Macro Roundup Article

Headline: The Scientific Breakthrough That Could Make Batteries Last Longer

Article Link: https://www.wsj.com/articles/superconductor-breakthrough-energy-reddmatter-90dfa165

Author(s)	Aylin Woodward
Publication	Wall Street Journal
Publication Date	March 09, 2023

Tweet: Researchers at the University of Rochester report in @Nature that they have created a superconductor that can operate at room temperature, which would have significant implications for batteries and electrical transportation. @WSJ

Summary: A group of researchers at the University of Rochester report that they have created a new superconductor that can operate at room temperature and a much lower pressure than previously discovered superconducting materials. Superconductors demonstrate what physicists call the Meissner effect, when a material expels its magnetic field. If you put a superconductor near a magnet, it will levitate. For the new study, which was published Wednesday in the journal Nature, the researchers tweaked their superconductor recipe—adding nitrogen and a rare-earth metal known as lutetium to the hydrogen instead of sulfur and carbon—and once again heated and squeezed it in the diamond anvil cell. They named the resulting material “,” after observing how the material’s hue changed from blue to pink to red as it got compressed. The Rochester lab found that “reddmatter” could exist at 69 degrees Fahrenheit and 145,000 pounds per square inch, or psi, of pressure—about 1/360th of the pressure in Earth’s core. That is about a 10-degree Fahrenheit increase in temperature and a drop to about 1/1000th of pressure compared with its predecessor from 2020.

Related Articles: nan

Primary Topic: Science

Topics: Factoid, Innovation/Research, News article, Other science, Science

Permalink: https://www.edwardconard.com/macro-roundup/researchers-at-the-university-of-rochester-report-in-nature-that-they-have-created-a-superconductor-that-can-operate-at-room-temperature-which-would-have-significant-implications-for-batteries-and-e?view=detail