



EU Marie-Curie Initial Training Network



TRANSPOL

A European Research Training Network at the interface of
Cell/Molecular Biology and Membrane Physics

Topic: Transport and Signalling mechanism in Polarized Cells

Call: FP7-PEOPLE-ITN-210

Proposal Number: 264399

Project title: Testing and application of models to characterise cell adhesion, mechanics and signalling processes using atomic force microscopy

Type of position: Early Stage Researcher (ESR)/ PhD position

Reference Code: TRANSPOL-P11

Eligibility: To this position applies a mobility rule. The respective candidate must not have worked for more than 12 months in the UK within the last three years. Furthermore, the candidate needs to be in his/her first four years of his/her research career. The four years are counted from the date a degree was obtained which formally entitles to embark on a doctorate.

Starting date: October 1st, 2011

Duration: 36 months

Salary: According to the Marie Curie-ITN rules: around 36000 Euro/year plus monthly mobility allowance of 500 Euro/month

Short description: Atomic Force Microscopy is increasingly being applied to quantify the adhesion and mechanics of cellular processes at the single cell level. JPK Instruments have recently developed Atomic Force Microscopy hardware and software to optimize both the experimental methods and data analysis. In order to extend data quantification to both a wider range of probe-based mechanical stimulation methods and cellular systems, additional mathematical models for data fitting need to be implemented in software and tested across a range of biological systems. These models include: a.) Stiffness characterisation of cantilever-bound cells indented on glass substrates b.) Time-dependant cell/particle relaxation following controlled force indentation c.) Cell-based rheology methods. Existing and new developed

algorithms will be implemented in commercial software and tested on cell systems available through network partners. This project will proceed in close collaboration with the group of Dr. Jochen Guck at the University of Cambridge, where most of the actual research will be done.

Job

Requirements: Experimental and/or theoretical background in physics or engineering; programming skills.

Host Institute: Cavendish Laboratory, Department of Physics
University of Cambridge
UK

With employment by JPK Instruments Ltd.

Supervisors: Dr. Jochen Guck
e-mail: jg473@cam.ac.uk
Tel: +44 1223 748914
Fax: +44 1223 337000

Dr. Alex Winkel
e-mail: alex.winkel@jpk.com
Tel: +44-1223 815 646
Fax: +44 1223 815 662

How to apply:

please send the following documents via e-mail to the supervisor or the TRANSPOL coordinating office: transpol@rub.de.

- Clearly indicate the project you are applying for by referring to the Reference code of this job offer
- Letter of motivation (research interests, reasons for applying to this program and project, respectively)
- A complete CV
- Parts 1 and 3 of the CHRIS/6 cover sheet (see <http://www.admin.cam.ac.uk/offices/hr/forms/chris6/>)
- The names and contact details of two referees

**Deadline
for application:** June 28th 2011

**For further
information:** Please contact the supervisors of this project or directly the TRANSPOL coordinating office: transpol@rub.de