found in Town's new US Southwest Scene:

http://www.toxtown.nlm.nih.gov/flash/southwest/flash.php (English)
http://www.toxtown.nlm.nih.gov/flash/southwest/flash_sp.php (Spanish)

This scene, developed in conjunction with Dine College in New Mexico , highlights locations associated with environmental health concerns impacting the Navajo and others living in the Southwest region of the United States. New Tox Town locations found in this scene include:

1. Abandoned Mines
2. Coal-Fired Power Plants
3. Dust Storms
4. Hydraulic Fracturing
5. Irrigation Canals and Ditches
6. Oil and Gas Fields
7. Sheep Ranching
8. Uranium Tailings
9. Water Wells
10. Windmills

Regardless of where you live, you will definitely want to visit this new neighborhood and learn about possible environmental health risks.

AltTox.org website

Source: The Humane Society of the United States and Procter & Gamble

AltTox.org is a website dedicated to advancing non-animal methods of toxicity testing, both to better protect the health of humans, animals, and the environment and to reduce the numbers and suffering of animals used in current toxicology assessments. The website is designed to encourage the exchange of technical and policy information on *in vitro* and *in silico* methods for all types of toxicity tests. The target audience includes stakeholders in industry, government, academia, and nongovernmental organizations.

AltTox consists of three interconnected components:

- Online forum/message board - AltTox Forum
- An informational section on toxicity testing - Toxicity Testing Resource Center (TTRC)
- Invited commentaries - The Way Forward

The *AltTox Forum* is a message board for the AltTox community to use for posting news, information, and perspectives as well as encouraging feedback and commentary. This online community is intended to foster progress internationally in the development, validation, and acceptance of *in vitro/in silico* methods, with the goal of decreasing our reliance on animal-based safety testing. The Forum is moderated by a group of internationally-recognized subject matter experts.

The website's informational section, the TTRC, provides a comprehensive source of information on non-animal methods of toxicity testing not easily found anywhere else on the Web. It features concisely summarized information for anyone interested in toxicity testing and alternative (non-animal) test methods. Content provided in the TTRC is reviewed by a group of internationally-recognized subject matter experts.

The Way Forward invited commentaries, which are posted in the TTRC, are opinion pieces written by experts in each relevant subfield. These essays are meant to help chart the course for future developments by advancing opportunities to overcome challenges and barriers to progress. Stakeholders are invited to comment on these essays in the *AltTox Forum*.

You are welcome to send a message to jan@turi.org if you would like more information on any of these resources. Also, please tell us what topics you are particularly interested in monitoring, and who else should see Greenlist. An online search of the TURI Library catalog can be done at http://library.turi.org for greater topic coverage.

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