



Smartrec



Management of waste heat by a modularised solution for heat recovery and thermal storage.

www.smartrec.eu



Challenges

To find an economically viable method of recovering waste heat from a manufacturing process.

Solution

To model and develop a heat pipe heat exchanger that recovers at least 40-60% of process heat and stores it in a dual media thermocline (molten salt and solid material) with heat transport via a pumped molten salt loop. In parallel, to develop a software tool to allow users to determine requirements and benefits for their own systems. Smartrec will be piloted in the secondary aluminium recycling and ceramics processing sectors but is transferrable between industries.

Benefits

A successful Smartrec system will ensure strategic impact with clear environmental and socio-economic benefits.

- Better management of corrosive flue gas and challenging sources of high grade heat
- On-site continuous heat output from batch processes
- Direct reduction in natural gas used in furnaces and heaters
- Waste-heat re-use (e.g. water or air heating, electricity generation) and reduction of CO₂ emissions
- Transferrable, modular technology for application to other industries
- Enhancement of state-of-the-art heat exchange technology in challenging environments and molten salt energy storage



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