

Supercooled Salt Hydrate Based Heat Battery System

Publieke samenvatting / Public summary

Aanleiding

Creating compact, scalable heat storage is crucial for the ongoing energy transition, recognized by both the government and energy experts. Pioneering materials and systems for clean, renewable energy are vital to tackle pressing societal issues like global warming, aligning with the imperative shift towards sustainable practices and environmental responsibility.

Doelstelling

The SuperHeat project aims to advance small- and large-scale thermal storage technologies based on phase change materials (PCM) (MMIP4:3). This will be achieved by introducing an affordable heat storage battery that utilizes a developed metastable supercooled GELSAT. The modular battery offers high storage density, flexibility, and reliability.

Korte omschrijving

The SuperHeat project is developing a modular heat battery that uses supercooled salt hydrate PCM (GELSAT). The project will follow a phased approach, beginning with an extensive material development phase, followed by the maximization of power output through advanced manufacturing techniques. Smart triggering mechanisms will be implemented for precise control, and a smart heat exchanger will be designed to optimize efficiency. The project concludes with: - Maximize power output using advanced manufacturing techniques. - Implement smart triggering mechanisms for precise control. - Design a smart heat exchanger for

Projectinformatie / Project information

Projectnummer / Project number
TKITOE2321402

Subsidiebedrag / Grant amount
€ 400.000,00

Algemene informatie / General information

Penvoerder / Secretariat
Universiteit Twente

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optimized efficiency. - Develop modular heat battery with supercooled salt hydrate PCM. - Conduct rigorous prototype testing for technology validation (10KWH).

Resultaat

SuperHeat is developing an innovative heat battery based on PCM technology, which provides flexible short- and long-term storage solutions tailored to specific applications. This initiative offers cost-effective, intelligent, and highly efficient heat batteries that align seamlessly with the goals of the MMIP4 program.

De data in deze applicatie is afkomstig van de Rijksdienst voor Ondernemend Nederland (RVO) en wordt in samenwerking met de Topsector Energie ontsloten.

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