Home > ... > FP7 >

Hierarchical self-assembly of electroactive supramolecular systems on pRe-patterned surfaces: multifunctional architectures for organic FETs

S Content archived on 2024-06-18



Hierarchical self-assembly of electroactive supramolecular systems on pRe-patterned surfaces: multifunctional architectures for organic FETs

Fact Sheet

Project Information		
HESPERUS		Funded under Specific programme "People" implementing the
Grant agreement ID: 219770		Seventh Framework Programme of the European Community for research, technological
Project closed		development and demonstration activities (2007 to 2013)
Start date 8 April 2008	End date 7 April 2010	Total cost € 162 985,98 EU contribution € 162 985,98 Coordinated by CONSIGLIO NAZIONALE DELLE RICERCHE Italy

This project is featured in...

RESEARCH*EU MAGAZINE

Results Supplement No. 030 - Science, technology, materials and the nanorevolution

Objective

HESPERUS aims at enabling cross-disciplinary training and research at the interface between Electrical Engineering, Supramolecular Chemistry, Materials- and Nano-Science and Physics. The overall goal of HESPERUS is to generate new scientific and technological knowledge by combining supramolecularly engineered nanostructures (SENs), mostly based on organic semiconductors, with tailor-made interfaces to textured solid substrates and electrodes, for fabricating prototypes of two-terminal devices (supramolecular wires) and three-terminal devices (field-effect transistors). The training and research objectives of HESPERUS are: 1. Surface texturing: derivatization of electrically conductive solid substrates and metallic nanostructures to achieve a full control over the surface work-function, wettability and adhesion, thus ultimately to be able to tune the self-assembly of electroactive molecules at surfaces into pre-programmed supramolecular assemblies. 2. Hierarchical self-organization on textured surface of multifunctional SENs based on electrically/optically active functionalized carbon-based (I) 2D nano-objects such as n- and p-type discotics (perylenediimide and hexabenzocoronene derivatives) and (II) polymeric multichromophoric architectures at surfaces on the functionalized substrates. 3. Nanochemistry and nanoprobes: Scanning probes (AFM, STM, KPFM, C-AFM) quantitative time and space resolved characterization of various physico chemical properties of SENs, in particular correlation between structural and electronic properties. 4. Fabrication of supramolecular wires and transistors: Measurement of charge mobility in SENs two- and three-terminal devices varying systematically the wire's (1) chemical composition, (2) conformation, (3) length and (4) doping.

Fields of science (EuroSciVoc) 3

natural sciences > physical sciences > electromagnetism and electronics > semiconductivity engineering and technology > electrical engineering, electronic engineering, information engineering > electrical engineering

Keywords

Chemical engineering

Macromolecular chemistry

Nanoelectronics

Physical chemistry

Programme(s)

<u>FP7-PEOPLE - Specific programme "People" implementing the Seventh Framework Programme of the European Community for research, technological development and demonstration activities (2007 to 2013)</u>

Topic(s)

PEOPLE-2007-2-1.IEF - Marie Curie Action: "Intra-European Fellowships for Career Development"

Call for proposal

FP7-PEOPLE-2007-2-1-IEF See other projects for this call

Funding Scheme

MC-IEF - Intra-European Fellowships (IEF)

Coordinator



CONSIGLIO NAZIONALE DELLE RICERCHE

EU contribution

€ 162 985,98

Total cost

No data

Address

PIAZZALE ALDO MORO 7 00185 Roma

Region

Centro (IT) > Lazio > Roma

Activity type

Research Organisations

Links

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

Last update: 16 July 2019

Permalink: https://cordis.europa.eu/project/id/219770

European Union, 2025