

## EU FUNDS “NANO SCALE ICT DEVICES AND SYSTEMS” COORDINATION ACTION (NANOICT)

The Phantoms Foundation (Spain) has been chosen to coordinate the “Nanoscale ICT Devices and Systems Coordination Action” funded under the Seventh EU Framework Programme. This project aims to reinforce and support the whole European Research Community in “ICT nanoscale devices” covering the following research areas expected to demonstrate unconventional solutions beyond the expected limits of CMOS technology:

1. Demonstration of new concepts for switches or memory cells
2. Demonstration of new concepts, technologies and architectures for local and chip level interconnects with substantial improvements over current solutions
3. Demonstration of radically new functionalities by the integration of blocks from a few nanometres down to the atomic scale into high added-value systems

To meet this objective, the nanoICT plan to strengthen scientific and technological excellence goes beyond the organisation of conferences, workshops, exchange of personnel, WEB site, etc., developing the following activities:

1. Consolidation and visibility of the research community in ICT nanoscale devices
2. Mapping and benchmarking of research at European level, and its comparison with other continents
3. Identification of drivers and measures to assess research in ICT nanoscale devices, and to assess the potential of results to be taken up in industrial research
4. Coordination of research agendas and development of research roadmaps
5. Coordination of national or regional research programmes or activities, with the aim to involve funding authorities in building the ERA around this topic
6. Development of strategies for international cooperation on themes related to the call, including where applicable, the development of research collaborations, shaping and consolidation of the NanoICT research community in Europe

Therefore, in nanoICT, 13 European academic research institutes will work together on: (1) hybrid molecular and organic electronics to develop new functions or to improve the implementation of known functions, by incorporating new molecular-scale developments on appropriate submicron scale semiconductor platforms or flexible substrates, (2) one-dimensional structures such as nanowires for the development of devices, functions, interconnections, etc., (3) single molecules for the development of reproducible functions and to assemble circuits. This research is likely to require progress in the understanding of electrical characteristics of single molecules and contacts, (special interest will be given to organic molecules, their potential for self-assembly and the multidisciplinary research they would motivate - this research topic concerns demonstration of building blocks at the molecular or even so atomic scale that offer radically new functionalities), (4) nano-electro-mechanical-systems (NEMS) to develop sub-micron scale mechanical devices (beams, bridges, cantilevers, membranes, probes) with improved properties (low stiffness, high frequency and quality factors) for highly miniaturized integrated sensor and actuator systems with improved sensitivity, (5) Carbon Nanotubes (CNT) for the growth and application of this material in a variety of electronic devices, nanolithography, transistors, logic, interconnects resonators and microfluidics, (6) modelling of new nanoscale devices, circuits and architectures and (7) spintronics.

WEB site: <http://www.nanoict.org>

Questions regarding the nanoICT project, please contact:

**Dr. Antonio Correia** (Project Coordinator): [antonio\(at\)phantomsnet.net](mailto:antonio(at)phantomsnet.net)

About Phantoms Foundation: This Non-Profit organisation was established on November 26, 2002 (Madrid, Spain) in order to provide high level Management profile to scientific projects. This association plays an important role in the 6th and 7th Framework Programmes as a platform for European funded projects (NAPA, Pico-Inside, nanoICT) to spread excellence amongst a wider audience, and to help in forming new networks.

This Association is now a key actor in structuring and fostering European Excellence in “Nanoscience and Nanotechnology”, having a world leading position in organising conferences, training and dissemination activities in this field.

**Dr. Werner Steinhoegl** (Project officer): [Werner.Steinhoegl\(at\)ec.europa.eu](mailto:Werner.Steinhoegl(at)ec.europa.eu)

ICT Future and Emerging Technologies (FET) – NanoICT Proactive Initiative  
European Commission

DG Information Society and Media, Office BU-25 5/38, B-1049 Brussels

WEB site: [http://cordis.europa.eu/fp7/ict/fet-proactive/nanoict\\_en.html](http://cordis.europa.eu/fp7/ict/fet-proactive/nanoict_en.html)