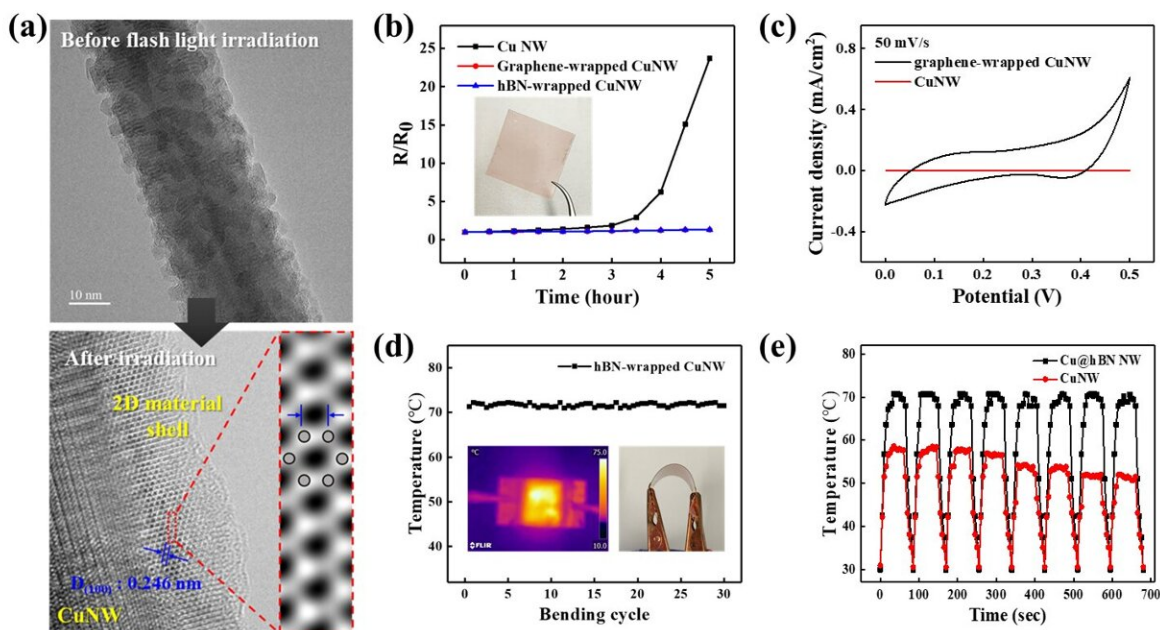


Researchers synthesize graphene using intense light

March 31 2023



Credit: DGIST (Daegu Gyeongbuk Institute of Science and Technology)

DGIST Professor Yoonkyu Lee's research team used intense light on the surface of a copper wire to synthesize graphene, thereby increasing the production rate and lowering the production cost of the high-quality transparent-flexible electrode materials and consequently enabling its mass production. The results were published in the February 23 issue of *Nano Energy*.

This technology is applicable to various 2D materials, and its applicability can be extended to the synthesis of various metal-2D material nanowires.

The research team used copper-graphene nanowires to implement high-performance transparent-flexible electronic devices such as transparent-flexible electrodes, transparent supercapacitors and transparent heaters and to thereby demonstrate the commercial viability of this material.

DGIST Professor Yoonkyu Lee said, "We developed a method of mass-producing at a low production cost the next-generation transparent-flexible electrode material based on high-quality copper-[graphene](#) nanowires. In the future, we expect that this technology will contribute to the production of core [electrode](#) materials for high-performance transparent-flexible electronic devices, semitransparent solar cells, or transparent displays."

More information: Jongyoun Kim et al, Ultrastable 2D material-wrapped copper nanowires for high-performance flexible and transparent energy devices, *Nano Energy* (2022). [DOI: 10.1016/j.nanoen.2022.108067](#)

Provided by DGIST (Daegu Gyeongbuk Institute of Science and Technology)

Citation: Researchers synthesize graphene using intense light (2023, March 31) retrieved 26 June 2024 from <https://phys.org/news/2023-03-graphene-intense.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.