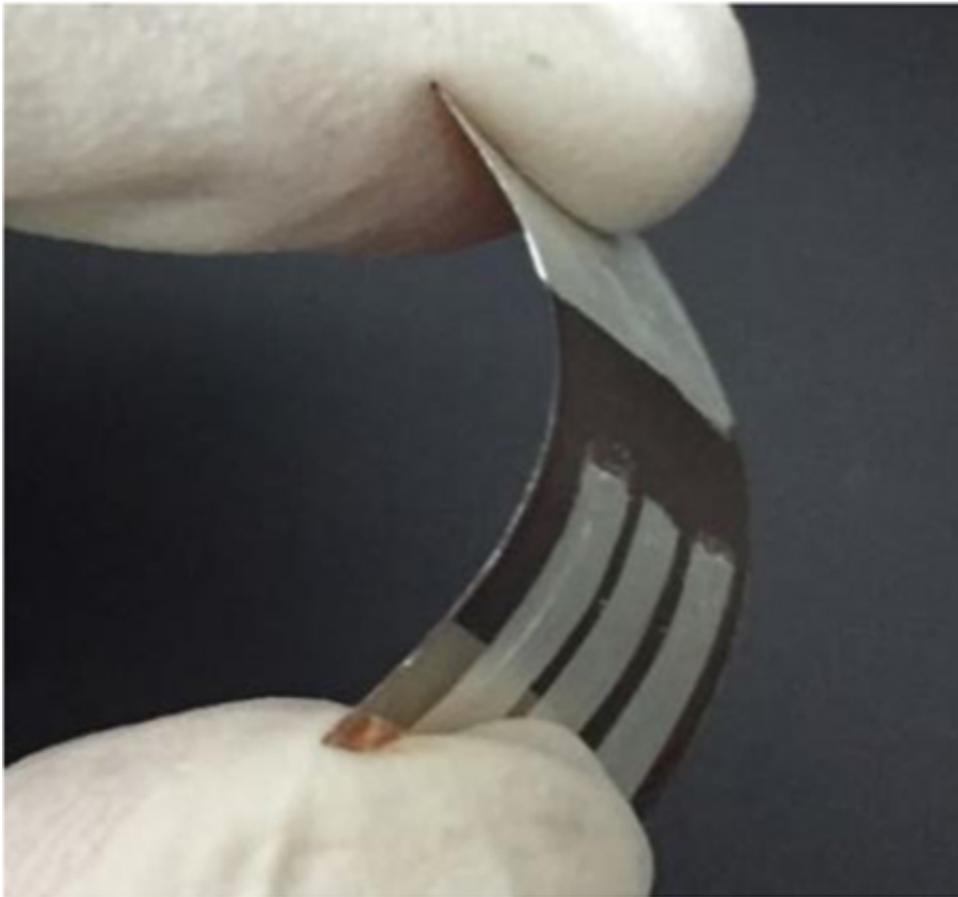


All-plastic solar cell could help power future flexible electronics

June 25 2015



Plastic solar cells could help power flexible electronics in a sustainable way.
Credit: American Chemical Society

If you picture a solar panel, it's most likely dark blue or black, and rigid and flat. Now imagine one that's semitransparent, ultra-thin and

bendable. Scientists are closing in on making the latter version a reality. They report in the journal *ACS Applied Materials & Interfaces* the development of a see-through, bendable solar cell made entirely out of plastic. The device could help power the coming wave of flexible electronics.

Most [solar cells](#) you see on rooftops or in large power-plant arrays are made of relatively heavy and stiff materials. But this version doesn't lend itself to small or flexible electronics. So Yinhua Zhou and colleagues are investigating lighter-weight plastics to see if they can come up with a better way to address this need for a sustainable energy source for future gadgets.

The researchers built a solar cell by applying a conductive polymer film to a plastic surface and treating it with phosphoric acid to enhance the rate at which an electric current can pass through it. Their tiny, 10-square-millimeter (0.015-square-inch), all-plastic cell reached a voltage of 0.84 volts (a typical AAA battery produces 1.5 volts).

More information: "Conductivity Enhancement of PEDOT:PSS Films via Phosphoric Acid Treatment for Flexible All-Plastic Solar Cells" *ACS Appl. Mater. Interfaces*, Article ASAP [DOI: 10.1021/acsami.5b03309](https://doi.org/10.1021/acsami.5b03309)

Provided by American Chemical Society

Citation: All-plastic solar cell could help power future flexible electronics (2015, June 25) retrieved 19 April 2024 from <https://phys.org/news/2015-06-all-plastic-solar-cell-power-future.html>

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