

Greenlist Bulletin

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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 are welcome to send a message to mary@turi.org if you would like more information on any of the articles listed here, or if this email is not displaying properly.



Sustainable denim manufacturing process creates 'green' jeans

[Source: American Chemical Society, June 19, 2012](#)

WASHINGTON, June 19, 2012 - Like sausage, making denim jeans isn't pretty.

Some estimates suggest that producing one pair of jeans requires more than 2,500 gallons of water, nearly a pound of chemicals and vast amounts of energy. Multiply that by 2 billion - the number of jeans produced worldwide every year - and you get a snapshot of an industry that contributes a hefty share of wastewater and greenhouse gases to the environment.

But an emerging greener chemistry process, described today at the 16th annual Green Chemistry & Engineering Conference, could help change all of that. The conference (www.gcande.org) is sponsored by the American Chemical Society's Green Chemistry Institute® (ACS GCI).

The process, called Advanced Denim, can produce a pair of jeans using up to 92 percent less water and up to 30 percent less energy than conventional denim manufacturing methods, according to Miguel Sanchez, a textile engineer at Clariant, a specialty chemical company based in Muttenz (near Basel), Switzerland, that developed Advanced Denim. In addition, it generates up to 87 percent less cotton waste (which is often burned, adding carbon dioxide and other greenhouse gases to the atmosphere) and virtually no wastewater.

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BPA exposure effects may last for generations

[Source: The Endocrine Society, June 15, 2012](#)

Chevy Chase, MD--Exposure to low doses of Bisphenol A (BPA) during gestation had immediate

and long-lasting, trans-generational effects on the brain and social behaviors in mice, according to a recent study accepted for publication in the journal *Endocrinology*, a publication of The Endocrine Society.

BPA is a man-made chemical present in a variety of products including food containers, receipt paper and dental sealants and is now widely detected in human urine and blood. Public health concerns have been fueled by findings that BPA exposure can influence brain development. In mice, prenatal exposure to BPA is associated with increased anxiety, aggression and cognitive impairments.

"We have demonstrated for the first time to our knowledge that BPA has trans-generational actions on social behavior and neural expression," said Emilie Rissman, PhD, of the University of Virginia School of Medicine and lead author of the study. "Since exposure to BPA changes social interactions in mice at a dose within the reported human levels, it is possible that this compound has trans-generational actions on human behavior. If we banned BPA tomorrow, pulled all products with BPA in them, and cleaned up all landfills tomorrow it is possible, if the mice data generalize to humans, that we will still have effects of this compound for many generations."

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From pomegranate peel to nanoparticles

[Source: Inderscience Publishers, June 19, 2012](#)

Environmentally friendly approach to making silver nanoparticles

Food waste is a growing problem in many parts of the world, but discarded fruit peel, in the case of pomegranates, could be put to good use in the burgeoning field of nanotechnology according to research published in the *International Journal of Nanoparticles*.

Punica Granatum, the pomegranate is native in northern India and has been cultivated and naturalized over the whole Mediterranean region since ancient times. The fruit extract is a rich source of highly potent antioxidants.

Now, botanist Naheed Ahmad of Patna University and physicist colleague Seema Sharma of AN College, also in Patna, India, are working together to exploit the skin of pomegranates as a reducing agent for making silver nanoparticles. The team says their approach to these widely researched and technologically invaluable nanoparticles represents a more environmentally benign method than the use of "chemical" reducing agents and industrial solvents. The process also precludes the need to heat the reaction mixture as it proceeds at ambient temperature.

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The risks of the very small

[Source: European Agency for Safety and Health at Work, June 20, 2012](#)

There are serious gaps in our awareness of the potential risks involved in handling nanomaterials at work, and serious shortcomings in the way that those risks are communicated to workplaces, according to a new literature review from the European Agency for Safety and Health at Work (EU-OSHA).

We are facing nanotechnology in our everyday life in many products and applications. Although health and environmental hazards have been demonstrated for some manufactured nanomaterials, they are used in food, cosmetics, textiles, paints, sporting goods, electronics, detergents, and many health and fitness products. And they are present in many workplaces, too. Currently, there are over 1,000 consumer products listed, produced by more than 500 companies in 30 countries. 300,000 to 400,000 jobs in the EU deal directly with nanotechnology and manufactured nanomaterials are handled in many more workplaces down the supply chain; 75% of them are small and medium-sized enterprises.

In its review of current research on the subject, EU-OSHA found that communication of the potential risks posed by such materials is still poor, with a majority of Europeans (54%), not even knowing what nanotechnology is. Even in workplaces where manufactured nanomaterials are

found, the level of awareness is low. For example, 75% of workers and employers in construction are not aware they work with them.

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Nano-pesticides: Solution or threat for a cleaner and greener agriculture?

[Source: University of Vienna, June 20, 2012](#)

Nanotechnology has developed tremendously in the past decade and was able to create many new materials with a vast range of potential applications. Some of those innovative materials are promising to reduce environmental pollution. For instance, carbon nanotubes and metal nano-particles are great candidate materials for cleaning polluted water and soils.

However, the risk that nano-particles may pose to human and environment health is not yet fully understood. The precautionary principle therefore suggests keeping environmental release of nano-particles minimal until their fate and toxicity is better understood. "A good understanding of nano-materials is essential to evaluate whether the benefits overcome potential new risks", explains Thilo Hofmann, dean elected at the Faculty of Geosciences, Geography and Astronomy of the University of Vienna.

Among numerous proposed applications, nanotechnology has the potential to revolutionize agricultural practices and food systems. Research has been extremely active over the past few years to develop new pesticides products based on nanotechnology. "Nano-pesticide research is emerging at high speed at the agrochemical labs, however, this topic has not reached public awareness or state authorities so far, nor are any products available on the market. Since those nano-pesticides have new or enhanced properties, this will change in near future and will inevitably result in both new risks and new benefits to human and environmental health", states Thilo Hofmann.

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California Gov. Brown seeks new regulations for fire retardants

[Source: The Sacramento Bee, June 19, 2012](#)

Author: David Siders

Gov. Jerry Brown urged state regulators Monday to reduce the prevalence of chemical flame retardants in household furniture, joining a growing number of critics who argue the chemicals are toxic and unnecessary.

"Toxic flame retardants are found in everything from high chairs to couches and a growing body of evidence suggests that these chemicals harm human health and the environment," the Democratic governor said in a prepared statement. "We must find better ways to meet fire safety standards by reducing and eliminating - wherever possible - dangerous chemicals."

The directive follows the defeat last year of legislation that would have let furniture manufacturers avoid using chemical flame retardants in their products by providing an alternative test for meeting state fire prevention standards.

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New ChemSec tool will enable investors to evaluate the chemical industry

[Source: The International Chemical Secretariat, June 20, 2012](#)

Hazardous chemicals are highly problematic from a health and environmental point of view, however their production and use also entail huge financial risks. Financial investors who want to avoid that risk can put pressure on companies to move away from hazardous chemicals, and to open up and be more transparent about their chemicals management. Today, ChemSec presents a concrete criteria catalogue that will enable financial investors to assess the performance of the chemical industry.

Chemical producing companies are often non-transparent and do rarely include their core business

- chemicals - in their sustainability reporting. Financial investors have a unique possibility to influence the development of companies, and can request information from chemical producers before investing in them.

There is growing interest in sustainable investments that take environmental aspects into consideration besides financial analysis. However, until now issues such as energy efficiency and water usage have dominated the area of sustainable investments, and chemicals have rarely been included.

Access the full publication [here](#).

Map Outlines Lead Safety for California Artificial Turf Fields

[Source: Center for Environmental Health, June 13, 2012](#)


Nonprofit health organization screened more than 500 fields in the state for lead risks to children

OAKLAND, CA-- The Center for Environmental Health (CEH) has screened more than 500 artificial turf fields in California for lead, in response to concerns that some older turf fields may have high levels of lead. CEH has posted an online map showing lead levels for more than 300 California fields in 18 counties that are publicly accessible, and the good news is that most turf fields do not pose a lead threat.

"We're pleased to tell parents and schools that lead is not a problem in most turf fields," said CEH Turf Testing and Outreach Coordinator Matt Nevins. "If anyone nationwide has concerns, they can still receive free turf screening from CEH."

CEH has been screening artificial turf fields since last July. CEH staff traveled the state to screen turf fields, and hundreds of child care centers, schools, park administrators and concerned residents have sent turf samples to CEH for free lead screening. In addition to the map, a CEH online video outlines steps consumers can take to minimize exposure to lead from turf fields and on how to receive free turf screening from CEH.

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