MEIER, Matthias Born: April 14th,1977	**Position Title** Group Leader IMTEK, University of Freiburg

EDUCATION/TRAINING

Institution and Location	Degree	Year(s)	Field of Study
University of Basel University of Regensburg	PhD Diplom	2006 2004	Biophysics Biochemistry

A. Positions and Honours

Employment/Experience

2009-2011 University of Stanford, Postdoctoral Studies, Bioengineering
2008 University of Chicago, Postdoctoral Studies, Chemical Engineering

Honors, Awards and Scholarships

2012 Emmy-Noether Fellowship from the German Research Society
2008-2010 Feodor-Lynen-Fellowship from the Alexander v. Humboldt Foundation

B. Selected publications

The root chip. An integrated microfluidic chip for plant science. Grossmann G, Guo WJ, Ehrhardt DW, Frommer WB, Sit RV, Quake SR, Meier M (2011).
Plant Cell 23(12):4234-40.

Meier M, Lucchetta EM, Ismagilov RF (2010). Chemical stimulation of the Arabidopsis thaliana root using multi-laminar flow on a microfluidic chip. Lab Chip 10, 2147.

Plug-based microfluidics with defined surface chemistry to miniaturize and control aggregation of amyloidogenic peptides. Meier M. et al (2009). Angew Chem Int Ed Engl 48, 1487-1489.

Emmy-Noether Group Matthias Meier

Microfluidic Large Scale Integration and Bioengineering

My research group is focusing on the development and usage of large-scale microfluidic integration platforms for screening and characterization of biomolecular interactions within the regulatory network of the cell metabolism. In order to obtain a systems biology perspective we work on three different biological levels, i.e. the molecular, cellular and organism level. On the molecular level we envision the construction of protein interaction maps based on thermodynamics, kinetics structural parameters rather than only on binary interaction information. On the cellular and organismic level we aim to characterize the cell metabolism upon changing cell environments and simulate with help of microengineering approaches real world conditions. We emphasize our work on post-translational modifications and epigenetic factors acting on different timescales. Bringing together broad experimental protein interaction information from various biological levels and different biophysical angles we integrate information about the regulation of cell metabolism under various conditions including disease states in human and crop plants.