

Academic education

2000	Diploma in Chemistry at University Bonn (major: technical chemistry)
2004	Promotion at University Bonn (with distinction, Dr. rer. nat.)

Scientific careerPositions

2004	Postdoc at Institute of Biotechnology 2 at Forschungszentrum Jülich
2004 - 2009	Head of the "Fermentation Technology Group" at Institute of Biotechnology 2 at Forschungszentrum Jülich
since 2009	Head of the "Bioprocesses and Bioanalytics Group" at Institute of Bio- and Geosciences: IBG-1 Biotechnology
since 2011	W2-Professor for "Bioprocess Analytics" at RWTH Aachen University

Academic distinctions

2007	Prize for up-and-coming teachers in higher education of the German society of chemical engineering and biotechnology (Hochschullehrernachwuchspreis DECHEMA e.V.)
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Functions

2007-2013	Young researchers network biotechnology ("Zukunftsforum") at DECHEMA (chairman from 2009-2013)
2009-2013	Member of the board of Section Biotechnology at DECHEMA
since 2012	Member of DECHEMA special interest group "Systems Biology and Synthetic Biology" and "Bioprocess technology"
since 2012	Member editorial board "Bioprocess and Biosystems Engineering" journal

Track record

Publications	63 (peer-reviewed), ORCID www.orcid.org/0000-0003-0704-5597
Supervision	22 PhD and 55 Master/diploma/Bachelor theses

Scientific Expertise - Research fields of interest

- Metabolic engineering and bioprocess engineering for production of small molecules (metabolites) and proteins
- Acceleration of microbial bioprocess development by miniaturization, parallelisation and automation of cultivation and analytics.
- Hyphenation of miniaturized cultivation work flows with design of experiments (DoE) tools to speed up bioprocess development
- Methods for quantitative targeted and non-targeted metabolomics
- Operation of omics technology platform (metabolomics, proteomics, fluxomics)
- Application of omics technologies to support microbial strain engineering and bioprocess development
- Broad range of biological systems investigated (*Bacillus licheniformis*, *Bacillus subtilis*, *Corynebacterium glutamicum*, *Escherichia coli*, *Pichia pastoris*, *Saccharomyces cerevisiae*, *Streptomyces lividans*, *Penicillium chrysogenum*, *Chlorella vulgaris* etc.)
- Investigation of scale-up related phenomena by development and application of scale-down bioreactor setups to mimick and investigate large scale bioreactor inhomogeneity