

Molecular Diagnostics at the Point-of-Need enabled by Centrifugal Microfluidics

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Centrifugal microfluidics enables efficient miniaturization, integration, parallelization and automation of biochemical assays on portable desktop sized instruments. This talk will present key building blocks for implementing fully integrated sample-to-answer assays within the centrifugal microfluidic platform as well as challenges associated with cartridge manufacturing. In the second part application examples for bacterial endotoxin testing in pharmaceutical industry as well as PCR based SARS-CoV-2 testing at the Point-of-Need will be presented which were successfully commercialized by industrial partners such as [SUEZ](#) and [Spindiaq](#).

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Google scholar <https://scholar.google.com/citations?user=3kMlszAAAAAJ&hl=en&oi=ao>
Web of Science <http://www.researcherid.com/rid/B-2451-2012>

Research interest, keywords

Microfluidics, Lab-on-a-Chip, Electrochemical Energy Systems

Postgraduate professional career

- since 2016 Head of “Hahn-Schickard-Institut für Mikroanalysesysteme”, Freiburg
- since 2005 Head of “Hahn-Schickard-Institut für Mikro- und Informationstechnik”,
Villingen-Schwenningen
- since 1999 Full professor, Laboratory for MEMS Applications, Department of
Microsystems Engineering, University of Freiburg, Germany

Academic qualification and education

- 1994 Doctorate: “Universität der Bundeswehr München“
- 1990 Diploma in “Physics”, Technical University of Munich

Honors and awards

since 2011 Member of the German National Academy of Sciences “Leopoldina”;

Professional activities

- since 2020 Head of the Executive Board of VDE/VDI-Gesellschaft
Mikroelektronik, Mikrosystem- und Feinwerktechnik (GMM)
- since 2018 Principle investigator of “Living, Adaptive and Energy-autonomous
Materials Systems (livMatS)”; DFG funded Cluster of Excellence
at the University of Freiburg
- since 2017 Member of the Advisory Board of the scientific journal “Lab on a Chip”
- 2012 – 2017 Associated principle investigator of “BrainLinks – BrainTools”;
DFG funded Cluster of Excellence at the University of Freiburg
- 2004 – 2014 European editor and editor in chief (2012 – 2014) of the Journal
“Microfluidics and Nanofluidics”

Spin-Off’s from the research activities of Prof. Zengerle

- Biofluidix GmbH (2005), Cytena GmbH (2014), SpinDiag (2016), Actome (2017),
Dermagnostix (2020)