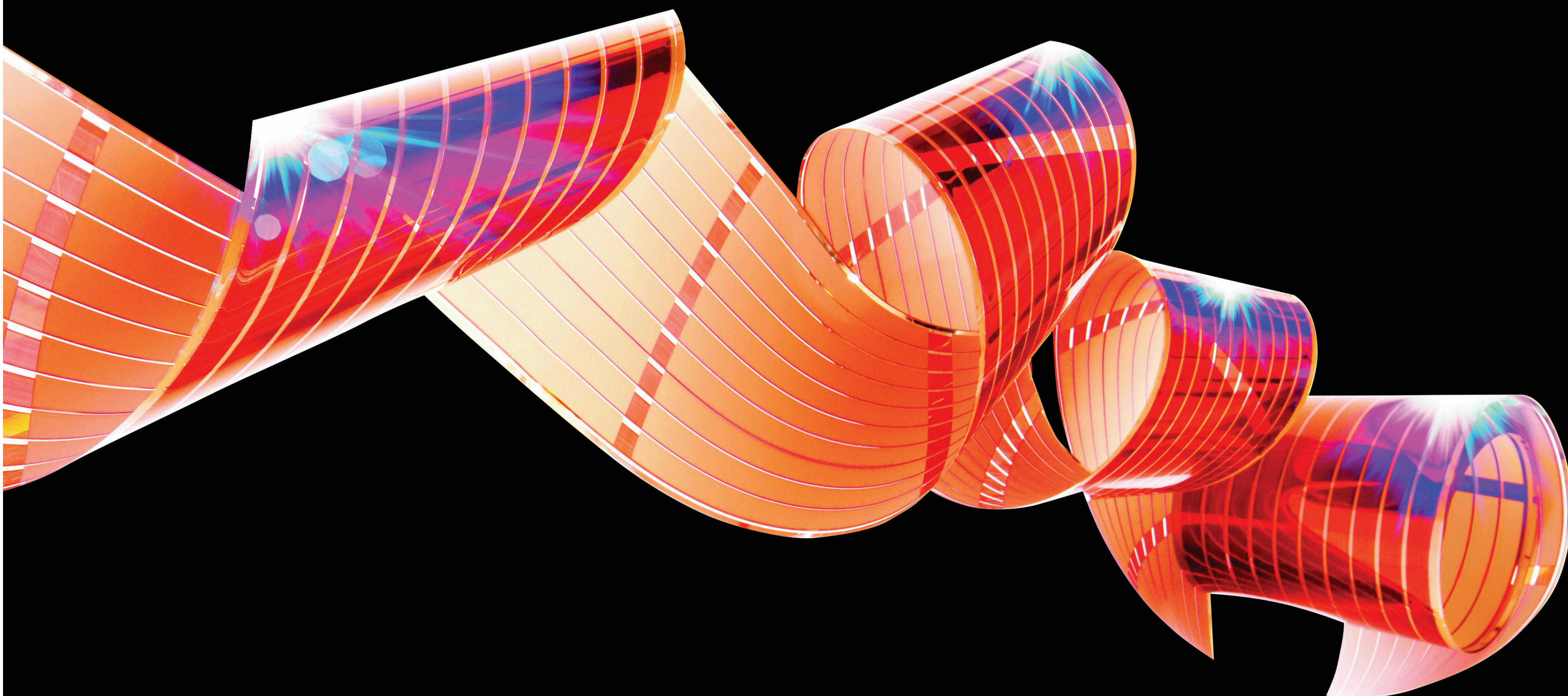


Will nanotechnology solve our energy crisis?



Nanotechnology is improving how we harness the sun's energy.

Nanotechnologies could deliver world-altering changes in the ways we create, transmit, store, and use energy. Scientists are working to develop super-efficient batteries, low-resistance transmission lines, and cheaper solar cells. However, the likelihood and time frame of these developments is unknown.

The next generation of solar cells is thin film solar cells—flexible sheets of solar panels—that are easier to produce and install, use less material, and are cheaper to manufacture. These sheets can be incorporated into a briefcase that charges your laptop, woven into wearable fabrics that charge your cell phone and iPod, or incorporated into windows that can supply power to high-rise buildings.

Nanotechnology-enabled energy production and distribution has the potential to solve a number of pressing energy issues. Reworking our enormous, highly integrated energy infrastructure will not be an easy task. How can these new technologies fit into domestic energy policies to best benefit society?

What is nano?

Nano is the scientific term meaning one-billionth (1/1,000,000,000). At this size, the size of atoms and molecules, materials take on new properties. Nanotechnology is the manipulation of materials at the nanoscale to take advantage of these properties. For more info visit www.whatisnano.org

Will nanotechnology improve living conditions around the world?

Nanofilters can produce safe drinking water.

In many parts of the world, people don't have access to safe drinking water. New nanofiber water filters can remove bacteria, viruses, heavy metals and organic materials from water. They're relatively inexpensive and easy to use, so nanofilters could be widely employed in developing countries.

Providing pure drinking water would help prevent disease in many parts of the world, but it wouldn't resolve many basic inequalities.



Emerging technologies can help us address specific problems, but there's no "magic bullet" to improve life for all human beings. How can we develop and share promising nanotechnologies in ways that are equitable and responsible?

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What's hidden in *your* sunblock?

Many sunblocks contain nanoparticles.

If your sunblock rubs in clear, it might contain nanoparticles. Nanosized particles of zinc oxide or titanium dioxide are too small to reflect light, so they don't leave a white film on skin. The label will tell you the ingredients in your sunblock, but it doesn't have to say what size the particles are.

Although studies suggest that the sunblocks are safe for humans, some people worry that the tiny nanoparticles may impact the environment when they wash off our skin.

Nanotechnologies are difficult to regulate because they're hard to detect and to define, and we don't really know how safe or dangerous they are. Do you think manufacturers should be required to let you know if their products contain nanotechnology? Would you use a sunblock with nanoparticles in it on your skin?

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