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A Cloth to Cut the Mercury Risk From Light Bulbs

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Incandescent light bulbs are on the way out by 2012, thanks to Congress, meaning for now at least that compact fluorescent lamps are on the rise. The spiral-shaped tubes last longer and use much less electricity than conventional bulbs, both good things. But they contain small amounts of the neurotoxin mercury, a bad thing.

Compact fluorescents are supposed to be recycled so that the mercury (which is in vapor form) can be dealt with properly. But the tubes do occasionally crack or break, and the recycling rate is currently low, so mercury could be released in homes or elsewhere, posing a small risk to children.

Robert H. Hurt, an engineering professor at [Brown University](#), along with a student, Natalie C. Johnson, and others, set out to see what could be done to reduce the risk. They report in *Environmental Science and Technology* that they have developed a material that can capture the mercury released from a broken tube.

The researchers experimented with tiny particles of sulfur, copper, nickel and other elements to see how well mercury was absorbed onto them. Selenium, in particular, has a well-known affinity for mercury, and the researchers found that particles of it with a size from about 10 to 600 nanometers were capable of binding with almost all of the mercury from a lamp.

The researchers say this “nanoselenium,” impregnated in cloth, could be used in packaging for new lamps (in case of breakage during shipment) or for cleaning up a broken lamp in the home. Plastic bags used to hold recycled compact fluorescents could also be treated with the material.

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