NEW FRONTIERS IN PLASMON OPTICS: FROM NANOCHEMISTRY TO QUANTUM OPTICS

Fact Sheet

Project Information

PLASMOLIGHT

Grant agreement ID: 259196

Project closed

Start date
1 April 2011

End date
31 August 2015

Funded under
Specific programme: "Ideas" implementing the Seventh Framework Programme of the European Community for research, technological development and demonstration activities (2007 to 2013)

Total cost
€ 1 146 495,60

EU contribution
€ 1 146 495,60

Coordinated by
FUNDACIO INSTITUT DE CIENCIES FOTONIQUES
Spain

Objective

At this point in time where plasmon optics has become a mature field of research, we propose here to create new bridges with other scientific disciplines in which the optical properties of plasmonic nanostructures could successfully address major

roadblocks. The proposed scientific project consists of two independent parts, in which plasmonics is combined with Nanochemistry and Quantum optics, respectively.

First, we will investigate how plasmonics could contribute to control with nanometer accuracy the deposition of a wide range of molecules or other nano-objects at a surface pre-patterned with noble metal nanostructures. Our approach is foreseen to overpass some of the major limitations of existing methods by combining parallel patterning over large areas with a resolution down to 10nm. Beyond demonstrating the feasibility of this novel approach, we propose to exploit it to increase the sensitivity of bio-chemical plasmonic sensing and surface enhanced Raman scattering.

The second part of the project will study the use of the recent concept of plasmon nano-optical tweezers to develop a novel integrated quantum platform. The developed platform will be tested for applications to quantum simulation.

Fields of science (EuroSciVoc)

natural sciences > physical sciences > **optics**

natural sciences > physical sciences > quantum physics > **quantum optics**

Programme(s)

FP7-IDEAS-ERC - Specific programme: "Ideas" implementing the Seventh Framework Programme of the European Community for research, technological development and demonstration activities (2007 to 2013)

Topic(s)

ERC-SG-PE2 - ERC Starting Grant - Fundamental constituents of matter

Call for proposal

ERC-2010-StG_20091028
See other projects for this call

Funding Scheme

ERC-SG - ERC Starting Grant

Host institution

FUNDACIO INSTITUT DE CIENCIES FOTONIQUES

EU contribution

€ 1 146 495,60

Total cost

No data

Address

AVINGUDA CARL FRIEDRICH GAUSS 3
08860 Castelldefels
Spain

Region

Este > Cataluña > Barcelona

Activity type

Research Organisations

Principal investigator

Romain Quidant (Dr.)

Links

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

Beneficiaries (1)

FUNDACIO INSTITUT DE CIENCIES FOTONIQUES

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Last update: 26 May 2017

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