

ESR 11 Project Information Sheet

Project Title	<i>Biophysical investigations of membrane active agents with single molecule fluorescence microscopy</i>
Reference number	BIOMOLMACS_ESR_11
Host Institution/Company	Max Planck Institute of Biochemistry
Supervisor(s)	Prof. Petra Schwille
Research Group	Cellular and Molecular Biophysics
Department/School	Cellular and Molecular Biophysics
Duration	36-months full-time employment contract provided and ESR enrolled on 4- year structured PhD.
Funding information	Funding agency: H2020-MSCA-ITN-2019 (Proposal no:859416)
Early Stage Researcher Salary and Allowances	Living allowance: approximately £40,000/year + mobility allowance of €7,200/year + family allowance where applicable (all values before tax and social security payments) This calculation is to give you an idea about the level of funding. The actual salaries can be found on the official job application link below.
Pre-application closing date	28 th of February 2020
Official application closing date	15 th of March 2020
Start date	1 st of April 2020 or as soon as possible thereafter.
Official job application link*	https://www.biochem.mpg.de/en/rd/schwille

**The pre-application form should be submitted to biomolmacs@gmail.com by latest 28th of February 2020. Following the initial eligibility assessment, the applicants will be requested to submit their applications using the links provided specific to each institution/company.*

Post Summary

Brief description of the project:

ESR 11 will focus on the development and characterization of cell surface mimics of defined shape, lipid composition and biophysical properties, into which integral membrane proteins, such as receptors and ion channels, but also peripheral membrane proteins can be transferred. We will study the binding, membrane transformation and transfer across the membrane of fluorescently labelled agents by single molecule fluorescence imaging, as well as fluorescence correlation spectroscopy (FCS). Employing dual-colour imaging and fluorescence cross-correlation spectroscopy (FCCS) in combination with super-resolution microscopy (PAINT), we will be able to quantitatively analyse the affinity of the various agents to lipids or membrane proteins, characterize their potential ability of mechanically transforming the membrane, and to investigate whether agents remain intact or dissociate into different subunits when crossing the membrane.

Further information on the research interests of Prof. Petra Schuille can be found on their website.

<https://www.biochem.mpg.de/en/rd/schuille>

Standard duties and responsibilities of the ESR

For the 36 months of employment contract the ESR will be required to work exclusively on the MSCA ITN programme (BIOMOLMACS). In all cases, all duties and responsibilities will be clearly outlined in the researchers Personal Career Development Plan, as determined in the early stages of the project between the ESR and their supervisory committee.

Person Specification

Qualifications

Essential

Applicants should hold or expect to attain, as a minimum a 2:1 Honours degree, or equivalent, in Chemistry, Materials Science, Analytical Chemistry, Organic Chemistry, Biomedical Science, Polymer Chemistry, Pharmaceuticals or related area.

Knowledge and Experience

Essential

- Research project carried out in at least one of the above disciplines.
- A demonstrated knowledge of at least three of the following: pharmaceutical formulation development, drug delivery, cell culture/molecular biology, nanotechnology, polymerisation techniques.

Desirable

Work placement undertaken in an industry related to the above disciplines

Skills and Competencies

Essential

- Applicants whose first language is not English must submit evidence of competency in English, please see Max Planck Institute's English Language Requirements for details.
- Evidence of interest, aptitude and research experience in the above disciplines.

Further information

For any informal queries, please contact Prof. Petra Schuille by email at schuille@biochem.mpg.de

For queries relating to the application and admission process please contact Dr Gokhan Yilmaz at biomolmacs@gmail.com

Website: www.biomolmacs.com
