

# Master-Thesis: Experimental Investigation of Evaporation/Condensation for Hydration Storage Systems



## AEE INTEC

AEE – Institute for Sustainable Technologies (AEE INTEC) is an independent research association which was founded in 1988. Currently over 60 employees from 8 different nations are working at AEE INTEC. Furthermore, the institute regularly awards dissertations, master theses and internships. The activities of AEE INTEC include:

- fundamental as well as applied research
- national and international R&D projects
- cooperation with universities, technical colleges, other research facilities and industry

The three major departments of AEE INTEC are “Thermal Energy Technologies and Hybrid Systems”, “Buildings and Renovation” as well as “Industrial Processes and Energy Systems”.

## Research Project

The EU-funded project CREATE has the goal to develop and demonstrate an innovative seasonal storage technology, which is based on the hydration of salts, like sodium sulfide. As a project partner, AEE INTEC has the tasks to develop and test the demonstration plant and the related components. After the laboratory tests, the storage system will be installed and operated in a family house in Warsaw for a year.

The research topic of the thesis is to test different designs of the evaporator / condenser at lower pressure, which is a key component in the storage system. Its purpose is to provide vapor for the hydration or to condensate the vapor released from the salt hydrates. With its optimization, an improvement of the overall performance of the system can be achieved.

## Outline of the Master-Thesis

- Doing literature research on the subject of water evaporation and condensation
- Adjustment of an existing test rig for the measurements
- Performing dedicated experiments with different designs of the evaporator/condenser
- Analysis of the experimental results and comparison with theoretical predictions
- Summarizing the activities, methods and insights in an academic thesis (master-thesis)

## We expect...

- Solution-focused, autonomous and motivated attitude to work
- Knowledge in the field of heat engineering
- Interest in experimental investigations and practical work

## We offer...

- Salaried position with a master-thesis embedded in a current international research-project
- Supervision by experienced researchers and highly qualified technical support
- *Period:* Starting now, lasting for 6 months
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