



PhD-fellowship in Nanopore-based Polymer Characterization

The Laboratory for Membrane Physiology and Technology (MemPhysTech) in the Department of Physiology, University of Freiburg i. Br. (Head: Prof. Jan C. Behrends) is seeking candidates for a PhD fellowship to investigate and develop nanopore-mediated characterization and discrimination of chemically distinct polymers, using pore-forming membrane proteins (α -hemolysin, aerolysin, MspA) reconstituted in synthetic lipid membrane arrays¹⁻⁴. The fellowship is available immediately for a total of 36 months. It is funded by the Deutsche Forschungsgemeinschaft (DFG) in the framework of the International Research Training Group (IRTG) on 'Soft Matter Science: Concepts for the Design of Functional Materials' Freiburg and Strasbourg. The project is being pursued in close collaboration with the Precision Polymer Synthesis Group at the Institut Sadron of the CNRS at Strasbourg (Head: Prof. Jean-François Lutz). We are looking for a highly research-committed individual with a firm background in either (Bio)Physics, (Bio)Chemistry, Structural Biology or Electrophysiology.

The grant of the fellowship amounts to 75% of the E13 salary bracket of the German Public Service Wage Agreement (TvÖD). Typical net monthly earnings after tax: 1640 €
-for background on the IRTG see <http://www.softmattergraduate.uni-freiburg.de>
-for project details see <http://www.softmattergraduate.uni-freiburg.de/project/2015-2019/new-project-c7.pdf>

- (1) Baaken, G.; Sondermann, M.; Schlemmer, C.; Rühe, J.; Behrends, J. C. Planar Microelectrode-Cavity Array for High-Resolution and Parallel Electrical Recording of Membrane Ionic Currents. *Lab Chip* **2008**, 8, 938–944.
- (2) Baaken, G.; Ankri, N.; Schuler, A.-K.; Rühe, J.; Behrends, J. C. Nanopore-Based Single-Molecule Mass Spectrometry on a Lipid Membrane Microarray. *ACS Nano* **2011**, 5, 8080–8088.
- (3) del Rio Martinez, J. M.; Zaitseva, E.; Petersen, S.; Baaken, G.; Behrends, J. C. Automated Formation of Lipid Membrane Microarrays for Ionic Single-Molecule Sensing with Protein Nanopores. *Small* **2015**, 11, 119–125.
- (4) Baaken, G.; Halimeh, I.; Bacri, L.; Pelta, J.; Oukhaled, A.; Behrends, J. C. High-Resolution Size-Discrimination of Single Non-Ionic Synthetic Polymers with a Highly Charged Biological Nanopore. *ACS Nano* **2015**, 150531140658005.