Scientists Develop Innovative Refrigeration Method

Description

Ionocaloric cooling is a new method to lower temperatures. It may replace current cooling methods with a safer, eco-friendly option. Traditional refrigeration systems use a fluid to absorb heat and move it away. However, some materials used in these systems are harmful to the environment.

Researchers from the Lawrence Berkeley National Laboratory and the University of California, Berkeley, introduced the ionocaloric method in 2023. This method uses energy changes when a material changes from solid to liquid, like ice turning to water. When heat raises the temperature of ice, it melts and absorbs heat from its surroundings, cooling them.

To help ice melt without adding heat, the ionocaloric cycle uses charged particles, or ions. This method also employs salt to change a fluid's phase, which cools the area around it. The researchers have run tests using salt with iodine and sodium to melt ethylene carbonate. This may make the system friendly to the climate.

The team found that they could achieve a temperature change of 25 °C with less than one volt of charge. They aim to develop the technology further for commercial use. This could help countries reduce harmful gases, as promised in international agreements.

CATEGORY

1. Health - LEVEL2

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