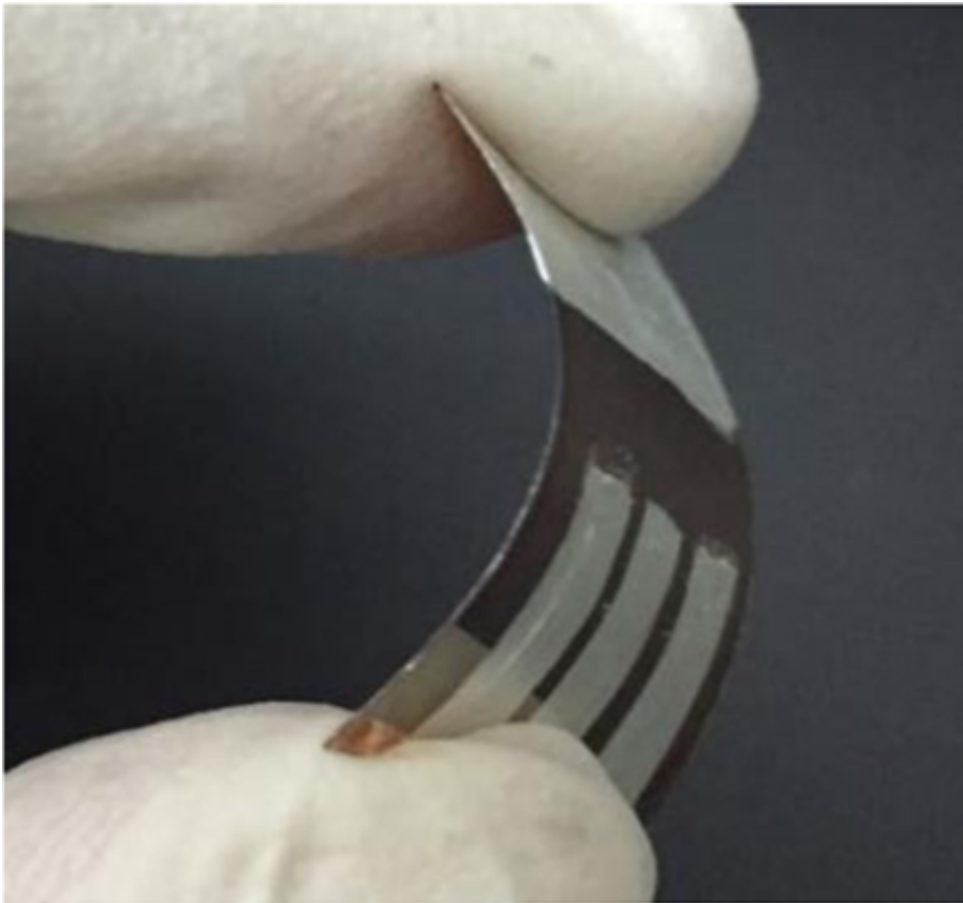


All-plastic solar cell could help power future flexible electronics

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 20 April 2024 from <https://phys.org/news/2015-06-all-plastic-solar-cell-power-future.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.