

Diplomarbeit / Masters Project

Project Summary **Track-etch membranes for purification and controlled transfer of synthetic peptides**

Our team has developed an efficient method to synthesize peptides in high-density array format (DOI: 10.1038/NCOMMS11844). To screen the peptide/hormone/protein interactions in high throughput manner, the synthetic molecules should be cleaved from the synthesis surface and transferred in a controlled way onto the surfaces with defined properties. Under the joint supervision of Prof. A. Schäfer (Faculty of Chemical and Process Engineering) and Prof. A. Nesterov-Müller (Faculty of Mechanical Engineering) the applicant will find out the proper membranes for the transfer experiments, study the wetting of the membranes under confinement conditions, plan and conduct transfer experiments with synthetic peptides, design peptide-based assay. In the scope of the project, the applicant will get insight in the field of membrane and array technologies, gain experience with mechanical, optical and biochemical methods to screen for biologically active molecules.

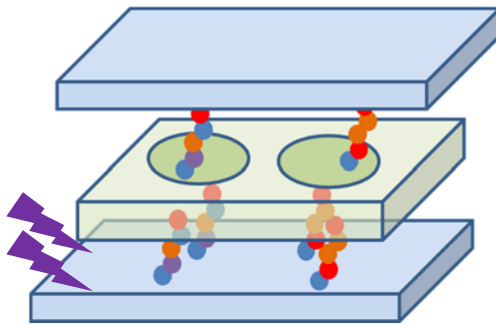


Figure 1: A schematic showing the purification and controlled transfer of synthetic molecules

Required Skills **Studies in chemical engineering, chemistry, bioengineering or mechanical (Uni, TH, FH)**

Interest to work in an interdisciplinary team, evidenced writing skills in English language, willingness to lead or contribute to the writing of a scientific publication.

Host Dept. **Nesterov-Müller Research Group of Molecular Search Engines, Institute of Microstructure Technologies**

Start Date **Flexible/negotiable**

Application Procedure **Please email CV, transcripts and motivation letter with available time period for evaluation.**

Project Advisor(s) **Alexander-Nesterov-Mueller@kit.edu** Prof. Dr. Alexander Nesterov-Mueller; Prof. Dr.-Ing. Andrea Iris Schäfer