TECHNISCHE UNIVERSITÄT DRESDEN

The scientific activities of the chair "**Materials Science and Nanotechnology**", Institute for Materials Science, **TU Dresden** are focused at developing non conventional strategies for novel materials and devices with intrinsic nanoscale complexity. Biological complexity suggests optimal strategies on how to design bottom-up advanced materials.
The aim of the new interdisciplinary research group "InnovaSens" to be established in the framework of the European Social Fund (ESF) in Federal State Saxony is to gain a comprehensive multiscale understanding of the underlying principles for the **development of nanowire-based biosensor systems.**
For this group, which will be embedded in the interdisciplinary scientific environment of the chair "Materials Science and Nanotechnology", **TU Dresden** offers the following positions:

one project coordinator
and
six Ph. D. students
(4 experiments, 2 modeling/simulations).

The positions will be available from January 2010 on and, given an approval of the project by the funding agency (European Social Fund, SMWK, SAB), funded for a period of three years. It has to be stressed that the salary of the successful applicants, including the Ph.D. students which are typically hired as part-time employees in Germany, will be according to a full scientist position (E 13 TV-L 100%).

The topics for the Ph. D. students include:

- Synthesis of semiconducting nanowires,
- Experimental investigation of the local interface between semiconducting nanowires and bioreceptors,
- Functionalization of nanowire arrays by biocoating,
- Integration of functionalized nanowire structures in microscopic devices,
- Multiscale modeling of the growth behavior of semiconducting nanowires,
- *Ab initio* and molecular dynamics treatment of the interface properties between nanowires, bioreceptors and analytes and transport simulations of functionalized nanowires.

For an optimal scientific training, students will be provided with state-of-the-art research methodologies and equipment, both in experiment and modeling/simulation and will be trained in inter- and crossdisciplinary work via lectures and seminars in various fields related to the scientific scope of the research group. For the Ph.D. students an academic degree in Physics, Chemistry, Materials Science, Biology, Electrical Engineering or a related subject is required.
The project coordinator should have a recent doctorate and will review the scientific progress of the research group, to manage the cooperation of the group with internal and external academic and industrial partners and to organize the scientific supervision and training of the Ph.D. students.
From all applicants the ability to work in a team and to perform interdisciplinary research and cooperation with academic and industrial partners and good communication skills in English are expected.

According to the regulations of the European Social Fund, in order to promote young researchers, successful applicants must not be older than 35 years (relevant deadline: 30.04.2009) and their academic degree (or doctorate in the case of the coordinator) must have been completed later than 30.04.2008.
Applications from women are particularly welcome. The same applies to disabled people.

Applicants should send their application documents, including a letter of motivation, Curriculum Vitæ, a list of publications, by 30.11.2009 (the deadline refers to the date on the postmark of the University`s Post Room Service)
by regular mail to
Prof. Dr. Gianaurelio Cuniberti, Institut für Werkstoffwissenschaft, TU Dresden, 01062 Dresden, Germany
or as a single pdf file to jobs@nano.tu-dresden.de, Subject: "Application ESF InnovaSens y*our_Surname*". The application will only be processed after receipt of at least **two** letters of reference to be sent to the same Email address.
For more information please refer to http://nano.tu-dresden.de/joinus/.