

The aim of the new interdisciplinary research group “InnoMedTec” to be established in the framework of the European Social Fund (ESF) in Federal State Saxony is the development and application of innovative solutions, materials and methods for medical and health technologies.

For this group, which will be embedded in the interdisciplinary scientific environment of the chair Materials Science and Nanotechnology (Prof. Dr. Gianauelio Cuniberti), **TU Dresden** offers the following positions:

## **6 members of academic staff / junior researchers (E 13 TV-L).**

Applicants pursuing a doctoral degree are especially welcome. The positions will be available at the earliest possible date and, given the final approval of the project by the funding agency (European Social Fund: SMWK, SAB) funded for a period of up to three years. The time limitation is governed by TzBfG.

**The different topics for the six researchers are:**

- Development of a biosensor platform based on bacterial nanowires (growth of the nanowires, electrical characterization, biofunctionalization, integration);
- Design of a multifunctional gas sensor system using metal oxide nanowires (synthesis of the metal oxide nanowires, microchip integration, development of protocols to detect specific gases);
- Health monitoring through integrated sensor principles and connection to mobile applications (“Apps”) (development of sensor principles for values measured at the skin of the patients, wireless data transmission and analysis);
- Silicon nanowire-based sensor platform to detect microbes in liquid environment (investigation of suitable bioreceptors, functionalization of the nanowires, integration, reference SPR measurements);
- Development and optimization of photocatalytical cleaning concepts for water contaminated with pharmaceuticals (design of reactors, construction and test of demonstrators);
- Simulations of photocatalytical processes (modeling of reaction-diffusion-processes, optimization of reaction rates).

The interdisciplinary junior research group is established together with the Institute of Clinical Pharmacology (Prof. Dr. Dr. Wilhelm Kirch) and the research will be performed in close scientific cooperation. For an optimal scientific training, the members of the group 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. In addition, a broad variety of soft skills and knowledge will be imparted to the group via a qualification concept providing them with presentation and rhetorical skills and training in critically discussing and challenging scientific results. For Ph.D. students, an academic degree in Physics, Chemistry, Materials Science, Biology, Electrical Engineering, Computer Science or a related subject is required, for Post-Docs an excellent doctoral degree in one of the topics mentioned is necessary. According to regulations of the European Social Fund researchers working in the group must have finished their studies or doctorate not earlier than September 30, 2010.

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.

For more information please refer to <http://nano.tu-dresden.de/joinus/>

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 and a list of publications, by **15.01.2012** (stamped arrival date of the university central mail service applies) by regular mail to **TU Dresden, Fakultät Maschinenwesen, Institut für Werkstoffwissenschaft, Professur für Materialwissenschaft und Nanotechnik, Herrn Prof. Dr. Gianauelio Cuniberti, 01062 Dresden, Germany** or as a single pdf file to [InnoMedTec@nano.tu-dresden.de](mailto:InnoMedTec@nano.tu-dresden.de), Subject: “Application ESF InnoMedTec your\_Surname” (Please note: We are currently not able to receive electronically signed and encrypted data). The application will only be processed after receipt of at least **two** letters of reference to be sent to the E-Mail address given above.