Reddmatter

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In news– Scientists have discovered a new superconducting material named Reddmatter that could revolutionise the world.

About superconducting material-

- It **can transmit electricity without resistance and pass magnetic fields around it,** making it a breakthrough discovery that scientists have been pursuing for more than a century.
- The **material works at both a low temperature and low pressure**, which could allow it to be used in practical applications, such as power grids and nuclear fusion.
- **The discovery of this material, nicknamed "reddmatter," could save up to 200 million megawatt hours that are currently lost due to resistance in power grids**.
- It could also be **used in high-speed**, hovering trains and new types of medical equipment.
- **The material was created by mixing a rare earth metal named lutetium with hydrogen** and **nitrogen** and then subjecting it to high temperatures for two to three days.
- The material still needs to be heated to 20.5 degrees Celsius and compressed to about 145,000 psi to work, but this is less intense than other similar materials.
- The scientists involved in the research say that this material will mark a new era for the practical use of superconducting materials.

Superconductivity Breakthrough

Researchers at the University of Rochester revealed they created a superconductor dubbed 'reddmatter.' Usually these materials operate at extreme temperatures and pressures. But 'reddmatter' works at room temperature and a lower pressure than other superconducting materials. Here's how the researchers achieved it.

These 'reddmatter' samples were made and studied in a device called a **diamond anvil cell**, or DAC. The device enables scientists to test materials under different pressures to see if those materials are superconducting, while also tweaking the temperature with a laser.

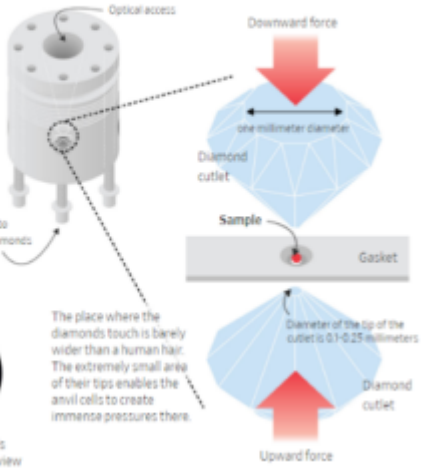

Photo of the diamonds inside the anvil cell, side view