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NANOstructured active MAGneto-plasmonic MAterials

Fact Sheet

Project Information

NANOMAGMA

Grant agreement ID: 214107

Project closed

Start date
1 November 2008

End date
31 October 2011



Funded under
Specific Programme "Cooperation": Nanosciences,
Nanotechnologies, Materials and new Production
Technologies

Total cost
€ 3 864 554,00

EU contribution
€ 2 963 156,00

Coordinated by
AGENCIA ESTATAL CONSEJO
SUPERIOR DE
INVESTIGACIONES CIENTIFICAS
 Spain

This project is featured in...



Exploration of space: embarking on the final frontier

Objective

The development of a novel concept of nanostructured material is involved in this project: the proper combination of magneto-optical (MO) and plasmonic elements to produce a magneto-plasmonic material tailored on the nanoscale. The novel magneto-plasmonic materials will offer the unique ability to control their properties in more than one way, since the magneto-optical activity will be affected by the alteration of the plasmonic characteristics and the optical response will depend on the magnetic ones. The latter puts an additional advantage over conventional materials, since the optical response can be actively tuned by means of an external agent: a magnetic field. The project has two main goals; the first is to prepare active magneto-plasmonic materials with tailored properties in the nanoscale and understanding the interactions of the magnetic properties with the plasmonic and optical ones, linked to electric charge oscillations. The second goal is to develop prototypes of applications that can benefit of this coupling. Since it is expected that the optical properties of these materials can be driven by using a magnetic field, this will allow designing and developing novel magneto-plasmonic devices. In particular, as a proof of the applicability of this concept, we will design, fabricate and test a prototype of a new kind of surface plasmon resonance (SPR) biosensor with MO elements, i.e. a surface magneto-plasmon resonance (SMPR) biosensor, comparing its performance against standard biosensors.

Fields of science (EuroSciVoc)

[engineering and technology](#) > [electrical engineering](#), [electronic engineering](#), [information engineering](#) > [electronic engineering](#) > [sensors](#) > [biosensors](#)

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



Keywords

[Tailored nanostructures](#)

[core-shell](#)

[magneto-optics](#)

[photonics](#)

[plasmonics](#)

[sensors](#)

Programme(s)

[FP7-NMP - Specific Programme "Cooperation": Nanosciences, Nanotechnologies, Materials and new Production Technologies](#)

Topic(s)

[NMP-2007-2.2-2 - Nanostructured materials with tailored magnetic properties](#)

Call for proposal

FP7-NMP-2007-SMALL-1

[See other projects for this call](#)

Funding Scheme

[CP-FP - Small or medium-scale focused research project](#)

Coordinator



AGENCIA ESTATAL CONSEJO SUPERIOR DE INVESTIGACIONES CIENTIFICAS

EU contribution

€ 546 331,00

Total cost

No data

Address

CALLE SERRANO 117

28006 Madrid

 **Spain** 

Region

Comunidad de Madrid > Comunidad de Madrid > Madrid

Activity type

Research Organisations

Links

- [Contact the organisation](#)
- [Website](#)
- [Participation in EU R&I programmes](#)
- [HORIZON collaboration network](#)

Participants (9)



UNIVERSIDAD AUTONOMA DE MADRID

Spain

EU contribution

€ 144 600,00

Address

CALLE EINSTEIN 3 CIUDAD UNIV CANTOBLANCO RECTORADO
28049 Madrid

Region

Comunidad de Madrid > Comunidad de Madrid > Madrid

Activity type

Higher or Secondary Education Establishments

Links

- [Contact the organisation](#)
- [Website](#)
- [Participation in EU R&I programmes](#)
- [HORIZON collaboration network](#)

Total cost

No data



CENTRE NATIONAL DE LA RECHERCHE SCIENTIFIQUE CNRS

France

EU contribution

€ 418 335,00

Address

RUE MICHEL ANGE 3
75794 Paris 

Region
Ile-de-France > Ile-de-France > Hauts-de-Seine

Activity type
Research Organisations

Links
[Contact the organisation](#)  [Website](#) 
[Participation in EU R&I programmes](#) 
[HORIZON collaboration network](#) 

Total cost
No data



CONSORZIO INTERUNIVERSITARIO NAZIONALE PER LA SCIENZA E
TECNOLOGIA DEI MATERIALI

 Italy
EU contribution
€ 374 400,00

Address
VIA GIUSTI 9
50121 Firenze 

Region
Centro (IT) > Toscana > Firenze

Activity type
Research Organisations

Links
[Contact the organisation](#)  [Website](#) 
[Participation in EU R&I programmes](#) 
[HORIZON collaboration network](#) 

Total cost
No data



CONSIGLIO NAZIONALE DELLE RICERCHE

 Italy

EU contribution

€ 256 216,00

Address

PIAZZALE ALDO MORO 7
00185 Roma 

Region

Centro (IT) > Lazio > Roma

Activity type

Research Organisations

Links

[Contact the organisation](#)  [Website](#) 
[Participation in EU R&I programmes](#) 
[HORIZON collaboration network](#) 

Total cost

No data



CENTRUL INTERNATIONAL DE BIODINAMICA

 Romania

EU contribution

€ 299 079,00

Address

1 B Intrarea Portocalelor
060101 BUCURESTI 

Activity type

Research Organisations

Links

[Contact the organisation](#)  [Participation in EU R&I programmes](#) 
[HORIZON collaboration network](#) 

Total cost

No data



UNIVERSITAET HAMBURG

 Germany

EU contribution

€ 318 011,00

Address

MITTELWEG 177
20148 HAMBURG 

Activity type

Higher or Secondary Education Establishments

Links

[Contact the organisation](#)  [Website](#) 
[Participation in EU R&I programmes](#) 
[HORIZON collaboration network](#) 

Total cost

No data



BIOTECGEN SRL

 Italy

EU contribution

€ 231 400,00

Address

VIA LEUCA 174
73100 Lecce 

Region

Sud > Puglia > Lecce

Activity type

Private for-profit entities (excluding Higher or Secondary Education Establishments)

Links

[Contact the organisation](#)  [Website](#) 
[Participation in EU R&I programmes](#) 
[HORIZON collaboration network](#) 

Total cost

No data



COMMISSARIAT A L ENERGIE ATOMIQUE ET AUX ENERGIES ALTERNATIVES

 France

EU contribution

€ 246 384,00

Address

RUE LEBLANC 25
75015 PARIS 15 

Region

Ile-de-France > Ile-de-France > Paris

Activity type

Research Organisations

Links

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

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

[HORIZON collaboration network](#) 

Total cost

No data



FUNDACION PHANTOMS

 Spain

EU contribution

€ 128 400,00

Address

CALLE ALFONSO GOMEZ 17/2
28037 MADRID 

Activity type

Other

Links

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

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

[HORIZON collaboration network](#) 

Total cost

No data

Last update: 16 July 2019

Permalink: <https://cordis.europa.eu/project/id/214107>

