TINY TECH

It's a nano world after all

Last month Canadian researcher Ted Sargent was named one of *Scientific American* magazine's 50 award winners for 2005 for his groundbreaking work in nanotechnology. The University of Toronto professor has developed a sprayable material that can capture far more sunlight than conventional flexible solar cells—an innovation that could help make green energy viable.

As scientists push the boundaries of technology, nanotechnology in particular holds promise for revolutionizing the way we live. By building materials from the bottom up—designing molecules atom by atom—it is possible to tailor-make materials with new and sometimes unexpected properties.

Nanomaterials can be far stronger, lighter, more electrically conductive, elastic, and magnetic than conventional materials. Scientists have created extraordinary products with nanotechnology: LCD flat screens, stain-resistant fabrics, and self-cleaning windows, to name just a few.

And now researchers are realizing the environmental potential of nanotechnology. Already, nanoparticles have been shown to render PCBs non-toxic, and injecting them into contaminated soils or polluted groundwater could remove a host of dangerous chemicals.

Nanotechnology can also bring safer alternatives to the products we still use. LCD flat screens, for example, are helping to reduce our use of lead, of which conventional television sets contain several kilos.

But, like with any technology, nanotechnology is not without environmental risks—nanoparticles have the potential to disrupt biological systems in ways that their larger counterparts can not. They can penetrate cell membranes, and may be able to interfere with our own molecules, like DNA and proteins, and there is no toxicological data for many of the nanomaterials that are already on the market.

However, as scientists increasingly turn to technology to salvage our planet from ecological disaster, it may be that the smallest designs will make some of the biggest contributions. —*Zoe Cormier*

JENNA MARIE WAKANI

DRINK OUTSIDE THE BOX

Überbrewers put culture in a keg

Organizing free political film screenings, publicizing the impacts of Wal-Mart coast-to-coast and campaigning against polluting ad trucks are just a few examples of what überculture, a non-profit collective committed to reclaiming culture from corporate clutches, is up to. Perhaps a result of all this thirsty work, a new initiative has them teaming up with local microbreweries to produce Canada's (and North America's) first political beer, überbrü.

The all-natural hemp ale was launched last fall in Montreal as a non-corporate alternative to an industry dominated by a few large multinational corporations. "People now recognize that when you buy a cup of coffee there are international, economic and political connections. For us, beer is no different," says überculture co-founder Rob Maguire. "We want to take the whole concept of fair trade coffee and apply it to beer."

Word of mouth has already made überbrü a popular staple at Reggie's, a Concordia University bar, and at a growing number of Montreal locations. It's also grabbing attention in Vancouver, where it has been available since January, and there are plans to introduce the beer to other cities.

To cut down on environmental costs from transportation, and to support small-scale breweries, Maguire says überbrü will be made locally in any city it bubbles up in. Profits from the sales are split roughly down the middle, giving local microbreweries a fair cut, and the rest providing what Maguire hopes will one day be sustainable funding for über-culture's activism.

"We're not deluded in thinking we're going to put a dent in Molson's sales by ourselves, or overnight," says Maguire, "but we're hoping that this will be a drop in the bucket, so to speak."
—*Aimée van Drimmelen*

Rob Maguire, left, and Ezra Winton hope to make activist beer the smart alternative.