Institute for Microsystems Engineering (IMTEK)
Georges-Köhler-Allee 103, D-79110 Freiburg, Germany

Open PhD position for Microsystems engineers or biologists

Key issue of our research are bioanalytical surfaces. Biochips are substrates, on which biomolecules can be immobilized. Surface-bound polymer networks are utilized to improve the immobilization of biological probe molecules on plastic substrates. These biochips are then used for basic molecular research (DNA and proteins) to detect clinically relevant parameters. Cytokines are inflammatory markers, which play an important role in diagnostics of the “systemic inflammatory response syndrome” (SIRS).

Your task will be to immobilize capture molecules of differing affinities (antibodies, aptamers - directed against diverse cytokines) onto structured substrates via polymer technology, detecting relevant cytokines with it, quantifying them and characterizing the complete system.

The chip will be integrated into a rapid test system. A key will be the multiplexing ability, i.e. simultaneous detection of many different cytokines in small volumes of human samples.

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. 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.

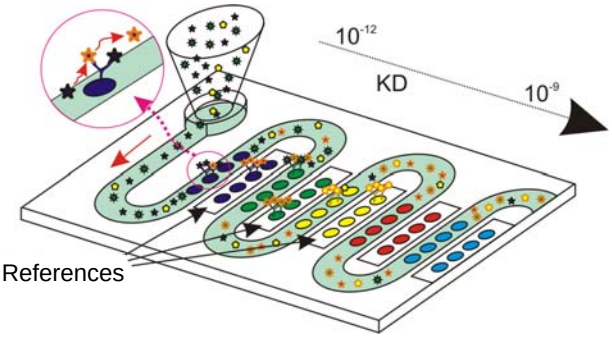

Fig. 1: Depiction of the intended Biochip for multi parametric detection of cytokines in small volumina of patient samples. Besides capture molecules chipinternal references for validated quantification are to be integrated.

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Chair
Chemistry and Physics of Interfaces (CPI)

Albert-Ludwigs-Universität Freiburg

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Freiburg, February 2th, 2012

You are interested to work in an interdisciplinary working environment in a young team? Then just contact:

Requirement:	Diploma/Master in Microsystems engineering molecular biology, biochemistry, biotechnology or similar
Starting date:	May/June 2012
Payment:	TV-L 13/2

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