

Reliable Containment of High-Temperature Molten Halide Salts for Thermal Energy Storage

Track Code: 2020-SAND-69026

Categories:

- Chemical Engineering
- Materials and Manufacturing

Keywords:

- Chemical Engineering
- Chemical Processing
- Coatings
- Energy Production
- Energy Storage
- Energy Systems
- Material Development
- Materials and Manufacturing
- Materials Science
- Packaging and Containers
- Salt
- Valves

Researchers at Purdue University have developed a new liner design for molten salt containment devices in thermal energy storage applications. Molten halides are attractive low-cost fluids for use as elevated temperature thermal energy storage media for electricity- and heat-generating systems. However, such molten salts are challenging to contain owing to their tendency to penetrate low-cost porous liner materials in tanks and pipes. Purdue researchers have developed a new, low-cost, multi-layer liner strategy for the reliable containment of molten salts. This new strategy may be readily implemented in thermal energy storage tanks, pipes, and other containment devices for electricity and heat production systems.

Advantages

- Cost-Effective Containment of Molten Halide Salts
- Reliable Containment of Molten Halide Salt

Potential Thermal Energy Storage Applications

- Electricity Production
- Waste Heat Recovery
- Chemical Processing

People:

- Sandhage, Kenneth H Henry (Project leader)

Intellectual Property:

Application Date: April 1, 2021

Type: Utility-Gov. Funding

Country of Filing: United States

Patent Number: (None)

Issue Date: (None)

Application Date: April 1, 2020

Type: Provisional-Gov. Funding

Country of Filing: United States

Patent Number: (None)

Issue Date: (None)

Contact OTC:

Purdue Office of Technology Commercialization

The Convergence Center

101 Foundry Drive, Suite 2500

West Lafayette, IN 47906

Phone: (765) 588-3475

Fax: (765) 463-3486

Email: otcip@prf.org