

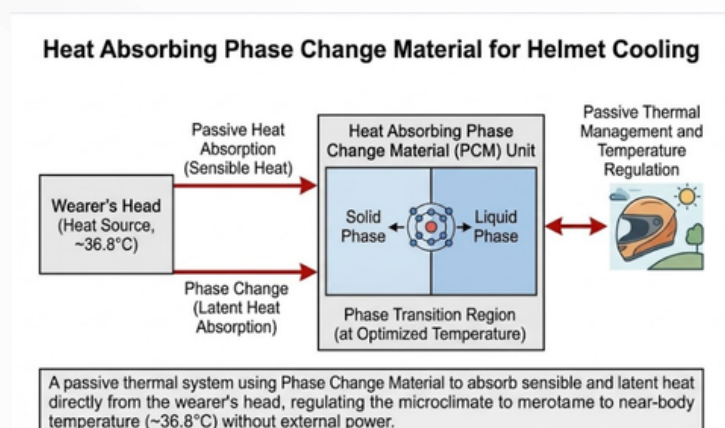
Heat Absorbing Phase Change Material for Helmet Cooling

Seeking parties interested in licensing and commercialization of technology.

Technology Brief

A thermal management system designed for helmets that utilizes heat-absorbing material to overcome the discomfort and heat buildup common in conventional protective headwear. By actively absorbing excess thermal energy directly from the wearer's head, the material regulates the microclimate inside the helmet, maintaining the head temperature near normal human body temperature ($\sim 36.8^{\circ}\text{C}$). This passive cooling solution operates efficiently without requiring external power, moving parts, or bulky cooling arrangements. By preventing heat accumulation, it mitigates thermal stress and fatigue, significantly enhancing wearer comfort during prolonged use in hot weather or demanding operational environments.

Block Diagram



Technical Applications

This thermal management technology is designed primarily for two-wheeler riders, providing passive cooling inside motorcycle and scooter helmets during daily commutes or long journeys. By absorbing heat and preventing thermal discomfort, it improves rider focus, reduces heat-induced fatigue, and encourages consistent helmet wear in hot climates.

Salient Features

- ✓ Optimized Operating Range
- ✓ Passive Heat Absorption
- ✓ Enhanced Wearer Comfort

Glimpse of the Technology



REFERENCE NUMBER

iTNT-TECH-0180



TECHNOLOGY SECTOR

Biotech & Healthcare



IP STATUS

Patent Granted



APPLICATION NUMBER

201941046636



TECHNOLOGY READINESS LEVEL

TRL - 2

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