INNOSTORAGE

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

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INNOSTORAGE

SEVENTH FRAMEWORK PROGRAMME

MARIE CURIE ACTIONS

Innovació concurrent GREA

Main Data

- The European Project with title:

INNOSTORAGE

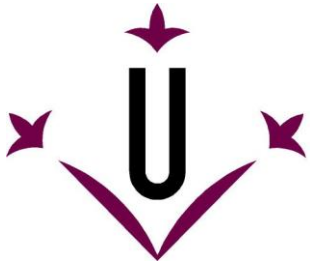
USE OF INNOVATIVE THERMAL ENERGY STORAGE FOR MARKED ENERGY SAVINGS AND SIGNIFICANT LOWERING OF CO2 EMISSIONS

- Has a duration of 48 months, it started on November 1st, 2013
- Is a project from The 7th Framework Program - International Research Staff Exchange Scheme (IRSES)
- *Universitat de Lleida*, is the institution responsible for the coordination

Participants

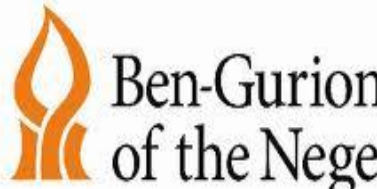
- Beneficiaries

UNIVERSITAT DE BARCELONA



Universitat de Lleida

UNIVERSITÉ DE LYON



Ben-Gurion University of the Negev

- Partners

THE UNIVERSITY OF AUCKLAND
NEW ZEALAND
Te Whare Wānanga o Tāmaki Makaurau

University of South Australia

AUBURN
UNIVERSITY

Objectives

- Overall objective of the program
  - Extend, enhance and strengthen collaboration between partners

- Overall objective of the project
  - Improve the development in PCM, its encapsulation and its use in different types of applications with the final aim of commercialization in Europe.

Details of the technical objectives

1. Development of new materials, with special emphasis to cost.
2. Determination of the thermophysical properties of the materials to be used.
3. Modelization of materials and systems, especially after validation
4. Industrial applications of the phase change materials (PCM).
5. PCM in construction elements.
6. Environmental evaluation of the technology, systems and materials developed

Work Packages explanation 1

WP 1 - Material development and characterisation

- Develop new materials to be used in thermal energy storage
- Look for possible existing materials to be used in thermal energy storage, especially low cost materials, including wastes and by-products
- Characterise the newly developed materials or the newly considered materials
- Compare and contrast characterisation procedures for testing of thermal energy storage materials

WP 2 - Building applications

- Develop new construction components and systems with PCM
- Develop new TES active systems for buildings
- Test the new develop components and systems at lab and pilot plant scale

WP 3 – Industrial applications

- Use of TES for refrigeration applications
- Use of TES for solar cooling, CSP and other high temperature applications
- Waste heat recovery and reuse through TES

Work Packages explanation 2

WP 4 – Modelling

- Modelisation of building components including PCM
- Modelisation of building TES systems
- Modelisation of PCM tanks and other components, such as heat exchangers
- Modelisation of TES systems

WP 5 – Training

- To set up the training strategy of the overall INNOSTORAGE project
- To ensure training of ESR
- To organise training activities

WP 6 – Dissemination

- Disseminate the project results
- Communicate findings to the scientific community, the industry and the society

WP 7 – Management

- Establishing and leading the management team
- Monitoring and reporting
- Financial administration

Joint Activities

- Within the project we will carry out some activities with the aim of disseminate the outcomes and training
  - Eurotherm Seminar 99
    - Advances in Thermal Energy Storage
  - 3 Training Schools
    - Advanced TES for building and industrial applications
    - Modelling of TES components and systems
    - Experimental apparatus for measurements
  - An International Conference

Activity already done:

- Eurotherm Seminar - www.eurothermseminar99.eu

  Advances in Thermal Energy Storage

  This conference took place in *Universitat de Lleida*, 28-30 May, 2014. 170 people attended from 25 countries and presented 105 research works.

- 1st Training School

  Advanced TES Materials for Building and Industrial Applications.

  Universitat de Barcelona, 25-27 June, 2014.

Secondments and Figures

- In order to achive all the objectives the participants in the project will travel between the institutions.
- These trips are know as Secondments

136

68 Secondments

From Overseas Participants (The University of Auckland, University of South Autralia, Auburn University)

To Beneficiaries (Universitat de Lleida, Universitat de Barcelona, Lyon University, Ben Gurion University of The Negev)

68 Secondments

From Beneficiaries (Universitat de Lleida, Universitat de Barcelona, Lyon University, Ben Gurion University of The Negev)

To Overseas Participants (The University of Auckland, University of South Autralia, Auburn

36

14 People

From Overseas Participants (The University of Auckland, University of South Autralia, Auburn University)

To Beneficiaries (Universitat de Lleida, Universitat de Barcelona, Lyon University, Ben Gurion University of The Negev)

22 People

From Beneficiaries (Universitat de Lleida, Universitat de Barcelona, Lyon University, Ben Gurion University of The Negev)

To Overseas Participants (The University of Auckland, University of South Autralia, Auburn

Figures

- The Funding Received is distributed between the activities we will carry out and the trips (mobility allowance and travel allowance)

Benefits of the Project

The project will bring some benefits to those involved and others:

- Energy Savings
- Environmental gains
- Commercial Benefits
- Knowledge transfer to Students and Researchers and between research groups
- Future collaborations between partners
- New contacts with other researchers
- Improvements in the careers of the researchers and students through the secondments and the joint activities such us the training schools and the conferences

Acknowledgments

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Thank you for your attention

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