

One of the most exciting parts of the current eco-revolution is the contribution that engineers and scientists are making to the greening of our planet. Ideas that had been collecting dust from their inception when Jimmy Carter was president and we had our first big oil crisis, are being reexamined and upgraded with the current technology. Here are a few examples:

Batteries

The Rensselaer Polytechnic Institute in Troy, New York, has developed a battery that looks like a piece of paper. It can be bent, twisted, trimmed with a scissors or molded into any shape. This Flexible Energy Storage Device uses paper infused with an electrolyte and carbon nanotubes. The carbon nanotubes form the electrodes, the paper is the separator and the electrolyte allows the current to flow.

On PBS's Nova Science NOW, engineers are using carbon nanotubes in a sensor system designed to measure cracks or stress points on our highway bridges.

Solar Updates

Researchers at the Massachusetts Institute of Technology (MIT) have developed a light-absorbing dye that, when painted on a window, transfers energy via the glass into solar cells at the window's edges. If the dye-coated glass is placed atop a solar panel, wavelengths of light that sneaks through the glass can be converted into electricity by the panel.

MIT's Marc Baldo reported, "We saw approximately 30 percent higher performance in the combined system compared to a stand-alone solar cell. We think that ultimately this approach will allow us to nearly double the performance of existing solar cells for minimal added cost."

The MIT folks say their "solar concentrator" is inexpensive, easy to manufacture, and could be marketed within three years

The Grist (www.grist.org) reported that Konarka Solar has developed a new process to manufacture solar cells. The solar cells

are made without silicon and are manufactured into a thin, light film using an inkjet printer. These cells do not need to be manufactured in a clean room like traditional silicon cells. One drawback is their efficiency: while regular silicon solar cells achieve efficiencies of up to 20 percent, the new cells are only 5 percent efficient. Experts say they will likely to be less expensive, can be incorporated into plastics, and come in a range of different colors.

Alternative gases

While American researchers have been experimenting with ways to capture the methane that is emitted by cattle flatulence, New Zealand researchers are trying to prevent it. Their agricultural research organization was able to map the genome that causes methane in ruminant animals and are working on a vaccine to prevent it. Cows and sheep are responsible for about 90 percent of methane emissions in New Zealand.

Japanese scientists have demonstrated that oil from the shell of the cashew nut when mixed with feed, may cut the methane emissions from cattle burps by some 90 percent. The cashew-derived cattle-belch suppressant could be on sale within four years.

Green picnics

Remember to bring your reusable table settings to your next picnic. You can also help the park district save money by recycling your beverage containers and bringing home your compostables and trash.

Web site correction

The eGO Cycle can be found in Napa at www.bigkidtoys.com (707 256-3300).

VALCORE Recycling Board Member Jane Bogner's "A Sorted Affair" is published every other week in the Times-Herald. For recycling information call VALCORE Recycling at 645-8258 or visit www.VALCORErecycling.org. ## E N D ##