


INNOSTORAGE IRSES-610692		Deliverable number:	D7.2
		Title:	Report on Staff Exchange

INNOSTORAGE – USE OF INNOVATIVE THERMAL ENERGY STORAGE FOR MARKED ENERGY SAVINGS AND SIGNIFICANT LOWERING CO₂ EMISSIONS

Beneficiaries:




Partners:




D7.2 - Report on Staff Exchanges

	Name and Institution	Date
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1 Objectives

Develop and test industrial TES Systems

2 Introduction

The research teams at the Energy and Thermal Sciences Centre at Lyon are famous for their work lead by Prof. Kuznik in on energy storage using heat of adsorption and chemical reaction.

3 Description of work

I have not done any experimental work during the period I spent at the Centre but had a continuous discussion with both Prof. Frederic Kuznik and Dr. Kevyn Johannes on how to improve the existing TES system they have through efficient recovery of the energy available in the produced water vapour.

4 Materials and Methodology

I have visited the labs and discussed possible improvement of the TES system. I have also edited a paper written by Prof. Kuznik.


Results

Written a paper with the team entitled: "Thermodynamic Efficiency of Water Vapour/ Solid Chemical Sorption Heat Storage", which was sent for publication to the journal "ENERGY".

During the period I was invited to give a keynote talk "How can we make the use of phase change materials in buildings economically feasible" in EuroSun, 11-14 October, 2017, Palma, Spain

5 Outcomes or future work

- Met and agreed to host the student Engie Crotet to work with my team at University of Auckland during the period from 3 April to 31 August, 2017. She will be working in the area of energy storage with chemical reaction.
- In energy storage using hydration/ dehydration reaction of salts or zeolite, it is important to recover the latent heat of the vapour generated during dehydration; otherwise the process will not be energy efficient. For future collaboration I have suggested using phase change Materials in combination with these storage systems for that purpose.

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6 References

7 Assessment

Prof. Kuznik was very busy and I had limited contact time with him, however our discussion has led to the establishment of a new collaboration program between the two institutions as mentioned in the report. I was meeting Dr. Kevyn Johannes almost daily and since he was starting a new project on energy storage with chemical reaction, we agreed to exchange information about the topic for the benefit of both parties.