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DEPARTMENT OF
SCIENCE & TECHNOLOGY
सत्यमेव जयते

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TECHNOLOGY
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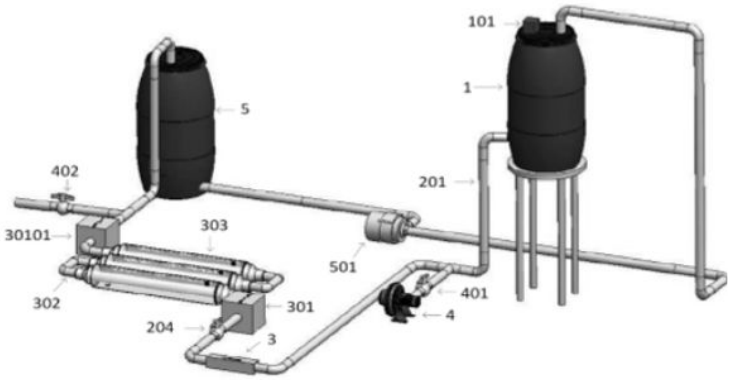
PENDING

(IN202411093479) Phase change material based water cooling system



NEED

Industrial cooling systems face high energy consumption, with limited efficiency in heat management. A phase change material (PCM) based water cooling system offers an energy-efficient solution to this problem by leveraging thermal energy storage.

TECHNOLOGY OVERVIEW

This PCM-based water cooling system uses a phase change material within a concentrically designed module to absorb heat from hot water during the charging process. An air blower then circulates air to release the stored heat during the discharging process. The system offers efficient heat management without continuous water flow.

TECHNOLOGY KEY FEATURES

Energy-efficient, water-saving, phase change material integration, controllable air and water flow, modular design, temperature regulation, scalable for continuous cooling, eco-friendly, no continuous water flow during discharge.

Read more here

MARKET ANALYSIS

The global market for cooling systems is expected to grow at a CAGR of 7.2% through 2033, driven by increasing demand for energy-efficient solutions in industrial, HVAC, and residential sectors. Regulatory pressure on reducing energy consumption is also a key driver.

Target Industries

1) Industrial cooling solution providers, 2) HVAC manufacturers, 3) Residential cooling system developers.

AT A GLANCE

- SDG 6 (Clean Water and Sanitation), SDG 7 (Affordable and Clean Energy), SDG 9 (Industry, Innovation, and Infrastructure), SDG 13 (Climate Action)

Technology is available for licensing/ co-development.

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