

Freie Universität Berlin – Ciência sem Fronteiras (CsF) Program 2015

Open Position for CsF candidates 2015

Department/Institute: Institute of Physics

Subject Area: Dept. Physics

Name of Supervisor: **Prof. Dr. Joachim Heberle**

Number of positions: 2

Type of Positions **PhD**

Project title: Vibrational spectroscopy of membrane proteins

Project description: Two projects are proposed that will investigate the functionality of membrane proteins by vibrational spectroscopy:

1. Light-induced FTIR difference spectroscopy will be applied to study the conformational changes of photoreceptor proteins. The time-dependent changes will be monitored by time-resolved FTIR spectroscopy using the step-scan technique. With this technique, we will contribute to the molecular understanding of the reaction mechanism of retinal proteins.

2. The second project aims at investigating structural changes of a membrane protein under physical force at the level of a single molecule. Proteins under mechanical stress is a relevant issue in studies of protein folding and unfolding, secondary structural formation. Experimentally, atomic force spectroscopy (AFS) will be combined to tip-enhanced Raman spectroscopy to trace the unfolding reaction on a molecular basis.

Academic Requirements: Master degree in (Bio-)Physics or (Physical) Chemistry is required. Experience in scientific working is mandatory.

Language Requirements: English (fluent; excellent writing skills)

Further Information: <http://www.physik.fu-berlin.de/en/einrichtungen/ag/ag-heberle/index.html>

Further Information on Ciência sem Fronteiras at FU Berlin [http://www.fu-berlin.de/en/sites/brazil/Ciência sem Fronteiras/index.html](http://www.fu-berlin.de/en/sites/brazil/Ciencia%20sem%20Fronteiras/index.html)

Application <http://www.csf-alemanha.de/pt/>
While applying online via this website, please make sure to also upload or send a copy of the following documents to saopaulo@fu-berlin.de:
-letter of application;

-academic CV (including former study programs, internships, publications);

-one or two letters of recommendation of distinguished professors of your university.

Some of the above documents are also required by Capes, but FU Berlin needs an **English or German version of each of the listed documents**. The documents are required by the individual institution responsible for the acceptance process. They may enhance your chances to get accepted. A decision cannot be made unless they have fully been transmitted. For further questions, please contact saopaulo@fu-berlin.de.