

Open PhD position (Bioanalytics)

The biochip group at the Laboratory for Chemistry and Physics of Interfaces (Prof. Jürgen Rühe), University of Freiburg, offers a PhD position in the area of tumor associated miRNA analytics. The project located at the boundary between fundamental and applied research combines methods of molecular biology and Microsystems engineering and will be realized in co-operation with partners from industry and the university hospital. Main focus of this work will be on the integration of miRNA extraction and multiplex amplification and detection in a chip-based system.

miRNAs are small, non-coding RNA molecules, which play a major role in the regulation of e.g. cell development or apoptosis. The role of miRNA signatures as potential biomarkers for cancer diagnostics will gain even more importance in the future.

The main challenge of this work will be mainly directed towards assay development and implementation of such assays on biochips. A focus will be the development of quantitative detection methods. We offer an interdisciplinary and international environment which strongly encourages cross-disciplinary researches enabling thinking outside the box and broadening your perspective. Cooperation with chemists, biologists, researchers in clinical medicine and engineers is highly appreciated.

Department for Microsystems Engineering (IMTEK)

Laboratory for Chemistry and Physics of Interfaces (CPI)

Albert-Ludwigs-University Freiburg

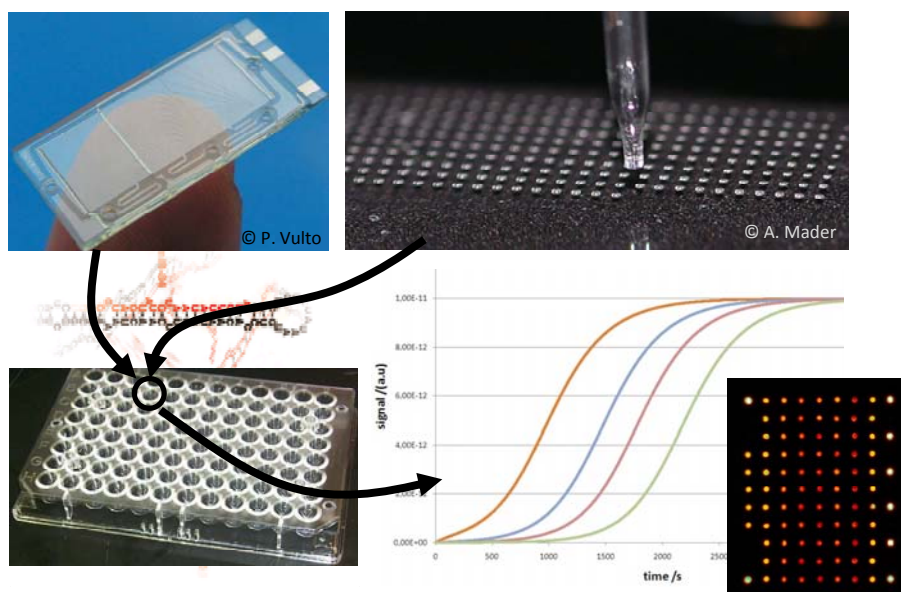
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Freiburg, February 2th, 2012



Relevant publications:

Mader A. et al.: Microarray-based Amplification and Detection of RNA by Nucleic Acid Sequence-Based Amplification (*NASBA*). *Anal Bioanal Chem.* 2010 Aug;397(8):3533-41.

Riehle U. et al.: Nucleic acid sequence-based amplification in formalin-fixed and paraffin-embedded breast-cancer tissues. *J Clin Pathol.* 2010 63(12): 1071-1076.

Rendl M. et al.: Simple one-step process for immobilization of biomolecules on polymer substrates based on surface-attached polymer networks. *Langmuir.* 2011 27(10): 6116-6123.

Vulto P. et al.: A microfluidic approach for high efficiency extraction of low molecular weight RNA. *Lab Chip.* 2010 10, p:610–616.

Requirements: Diploma/Master degree in the field of Molecular Biology, Biochemistry, Microsystems engineering or Biotechnology

Starting date: May/June 2012

Payment: TV-L 13/2

Please send applications to (by mail or email):

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