



MERITS

A RECHARGEABLE HEAT BATTERY

THIRD MERITS NEWSLETTER - JULY 2014

Dear sir/madam,

the past half year was full of interesting developments in the MERITS project on system, component, and material level. In addition to the scientific progress, the second MERITS film-item on the heart of the MERITS system has recently been released! The film item along with other MERITS news can be found below.

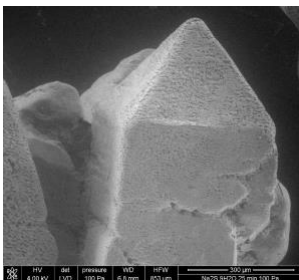
Short term store development



To integrate the rechargeable heat battery developed in the MERITS project effectively with the supply of energy and the energy usage in the system, short term buffering of energy is required. MERITS partner Glen Dimplex, together with the partners University of Lleida, University of Ulster and VITO, is developing the short term energy store solution. Two solutions are considered for the system, one based on sensible heat storage in water, the other a combination of sensible and latent heat storage.

[Read more](#)

MERITS materials research



Sodium sulfide (Na_2S) is considered as a high potential candidate material for thermochemical energy storage. In comparison with other known materials it has a relatively high energy storage density under operating conditions, while desorption occurs at relatively low temperatures ($<83\text{ C}$). The stability of the material was assessed at TNO, and several enhanced material properties were determined using various methods of characterization and cycling of the material.

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EVENTS

EUROTHERM SEMINAR #99: ADVANCES IN THERMAL ENERGY STORAGE

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SHC 2014 - INTERNATIONAL CONFERENCE ON SOLAR HEATING AND COOLING FOR BUILDINGS AND INDUSTRY

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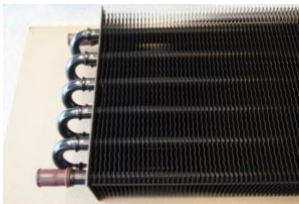
Thermal energy storage seminar in Lleida



GREA Innovacio Concurrent, a research group from MERITS partner Universitat de Lleida (UdL), lead by prof. dr. Luisa F. Cabeza, has recently organized the conference EURO THERM SEMINAR 99, "Advances in Thermal Energy Storage".

[Read more](#)

MERITS coating development



One of the challenges for realizing a thermochemical heat storage system using hydration and dehydration of Na_2S is protecting metal system components from corrosion. Corrosion problems are threatening metal components, active material stock is depleted and vapor transport is affected.

[Read more](#)

System design & integration



In recent months in Work Package 5, System design and integration, the main progress has been made in developing the models of different configurations for the "Only-heating scheme" and analyzing the influence of the size of the main components in the efficiency of the whole system (i.e. a sensitivity analysis of the main components).

[Read more](#)

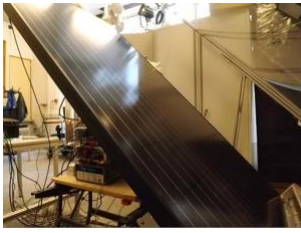
Second MERITS film item released



The second MERITS film item from the General Board meeting in Duiven, the Netherlands, is released.

[Read more](#)

Dedicated MERITS solar collectors



In the MERITS system high temperatures are needed to feed the thermochemical storage (TCS) system. In winter, also low temperature heat is required for discharging of the TCS. With an assumed limited roof area, standard flat plate collectors (FPC) will not harvest enough high temperature solar energy. Vacuum tube collectors can deliver higher temperatures but they take up relatively much (gross) space on the roof. We therefore needed to develop a solar thermal collector optimized for the demands of the system.

[Read more](#)

We will be back at the end of the year with more inspiring results on heat battery development and testing achievements. In the meantime: check our website at www.merits.eu, or contact us with your questions or requests at info@merits.eu!

with best regards, the MERITS Team

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