Material properties in the strong light-matter coupling regime

Fact Sheet

Project Information

MaP

Grant agreement ID: 882173

Funded under
EXCELLENT SCIENCE - Marie Skłodowska-Curie Actions

Total cost
€ 184 707,84

EU contribution
€ 184 707,84

DOl
10.3030/882173

Project terminated on 31 December 2021

Coordinated by
UNIVERSITE DE STRASBOURG
France

Start date
1 April 2021

End date
31 March 2023

Project description

A new window on the strong coupling of quantum light and matter in a vacuum

Over the last three decades, the physics of strong light–matter coupling has been explored theoretically and, more recently, experimentally. The achievement of weak and strong coupling of quantum light and matter has enabled the increased control of quantum systems and applications in quantum sensing and information processing. Polaritons are mixed light–matter particles arising from the strong coupling between excitons (a bound state of an excited electron and an associated hole) and photons. The light–matter coupling and the resulting polaritons arise from the vacuum
conditions of the confined 2D semiconductor microcavity. The EU-funded MaP project is extending the realm of previous investigations into the matter component of the light–matter coupling. An innovative platform promises to shed light on mechanisms responsible for vacuum field-assisted charge transport and phase transitions of matter induced by coupling.

**Fields of science**

natural sciences > physical sciences > electromagnetism and electronics > semiconductivity

natural sciences > chemical sciences

**Keywords**

Strong light-matter coupling  Vacuum field fluctuations  Cavity quantum electrodynamics

**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**
UNIVERSITE DE STRASBOURG

Net EU contribution
€ 184 707,84

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Rue blaise pascal 4
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Region
Grand Est > Alsace > Bas-Rhin

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
18 March 2020

Last update: 24 July 2023

Permalink: https://cordis.europa.eu/project/id/882173

European Union, 2023