

LOW TEMPERATURE PHASE CHANGE MATERIAL WITH HIGH LATENT HEAT

Seeking parties interested in licensing and commercialization of technology.

Technology Brief

This technology discloses an organic eutectic phase change material (PCM) engineered specifically for low-temperature thermal energy storage and passive cooling applications. Formulated from organic fatty acids, the eutectic mixture exhibits a tailored phase change melting temperature of 20.86 °C combined with a remarkably high latent heat storage capacity of 156.99 J/g. The material demonstrates robust thermal and chemical stability through rigorous accelerated thermal cycling tests, providing a sustainable, eco-friendly solution to store thermal energy and reduce grid power dependence for cooling without releasing pollutants or greenhouse gases.

Technical Applications

This low-temperature phase change material is ideally suited for integration into energy-efficient building cooling systems, such as PCM-infused ceiling panels, wallboards, and underfloor thermal management systems to maintain comfortable indoor temperatures passively. Additionally, it can be deployed in cold-chain logistics, temperature-sensitive pharmaceuticals and food storage packaging, agricultural storage facilities, and solar-assisted thermal energy storage systems requiring steady room-temperature regulation.

Salient Features

- ✓ High Latent Heat Capacity
- ✓ Organic & Environmentally Sustainable
- ✓ Exceptional Thermal Reliability

Glimpse of the Technology



REFERENCE NUMBER

iTNT-TECH-0199



TECHNOLOGY SECTOR

Clean Energy & Sustainability



IP STATUS

Patent Granted



APPLICATION NUMBER

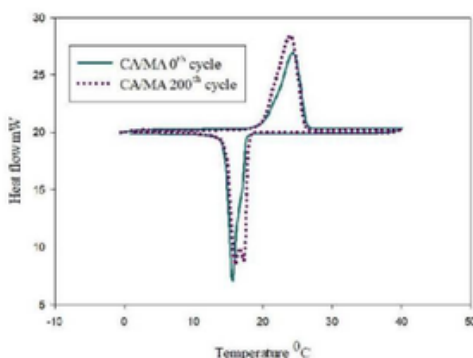
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TECHNOLOGY READINESS LEVEL

TRL 3

Block Diagram



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