



Solid-state reactions for thermal energy storage

Fact Sheet

Project Information

SOLSTORE

Grant agreement ID: 752520

[Project website](#)

DOI

[10.3030/752520](https://doi.org/10.3030/752520)

Project closed

EC signature date

8 March 2017

Start date

15 March 2017

End date

14 March 2019

Funded under

EXCELLENT SCIENCE - Marie Skłodowska-Curie Actions

Total cost

€ 161 590,22

EU contribution

€ 161 590,22

Coordinated by

CENTRO DE INVESTIGACION
COOPERATIVA DE ENERGIAS
ALTERNATIVAS FUNDACION,
CIC ENERGIGUNE FUNDAZIOA



Spain

Objective

In this project proposal reversible solid-state chemical reactions (eutectoids, peritectoids) are proposed for the storing of thermal energy at high temperature (300-800 °C). The development of a novel heat storage concept, based on solid-solid reactions, proposed in this project, could contribute to open new scenarios in the thermal energy storage field. To the best of our knowledge, the use of this class of reactions for TES applications has not been explored so far. The goal of this study is the identification of solid-state reactions fulfilling a large number of scientific and technological requirements (high storage capacity, good thermal conductivity, mechanical and chemical stability, complete reversibility of a charging/discharging

cycles etc.).

For this scope, an interdisciplinary research strategy will be followed involving materials chemistry, physics and engineering disciplines to achieve a complete overview of their behaviour starting from basic research challenges, focused on the material development and characterization (reactivity, stability, kinetic, reversibility, heat and mass transfer etc.), up to arrive to the investigation of their feasibility in real applications (e.g. concentrated solar power technologies (CSP) and waste heat recovery).

During the project a two direction transfer of knowledge will be applied. On one side, an intense training will be offered to the applicant by the host laboratory with the objective to increase his scientific and managerial skills. Secondment in one established European technological center with recognized international expertise in concentrating solar plants (CSP) technologies is also planned. On the other side, the applicant will make available the knowledge and competences matured along his career both to give an impulse to the scientific work and fulfil the objectives set in the project and to explore other funding opportunities and collaborations.

Fields of science (EuroSciVoc)

[engineering and technology](#) > [environmental engineering](#) > [energy and fuels](#) > **[renewable energy](#)**

[engineering and technology](#) > [mechanical engineering](#) > [thermodynamic engineering](#) > **[heat engineering](#)**

[engineering and technology](#) > [electrical engineering, electronic engineering, information engineering](#) > [electrical engineering](#) > [power engineering](#) > [electric power generation](#) > **[combined heat and power](#)**

[engineering and technology](#) > [nanotechnology](#) > **[nano-materials](#)**

[natural sciences](#) > **[chemical sciences](#)**



Programme(s)

[H2020-EU.1.3. - EXCELLENT SCIENCE - Marie Skłodowska-Curie Actions](#)

MAIN PROGRAMME

[H2020-EU.1.3.2. - Nurturing excellence by means of cross-border and cross-sector mobility](#)

Topic(s)

[MSCA-IF-2016 - Individual Fellowships](#)

Call for proposal

[See other projects for this call](#)

Funding Scheme

[MSCA-IF-EF-CAR - CAR – Career Restart panel](#)

Coordinator



**CENTRO DE INVESTIGACION COOPERATIVA DE ENERGIAS ALTERNATIVAS
FUNDACION, CIC ENERGIGUNE FUNDAZIOA**

Net EU contribution

€ 121 445,96

Total cost

€ 121 445,96

Address

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 **Spain** 

Region

Noreste > País Vasco > Araba/Álava

Activity type

Research Organisations

Links

[Contact the organisation](#)  [Website](#) 

[Participation in EU R&I programmes](#) 

[HORIZON collaboration network](#) 

Participants (1)



UNIVERSITE DE BORDEAUX 

 **France**

Net EU contribution

€ 40 144,26

Address

PLACE PEY BERLAND 35

33000 Bordeaux 

Region

Nouvelle-Aquitaine > Aquitaine > Gironde

Activity type

Higher or Secondary Education Establishments

Links

[Contact the organisation](#)  [Website](#) 

[Participation in EU R&I programmes](#) 

[HORIZON collaboration network](#) 

Total cost

€ 40 144,26

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Permalink: <https://cordis.europa.eu/project/id/752520>

European Union, 2025