Post-doctoral Research Fellowship

Optical Spectroscopy of Semiconductor Nanostructures

A Post-doctoral position will become available after January 2005 in the area of optical spectroscopy of semiconductor nanostructures, within the EC Research Programme: "Physics and Technology of Elemental, Alloy and Compound Semiconductor Nanocrystals: Materials and Devices (SEMINANO)" (http://www.physics.metu.edu.tr/smd/seminano/). This programme is directed to develop fundamental knowledge on the production techniques, characterization, and possible applications of semiconductor nanocrystals embedded in various matrices.

The postdoctoral researcher will be involved in sample characterization by means of a wide range of UV-Vis-NIR optical spectroscopies, both frequency- and time-resolved (ultrafast). These spectroscopic data will be related to structural properties as well as optical response and carrier dynamics of semiconductor nanocrystals. The goal of this work are: a) to provide the corresponding nanocrystals fabrication facilities with feedback regarding the relationship between optical properties and fabrication procedure; b) to increase our current knowledge about semiconductor nanocrystals linear and nonlinear optical properties and to study their connection with samples structure; c) to evaluate energy relaxation processes and the role played by intrinsic levels and defect states in carrier dynamics, with the aim of understanding the potential use of nanocrystals as active media for fast optoelectronic components. The research will require ability to work in an international team and good communication and presentation skills.

The position is initially for one year and can be extended up to August 2007 subject to successful probation. Net salary will be 1500 Euro/month. Costs for trips and visiting expenses related to the research activity will be covered by research funds.

PhD and research experience in Condensed Matter Physics and Materials Science is required. Previous experience in time-resolved spectroscopy and nonlinear optics is essential. Applicants should have a good command of English and/or Italian.

The above research work will be mainly performed at the Optical Spectroscopy Laboratory of ISC-CNR (http://stm8.ism.cnr.it/optogroup/OSL/). The Laboratory is located at the Tor Vergata Department of the Institute for Complex Systems - C.N.R., on the east outskirts of Rome, Italy.

If you are interested to receive additional information please contact Dr. Marcofabio Righini (Marcofabio.Righini@isc.cnr.it).

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