

26.02.2019

The **Institute for Biophysics** in the Department of Physics at the Goethe-University Frankfurt announces one opening for a

### **Master Thesis**

in the Macromolecular Electron Spin Resonance (ESR) Spectroscopy group (<https://www.in-situ-esr.de>). In collaboration with the group of Prof. Robert Tampé, the student will work on elucidating the mechanism for substrate translocation in an ATP-Binding Cassette (ABC) membrane transport protein complex using biochemical and biophysical techniques. For an overview of this highly interdisciplinary project, please refer to the following publications.

1. Barth K, Hank S, Spindler PE, Prisner TF, Tampé R, Joseph B\_(2018) Conformational Coupling and trans-Inhibition in the Human Antigen Transporter Ortholog TmrAB Resolved with Dipolar EPR Spectroscopy. *J. Am. Chem. Soc.*, 140, 4527–4533.
2. Nöll A, Thomas C, Herbring V, Zollmann T, Barth K, Mehdipour AR, Tomasiak TM, Brüchert S, Joseph B, Abele R, Oliéric V, Wang M, Diederichs K, Hummer G, Stroud RM, Pos KM, and Tampé R (2017) Crystal structure and mechanistic basis of a functional homolog of the antigen transporter TAP. *Proc. Natl. Acad. Sci. USA.*, 114, E438-447.

### **Responsibilities:**

- express, purify, and spin label different variants of the ABC transporter membrane protein complex
- perform activity assays, biophysical characterization, pulsed ESR spectroscopy techniques, and data analysis

### **Qualification profile:**

We are looking for a highly motivated Master student of Biochemistry / Biophysics / Chemistry (or equivalent). The position is available for up to six months or longer.

### **Send application to:**

Interested student may contact Benesh Joseph, Institut für Biophysik, Goethe-Universität, Raum \_\_.412, Max von Laue- Str. 1, 60438 Frankfurt am Main, E-Mail: [joseph@biophysik.uni-frankfurt.de](mailto:joseph@biophysik.uni-frankfurt.de), Tel: +49 69 798 46430.