AmpedTES™ An Approach to Improve Heat Transfer in Thermal Energy Storage

CLAIM:

Improve the heat transfer in thermal energy storage systems without compromising heat storage capacity.

NOVELTIES:

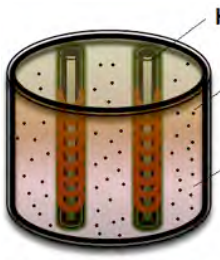
- Utilizes an external, alternating electromagnetic field
- Induces significant artificial vibration/translation of the particles
- Rapidly increases the heat transfer in TES
- Added high conductivity metallic particles

ADVANTAGES:

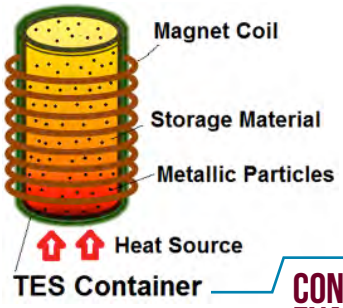
- Application specific
- High energy density
- Tunable heat transfer enhancement
- Light weight
- Low cost
- Scalable

POTENTIAL APPLICATIONS:

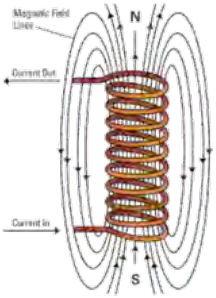
- Power generation: solar, geothermal
- Waste heat recovery
- Thermal management of defense/military electronics
- Space based power generation systems
- Battery thermal management in automobiles
- Dairy industry (pasteurization)
- Greenhouses



CONFIGURATION 1 EXAMPLE



CONFIGURATION 2 EXAMPLE



MAGNETIC FIELD DIRECTION

Faraday's law of induction

INVENTOR(S) EXPERTISE

Dr. Sarada Kuravi, Assistant Professor
MAE Department, NMSU Research Area:
Renewable Energy and Thermal Systems
http://retherms.nmsu.edu

Dr. Hector Gutierrez, Professor
MAE Department, Florida Institute of Technology
Research Area: Electromagnetics

For more information please contact:
Terry Lombard at 575.646.2791 or
tlombard@nmsu.edu

ARROWHEAD CENTER®

NM STATE