

Sustainable material solutions

Life Cycle Analysis
Driving the circular economy
Process and material improvement

Materials for Energy

Materials for Thermal energy storage
Elastocaloric polymers



Advanced Additive manufacturing and 3D printing

Robocasting or Direct Ink Writing
Stereolithography-based additive manufacturing
Fused deposition modelling

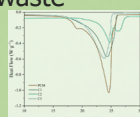
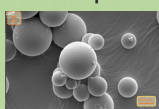
Innovative materials in construction

Alkali-activated cements (AAC)
Waste valorization
Magnesium phosphate cement (MPC)
Activated Clays for Green Cement

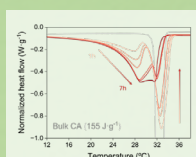
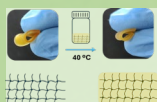
Latent heat storage materials

Organic PCM

- ✓ Doping with nanoparticles: exhaustive characterization
- ✓ Development of microencapsulated PCM. Shell material from plastic waste

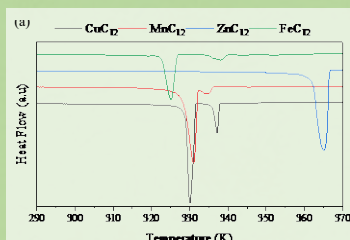
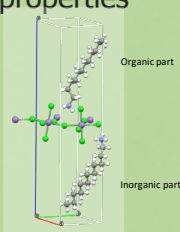


- ✓ Shape-stabilized phase change materials based on natural rubber: Tailoring thermophysical properties via matrix network design



- ✓ Solid-Solid PCM

Design Layered Hybrid Organic Inorganic Perovskites LHOIP's tailoring thermophysical properties



Schematic representation of a Layered Hybrid perovskite.

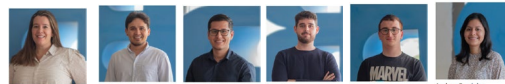
Thermochemical storage materials

- ✓ Natural vs secondary carnallite as TCM
- ✓ Lattice structures for reactor design

Team RedTES



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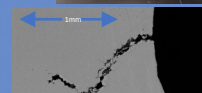
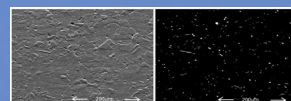
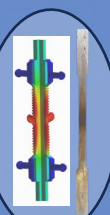
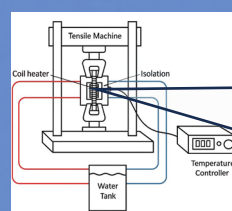
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Sensible heat storage materials for high temperature applications

Materials for containers

- ✓ High-Temperature Creep Performance of Stainless Steel Exposed to Solar Salt



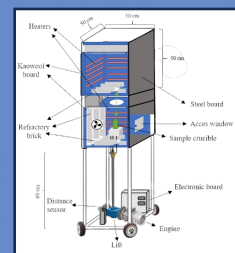
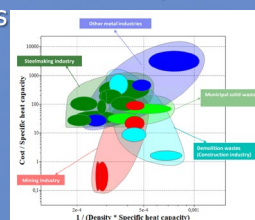
Molten salts systems

- ✓ Nanofluids: modeling and characterization
- ✓ Corrosion studies of different pairs



Solid particles as storage medium and/or HTF

- ✓ Benchmarking and characterization of natural solids and secondary materials and industrial wastes



LCA - LCT

