

Piezoelectric properties of aromatic peptides

Discover the **NANOMOTION** World as an Early Stage Researcher (PhD student) in a European program on “Nanoelectromechanical Motion in Functional Materials (**NANOMOTION**)”! We invite applications to the interdisciplinary Marie Curie Initial Training Network (ITN) **NANOMOTION** offering positions to 12 Early Stage Researchers (3 year PhD) and one Experienced Researcher (Post-Doc, 2 years).

The individual project: “Piezoelectric properties of aromatic peptides” will be hosted at University College Dublin (Ireland) with secondment in University of Aveiro (Portugal). The ITN **NANOMOTION** is a highly interrelated network of groups throughout Europe tackling the challenges in nanomaterial property characterization using scanning probe techniques. Regular workshops and mutual visits make this program highly attractive for young researchers interested in becoming leading edge experts in various Scanning Probe Microscopy methods applied to functional materials.

Description: The position is funded by the European Commission in the framework of the FP7 Marie Curie Initial Training Network “**NANOMOTION**”. **NANOMOTION** aims at the development of the next generation of multifunctional materials (piezoelectrics, ferroelectrics, multiferroics, ionic conductors and polar biomaterials) using novel nanoelectromechanical tools: Piezoresponse Force Microscopy (PFM) and Electrochemical Strain Microscopy (ESM) as well as their combination with traditional scanning probe microscopy methods. **NANOMOTION** is intended to train the next generation of scientists, engineers and technologists in the fundamental aspects of nanoelectromechanics and to apply advanced PFM/ESM tools to study a wide range of emergent multifunctional materials.

Specific project description: Peptide nanostructures (PNTs) will be prepared at the University of Aveiro (Portugal) using several techniques. PNTs are very important for bio-MEMS and various sensors as they exhibit a pronounced piezoelectric effect. The nanoscale piezoelectric properties will then be extensively investigated at University College Dublin (UCD, Ireland) as a function of humidity in closed imaging cells, in solution, and ultimately in physiological conditions to determine the functionality of peptide-based devices for biomedical applications. Molecular simulations will be performed also at UCD in order to shed light on the nanoscale units responsible for the high electromechanical properties of peptides.

Nr. of job position: ESR9

Research fields: Physics, Chemistry, Materials Science

Career stage: Early Stage Researcher (postgraduate)

Benefits: Employment as a PhD student with highly competitive salary (base salary 38 k€/year multiplied by the country correction coefficient, currently 1.147) + mobility allowance + travel allowance + career exploratory allowance). The position entitles participation in international conferences and **NANOMOTION** workshops.

Application details: Please, send your application to this project (including motivation letter, CV, copy of University certificates, names of two referees all in ONE pdf or Word document using your name and number of position as filename) to Dr. Brian Rodriguez (brian.rodriguez@ucd.ie) and to the **NANOMOTION** training manager Prof. Doru Lupascu (nanomotion.esr9@uni-due.de). Please use **NANOMOTION** application and number of position (**ESR9**) in the email subject line.

For further information, please visit: <http://www.nanofunction.org/brian-rodriguez/>

For other job offers, please visit: www.ITN-Nanomotion.eu

Requirements:

Degree: Master or equivalent

Degree field: Physics/Chemistry/Engineering

Main research field: Physics/Chemistry/Engineering

Research subfield: Mechanical Engineering

Required Research Experience: Physics/Chemistry/Engineering

Research Sub Field: Experience with biomaterials processing or with scanning probe techniques

Language: English. Language level: Proficiency in spoken and written English

The candidate should have a MSc or equivalent degree in Physics, Chemistry or Materials/Mechanical/Electrical Engineering allowing starting a doctoral fellowship. Profound knowledge of English (both written and spoken) is required. The candidate should have initial knowledge either on materials preparation or on scanning probe microscopy methods. EU imposes strict requirements on eligibility: At the time of recruitment the researcher must not have resided or carried out his/her main activity (work, studies, etc...) in the country of the beneficiary (Ireland) for more than 12 months in the 3 years immediately prior to his/her recruitment under the project. He/she also should have less than 4 years of research experience. This is measured from the date they obtained the degree which formally entitles them to embark on a doctorate, either in the country in which the degree was obtained or in the country in which the research training was provided.

Timeline:

The position is opened from January 1st, 2012. Applications are considered on a continuous basis until a suitable candidate is identified.



**SEVENTH FRAMEWORK PROGRAMME
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Initial Training Network

NANOMOTION



NANOELECTROMECHANICAL MOTION IN FUNCTIONAL MATERIALS