Spin-Phonon interaction for Energy Conversion

Fact Sheet

Project Information

SPEC
Grant agreement ID: 894006

Funded under
EXCELLENT SCIENCE - Marie Skłodowska-Curie Actions

Total cost
€ 172 932,48

EU contribution
€ 172 932,48

Coordinated by
UNIVERSIDAD DE SANTIAGO DE COMPOSTELA
Spain

Project terminated on 31 August 2021

Start date
15 September 2020

End date
14 September 2022

Project description

Research explores spintronic materials that control heat flow

Conventional CMOS scaling seems to be reaching a state of terminal decline: heat generation is a major hurdle that impedes progress toward smaller, faster chips. Spintronic circuits based on magnetic insulators, which do not conduct electric charge but can transport spin, are a promising remedy for these problems. In this regard, insulating transition metal oxides can be designed to show low heat dissipation while showing different types of complex magnetic order. The EU-funded SPEC project plans to explore magnon–phonon interactions in certain magnetic insulating materials. The focus will be on optimising the heat-into-electrical energy
conversion through spin currents (spin Seebeck effect) and to identify the conditions for large thermal rectification.

**Fields of science**

natural sciences > chemical sciences > inorganic chemistry > inorganic compounds  
natural sciences > physical sciences > electromagnetism and electronics > spintronics  
engineering and technology > environmental engineering > energy and fuels > energy conversion

**Keywords**

Spin Caloritronics  
magnon-phonon interactions  
magnetic oxides

**Programme(s)**

H2020-EU.1.3. - EXCELLENT SCIENCE - Marie Skłodowska-Curie Actions  
H2020-EU.1.3.2. - Nurturing excellence by means of cross-border and cross-sector mobility

**Topic(s)**

MSCA-IF-2019 - Individual Fellowships

**Call for proposal**

H2020-MSCA-IF-2019

See other projects for this call

**Funding Scheme**

MSCA-IF - Marie Skłodowska-Curie Individual Fellowships (IF)

**Coordinator**
UNIVERSIDAD DE SANTIAGO DE COMPOSTELA

Net EU contribution

€ 172 932.48

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Region

Noroeste > Galicia > A Coruña

Activity type

Higher or Secondary Education Establishments

Links

Contact the organisation
Website
Participation in EU R&I programmes
HORIZON collaboration network

Other funding

€ 0.00

EC signature date 20 April 2020
Last update: 24 July 2023

Permalink: https://cordis.europa.eu/project/id/894006

European Union, 2023