High-Temperature Heat Transfer and Thermal Energy Storage Materials

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Categories:
- Chemical Engineering
- Civil Engineering

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- Chemical Engineering
- Civil Engineering
- Energy
- Energy Conversion
- Energy Production
- Energy Storage
- Heat Transfer
- Low Cost
- Power Management
- Salt
- Solar
- Solar Technology

Researchers at Purdue University have developed a new alternative to molten salts for high-temperature heat transfer and thermal energy storage in concentrating solar power plants by integrating low-cost, low-melting chloride salts, which are resistant to oxidation, last long-term, and are reliable as they are chemically stable at 750oC. Traditional molten salts can cause air leaks, are often expensive, and must be closely monitored during use. By integrating the approach fine-tuned by Purdue researchers, energy production can now be streamed in pipelines and thermal energy storage (TES) tanks for nuclear power plants, hydrothermal power plants, and concentrating solar energy plants. In addition, simulation has shown that chloride-based salts are 8Xs less the cost of molten salts in operation.

Advantages:
-Low Melting
-Reliable
-Oxidation Resistant
-Long Lasting
-8Xs Lower Cost Over Traditional Molten Salts
-Chemically Stable in Air at 750oC

Potential Applications:
-Concentrated Solar Plants
-Energy
-Storage/Production

People:

- Sandhage, Kenneth H (Project leader)

Intellectual Property:

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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