**Global Challenges/Chemistry Solutions**

**New fuels: The sun and more: Transparent solar cells for windows that generate electricity**

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Today’s episode describes development of a new transparent solar cell, an advance toward giving windows in homes and other buildings the ability to generate electricity while still allowing people to see outside.

The study is the topic of a report in the journal, ACS Nano.

Yang Yang, Ph.D., who is the lead author and is at the University of California, Los Angeles, explains that there has been intense world-wide interest in so-called polymer solar cells (PSCs), which are made from plastic-like materials. PSCs are lightweight and flexible and can be produced in high volume at low cost. That interest extends to producing transparent PSCs. But previous versions of transparent PSCs have had many disadvantages, which the team set out to correct.

Here’s Yang:

*“We developed a new kind of PSC that produces energy by absorbing mainly infrared light, not visible light, making the cells 66 percent transparent to the human eye. We made the device from a photoactive plastic that converts infrared light into an electrical current.”*

Another breakthrough with the product is that the transparent conductor, made of a mixture of silver nanowire and titanium dioxide nanoparticles, can replace the opaque metal electrode used in the past.

Paul Weiss, Ph.D., who collaborated on the study, had this to add:

*“Using this composite electrode also allowed the solar cell to be fabricated economically.*  *And this new product has multiple uses.* *These panels could be used in smart windows and portable electronics.”*

**Smart Chemists/Innovative Thinking**

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Today’s podcast was written by Michael Bernstein. I’m Adam Dylewski at the American Chemical Society in Washington.