Flexible electronics could find applications as sensors, artificial muscles, Electronics, Arg...

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Flexible electronic structures with the potential to bend, expand and manipulate electronic devices are being developed by researchers at the U.S. Department of Energy's Argonne National Laboratory and the University of Illinois at Urbana-Champaign. These flexible structures could find useful applications as sensors and as electronic devices that can be integrated into artificial muscles or biological tissues.

In addition to a biomedical impact, flexible electronics are important for energy technology as flexible and accurate sensors for hydrogen.

These structures were developed from a concept created by Argonne scientist Yugang Sun and a team of researchers at the University of Illinois led by John A. Rogers. The concept focuses on forming single-crystalline semiconductor nanoribbons in stretchable geometrical configurations with emphasis on the materials and surface chemistries used in their fabrication and the mechanics of their response to applied strains.

“Flexible electronics are typically characterized by conducting plastic-based liquids that can be printed onto thin, bendable surfaces,” Sun said. “The objective of our work was to generate a concept along with subsequent technology that would allow for electronic...
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