

## Peer Reviewed Journal Contributions (active DOI links)

- ◻ D. Binder, A. Grünberger, A. Loeschcke, C. Probst, C. Bier, J. Pietruszka, W. Wiechert, D. Kohlheyer, K.-E. Jaeger, T. Drepper, *Light-responsive control of bacterial gene expression: Precise triggering of the lac promoter activity using photocaged IPTG*, **Integrative Biology** **2014**, DOI: [10.1039/C4IB00027G](https://doi.org/10.1039/C4IB00027G)
- ◻ A. Grünberger, W. Wiechert and D. Kohlheyer, *Single-Cell Microfluidics: Opportunity for Bioprocess Development*, **Current Opinion in Biotechnology** **2014**, 29, 15-23, DOI: [10.1016/j.copbio.2014.02.008](https://doi.org/10.1016/j.copbio.2014.02.008)
- ◻ N. Mustafi ,A. Grünberger, R. Mahr, S. Helfrich, K. Nöh, B. Blombach, D. Kohlheyer, J. Frunzke, *Application of a genetically encoded biosensor for live cell imaging of L-valine production in pyruvate dehydrogenase complex-deficient Corynebacterium glutamicum strains*. **Plos One** **2014**, DOI: [10.1371/journal.pone.0085731](https://doi.org/10.1371/journal.pone.0085731)
- ◻ A. Nanda, A. Heyer, C. Krämer, A. Grünberger, D. Kohlheyer and J. Frunzke, *SOS-induced spontaneous prophage induction in Corynebacterium glutamicum - An analysis at the single-cell level*, **Journal of Bacteriology** **2014**, 196(1), 180-188, DOI: [10.1128/JB.01018-13](https://doi.org/10.1128/JB.01018-13)
- ◻ S. Unthan, A. Grünberger, J. van Ooyen, J. Gätgens, J. Heinrich, N. Paczia, W. Wiechert, D. Kohlheyer, S. Noack, *Beyond growth rate 0.6: What drives Corynebacterium glutamicum to higher growth rates in defined medium*. **Biotechnology & Bioengineering** **2014**, 111(2), 359-371, DOI: [10.1002/bit.25103](https://doi.org/10.1002/bit.25103)
- ◻ G. Schendzielorz, M. Dippong, A. Grünberger, D. Kohlheyer, A. Yoshida, S. Binder, C. Nishiyama, M. Nishiyama, M. Bott, and L. Eggeling, *Taking control over control: Use of product sensing in single cells to remove flux control at key enzymes in biosynthesis pathways*, **ACS Synthetic Biology** **2014**, 3(1), 21-29, DOI: [10.1021/sb400059y](https://doi.org/10.1021/sb400059y)
- ◻ A. Grünberger, C. Probst, A. Heyer, W. Wiechert, J. Frunzke and D. Kohlheyer, *Microfluidic Picoliter Bioreactor for Microbial Single Cell Analysis: Fabrication, System Setup and Operation*, **Journal of Visualized Experiments** **2013**, 82, 50560, DOI: [10.3791/50560](https://doi.org/10.3791/50560)
- ◻ C. Probst, A. Grünberger, W. Wiechert, D. Kohlheyer, *Polydimethylsiloxane (PDMS) Sub-Micron Traps for Single-Cell Analysis of Bacteria*. **Micromachines** **2013**, 4(4), 357-369 DOI: [10.3390/mi4040357](https://doi.org/10.3390/mi4040357)
- ◻ C. Probst, A. Grünberger, W. Wiechert, D. Kohlheyer, *Microfluidic growth chambers with optical tweezers for full spatial single-cell control and analysis of evolving microbes*. **Journal of Microbiological Methods** **2013**, 95(3), 470-476, DOI: [10.1016/j.mimet.2013.09.002](https://doi.org/10.1016/j.mimet.2013.09.002)
- ◻ A. Grünberger, J. van Ooyen, N. Paczia, P. Rohe, G. Schendzielorz, L. Eggeling, W. Wiechert, D. Kohlheyer, Stephan Noack, *Beyond growth rate 0.6: C. glutamicum cultivated in highly diluted environments*, **Biotechnology & Bioengineering** **2013**, 110(1), 220-228, DOI: [10.1002/bit.24616](https://doi.org/10.1002/bit.24616)
- ◻ A. Grünberger, N. Paczia, C. Probst, G. Schendzielorz, L. Eggeling, W. Wiechert and D. Kohlheyer, *A disposable picoliter bioreactor for cultivation and investigation of industrially relevant bacteria on single cell level*, **Lab on a Chip** **2012**, 12, 2060-2068, DOI: [10.1039/C2LC40156H](https://doi.org/10.1039/C2LC40156H)
- ◻ N. Mustafi, A. Grünberger, D. Kohlheyer, M. Bott and J. Frunzke, *The development and application of a single-cell biosensor for the detection of l-methionine and branched-chain amino acids*, **Metabolic Engineering** **2012**, 14 (4), 449-457, DOI: [10.1016/j.ymben.2012.02.002](https://doi.org/10.1016/j.ymben.2012.02.002)
- ◻ A. Floris, S. Staal, S. Lenk, E. Staijen, D. Kohlheyer, J. Eijkel and A. van den Berg, *A prefilled, ready-to-use electrophoresis based lab-on-a-chip for monitoring lithium in blood*, **Lab on a Chip** **2010**, 10, 1799-1806 DOI: [10.1039/C003899G](https://doi.org/10.1039/C003899G)
- ◻ G. Krishnamoorthy, E. T. Carlen, D. Kohlheyer, R.B.M. Schasfoort, and A. van den Berg, *Integrated Electrokinetic Sample Focusing and Surface Plasmon Resonance Imaging System for Measuring Biomolecular Interactions*, **Analytical Chemistry** **2009** 81, 1957-1963, DOI: [10.1021/ac802668z](https://doi.org/10.1021/ac802668z)
- ◻ D.R. Zalewski, D. Kohlheyer, S. Schlautmann and J.G.E. Gardeniers, *Synchronized, continuous flow zone electrophoresis*. **Analytical Chemistry** **2008**, 80, 6228–6234, DOI: [10.1021/ac800567n](https://doi.org/10.1021/ac800567n)
- ◻ D. Kohlheyer, J.C.T. Eijkel, S. Schlautmann, A. van den Berg, and R.B.M. Schasfoort, *Bubble-free operation of a microfluidic free-flow electrophoresis chip with integrated Pt electrodes*. **Analytical Chemistry** **2008**, 80, 4111–4118, DOI: [10.1021/ac800275c](https://doi.org/10.1021/ac800275c)
- ◻ D. Kohlheyer, J.C.T. Eijkel, A. van den Berg, and R.B.M. Schasfoort, *Miniaturizing Free-Flow Electrophoresis - A critical Review*. **Electrophoresis** **2008**, 29, 977-993 DOI: [10.1002/elps.200700725](https://doi.org/10.1002/elps.200700725)
- ◻ D. Kohlheyer, S. Unnikrishnan, G. Besselink, S. Schlautmann, and R. Schasfoort, *A microfluidic device for array patterning by perpendicular electrokinetic focusing*. **Microfluidics and Nanofluidics** **2008**, 4, 557-564, DOI: [10.1007/s10404-007-0217-9](https://doi.org/10.1007/s10404-007-0217-9)
- ◻ D. Kohlheyer, J.C.T. Eijkel, S. Schlautmann, A. van den Berg, and R. Schasfoort, *Microfluidic High-Resolution Free-Flow Isoelectric Focusing*. **Analytical Chemistry**, **2007**. 79(21): p. 8190 – 8198, DOI: [10.1021/ac071419b](https://doi.org/10.1021/ac071419b)

- D. Kohlheyer, G.A.J. Besselink, S. Schlautmann, and R.B.M. Schasfoort, *Free-flow zone electrophoresis and isoelectric focusing using a microfabricated glass device with ion permeable membranes*. **Lab on a Chip**, **2006**. 6(3): p. 374-380. DOI: [10.1039/B514731J](https://doi.org/10.1039/B514731J)
- D. Kohlheyer, G.A.J. Besselink, R.G.H. Lammertink, S. Schlautmann, S. Unnikrishnan, and R.B.M. Schasfoort, *Electroosmotically controllable multi-flow microreactor*. **Microfluidics & Nanofluidics**, **2005**. 1(3): p. 242-248. DOI: [10.1007/s10404-004-0031-6](https://doi.org/10.1007/s10404-004-0031-6)

## Patent

- D. Kohlheyer and R.B.M. Schasfoort, System and Method for Separating, Analysing, Detecting and/or Determining Particles in a Liquid Sample Flow, WO2007008064, STW, **2007**.

## PhD Thesis

- D. Kohlheyer, *Microfluidic free-flow electrophoresis for proteomics-on-a-chip*, University of Twente, MESA<sup>+</sup> Institute of Nanotechnology, **2008**, Enschede, The Netherlands, ISBN 978-90-365-2666-1, DOI: [10.3990/1.9789036526661](https://doi.org/10.3990/1.9789036526661)

## Conference Contributions Published in Proceedings and Special Conference Issues

- A. Grünberger, K. Schmitz, C. Probst, W. Wiechert, S. Noack, and D. Kohlheyer, *Simple Microfluidics For Complex Organisms: A Microfluidic Chip System For Growth And Morphogenesis Studies Of Filamentous Fungi*, **17th International Conference on Miniaturized Systems for Chemistry and Life Sciences**, 27-31 October 2013, Freiburg, Germany, Editor: Roland Zengerle University of Freiburg, Library of Congress Number: 2013949589 ISBN: 978-0-9798064-6-9
- A Grünberger, C Probst, W Wiechert, D Kohlheyer, *High-Throughput Growth Rate Determination of Bacteria Microcolonies on Single Cell Level*, **Chemie Ingenieur Technik**, **2012**, 84 (8), 1336-1337, DOI: [10.1002/cite.201250342](https://doi.org/10.1002/cite.201250342)
- C Probst, A Grünberger, D Kohlheyer, W Wiechert, *Phenotypic Sorting and Analysis of Bacteria Production Strains Using Optical Tweezers and Microfluidics*, **Chemie Ingenieur Technik**, **2012**, 84 (8), 1344-1344 DOI: [10.1002/cite.201250339](https://doi.org/10.1002/cite.201250339)
- A Grünberger, C Probst, W Wiechert, D Kohlheyer, *Femtoliter Growth Channels: Bacteria Long-Term Growth Patterns Analysis on Single Cell Level*, **Chemie Ingenieur Technik**, **2012**, 84 (8), 1407-1407 DOI: [10.1002/cite.201250343](https://doi.org/10.1002/cite.201250343)
- A. Grünberger, Helfrich, S., C. Probst, W. Wiechert, K. Nöh, D. Kohlheyer, *High-Throughput lineage tree investigations of bacteria microcolonies using arrays of monolayer growth chambers*, **Proceedings of the 16th International Conference on Miniaturized Systems for Chemistry and Life Sciences 2012**, 1594-1596, 28 October – 01 November 2012 Okinawa, Japan, ISBN 978-0-9798064-5-2, CBMS
- A. Grünberger, C. Probst, S. Binder, R. Ziaee, L. Eggeling, W. Wiechert and D. Kohlheyer, *Single Cell Trapping and Analysis of Prokaryotic Production Strains in sub  $\mu\text{m}$  Fluidic Structures*, **Proceedings of the 15th International Conference on Miniaturized Systems for Chemistry and Life Sciences 2011**, 1740-1742, October 2-6, 2011, Seattle, Washington, USA, ISBN 978-0-9798064-4-5, CBMS
- S. Staal, J. Floris, S. Lenk, E. Staijen, M. Muñoz, D. Kohlheyer, J.C.T. Eijkel, A. van den Berg, *A Prefilled, Ready-To-Use, Electrophoresis-Based Lab-on-a-Chip Device For Monitoring Ions In Blood And Urine*, **Proceedings of the 14th International Conference on Miniaturized Systems for Chemistry and Life Sciences 2010**, 2107-2019, 3-7 October 2010, Groningen, The Netherlands, ISBN 978-0-9798064-3-8, CBMS
- D. Kohlheyer, J. Eijkel, S. Lenk, A. Floris, S. Staal and A. van den Berg, *Point of care lithium monitoring in whole blood using a disposable, prefilled and ready-to-use capillary electrophoresis chip*, **Proceedings of the 13th International Conference on Miniaturized Systems for Chemistry and Life Sciences 2009**, 2107-2109, 1-5 November 2009, Jeju, Korea, CBMS
- P. Vulto, D. Kohlheyer, G.A. Urban and R.B.M. Schasfoort, *Sweeping Flow Electrophoresis (SFE): A New Continuous Separation Technique*, **Proceedings of the 12th International Conference on Miniaturized Systems for Chemistry and Life Sciences 2008**, 823-825, San Diego, USA, ISBN 978-0-9798064-1-4, CBMS.
- D. Kohlheyer, R.G.H. Lammertink, G.A.J. Besselink, S. Schlautmann, and R.B.M. Schasfoort, *Laminar Flow Microarray Patterning by Perpendicular Electrokinetic Focusing*, **Proceedings of the 9th International Conference on Miniaturized Systems for Chemistry and Life Sciences 2005**, 1337-1339, Boston, USA, ISBN 0-9743611-1-9
- D. Kohlheyer, R.G.H. Lammertink, G.A.J. Besselink, S. Schlautmann, and R.B.M. Schasfoort, *Electroosmotically controllable multijflow microreactor*, **Proceedings of the 8th International Conference on Miniaturized Systems for Chemistry and Life Sciences 2004**, 192-194, 26-30 September 2004, Malmö, Sweden

- ◻ D. Kohlheyer, R.G.H. Lammertink, S. Schlautmann, G.A.J. Besselink, P. Vulto, and R.B.M. Schasfoort, *Reaction and Diffusion Dynamics in a Microfluidic Format*, **MRS Proceedings, 2004**, 820, Materials Research Society 2004, [DOI: 10.1557/PROC-820-O3.5](https://doi.org/10.1557/PROC-820-O3.5)

### Invited Conference Talks

- ◻ D. Kohlheyer, *Microfluidic Single-Cell Analysis for Bioprocess Development*, **CLIB 2012 Forum, Scale up and Scale Down**, 03. April 2014, Monheim, Germany
- ◻ D. Kohlheyer, *Mikrofluidik für die Analyse einzelner Zellen für die Bioprozessoptimierung*, **714. DECHEMA Kolloquium**, 24.10.2013, DECHEMA, Frankfurt am Main, Germany
- ◻ D. Kohlheyer, *Catch it and batch it: Microbial Single-Cell Analysis in Picoliter Bioreactors*, **Jülich Biotech Day**, 11.10.2013, Forschungszentrum Jülich, Jülich Germany
- ◻ D. Kohlheyer, *Catch it and Batch it: Picoliter Cultivation at the Single Cell level*, Invited Presentation at **Single Cell Analysis Europe**, Select Biosciences, 5-6 March 2013, Barcelona, Spain
- ◻ D. Kohlheyer, *Microbial single cell analysis of production strains in microfabricated habitats*, Invited Presentation at Microfluidics for Systems Biology and Bioprocess Development, Dechema, 21.02.2013 Dechema-Haus, Frankfurt Am Main, Germany
- ◻ D. Kohlheyer, *Sub  $\mu\text{m}$  Fluidic Structures for Single Cell Trapping And Analysis of Prokaryotic Production Strains*, Invited Presentation at **21st annual conference of the German society for cytometry**, 12-14 October 2011, Bonn, Germany

### Invited Lectures and Seminars

- ◻ D. Kohlheyer, *Catch it and batch it: Analysing single microbes in microfabricated bioreactors*, Institute of Microbiology and Wine Research, 8 June 2013, **Johannes Gutenberg University**, Mainz, Germany
- ◻ D. Kohlheyer, *Microfluidics for Single Cell Analysis of Bacterial Production Strains*, 17 March 2012, **ZMB Colloquium, IBT-2, Forschungszentrum Jülich**
- ◻ D. Kohlheyer, *Microfluidics for Single Cell Analysis of Bacterial Production Strains „Wie parkt man einzelne Bakterien?“*, *Biotechnology Colloquium*, 14 June 2011, **FH-Aachen-Jülich**, Germany,
- ◻ D. Kohlheyer, *Microfluidic Free-Flow Electrophoresis for Proteomics on a chip*, 7 April 2010, **Universität Darmstadt**, Steffen Hardt Seminar, Darmstadt, Germany
- ◻ D. Kohlheyer, *Microfluidics for Proteomics-on-a-Chip and Biomedical Applications*, 27 January 2010, **IBN-4 Seminar, Forschungszentrum Jülich**, Germany
- ◻ D. Kohlheyer, *Microfluidic free-flow electrophoresis for proteomics on a chip*, **University of Leipzig**, Belder Lab, Germany, December 7, 2007
- ◻ D. Kohlheyer, *Microfluidic tools for lab-on-a-chip applications*, **Aachen University of Applied Sciences**, Germany, November 30, 2007
- ◻ D. Kohlheyer, *An integrated system approach for protein discovery using miniaturized free-flow electrophoresis and surface Plasmon resonance imaging*, **Becton & Dickinson Diagnostics**, Munich Martinsried, Germany, March 23, 2007
- ◻ D. Kohlheyer, *Microfluidic free-flow electrophoresis for pre-fractioning and sorting of proteins*, **Bionano Forum**, University of Twente, The Netherlands, May 2, 2006

### Conference Talks

- ◻ D. Kohlheyer, A. Grünberger, C. Probst, J. Frunzke and W. Wiechert, *Picoliter fermentation with single bacteria: Learning from the one to unravel the crowd*, **Implementation of Microreactor Technology in Biotechnology (IMTB 2013)**, 05 – 08 May 2013, Cavat, Croatia
- ◻ S. Helfrich, A. Grünberger, D. Kohlheyer, W. Wiechert and K. Nöh, *ANALYSIS OF MICROBIAL OBSERVABLES ON SINGLE CELL LEVEL: Challenges of Cell Clusters for Microscopy-based Image Processing*, **9th European Congress of Chemical Engineering (ECCE9)/ 2nd European Congress of Applied Biotechnology (ECAB2)**, 21th -25th April 2013, The Hague, Netherland
- ◻ A. Grünberger, N. Mustafi, C. Probst, J. Frunzke, W. Wiechert and D. Kohlheyer, *Towards high-throughput microbial single cell analysis in picoliter bioreactors*, **9th European Congress of Chemical Engineering (ECCE9)/ 2nd European Congress of Applied Biotechnology (ECAB2)**, 21th -25th April 2013, The Hague, Netherland
- ◻ S. Noack, A. Grünberger, J. van Ooyen, D. Kohlheyer and W. Wiechert, *Increasing biomass productivity of *Corynebacterium glutamicum* – New insights from Microscale Cultivations?*, **9th European Congress of Chemical**

**Engineering (ECCE9)/ 2nd European Congress of Applied Biotechnology (ECAB2)**, 21th -25th April **2013**, The Hague, Netherland

- ◻ A. Gruenberger, N. Mustafi, C. Probst, J. Frunzke, W. Wiechert and D. Kohlheyer *High-throughput Microbial Single Cell Analysis in Picoliter Bioreactors*, **Annual Conference of the Association for General and Applied Microbiology (VAAM)**, 10th -13th March **2013**, Bremen, Germany
- ◻ D. Kohlheyer, A. Grünberger, C. Probst, P. Frank, W. Wiechert, Catch it and batch it: picoliter fermentation at the single cell level, International Workshop on New and Synthetic Bioproduction Systems (BioSys 2012), 06 - 07 December 2012 Hamburg-Harburg
- ◻ A. Grünberger, C. Probst, S. Helfrich, W. Wiechert, K. Nöh, D. Kohlheyer, Industrial Biotechnology meets Microfluidics - Disposable high-throughput single cell analysis device for industrially relevant bacterial strains, 3rd European Conference on Microfluidics, 03 – 05 December 2012, Heidelberg, Germany
- ◻ A. Grünberger, C. Probst, W. Wiechert and D. Kohlheyer, *Fermentation at picoliter scale - microfluidics for single cell analysis of prokaryotic production strains*, **ACHEMA 2012**, 18 – 22 June 2012, Frankfurt, Germany
- ◻ A. Grünberger, C. Probst, W. Wiechert and D. Kohlheyer, *High-throughput growth rate determination of bacteria microcolonies on single cell level*, **Process Net-Jahrestagung**, 10 – 13 September 2012, Karlsruhe, Germany,
- ◻ A. Grünberger, C. Probst, W. Wiechert and D. Kohlheyer, *Picoliter bioreactors for growth heterogeneity studies of industrial bacteria on single cell level*, Inhomogenities in large-scale bioreactors: System biology and process dynamics, **2nd BioProScale Symposium**, 14-16 March 2012, Berlin, Germany
- ◻ A. Grünberger, C. Probst, N. Mustafi, J. Frunzke, W. Wiechert and D. Kohlheyer, A Continuous Picoliter Bioreactor for Heterogeneity Studies of Bacteria Microcolonies, **Nanotech Montreux**, 14 -16 November 2011, Montreux, Switzerland
- ◻ D. Kohlheyer, J.C.T. Eijkel, A. van den Berg and R.B.M. Schasfoort, Microfluidic free-flow electrophoresis for proteomics on a chip, **Frontiers 2008**, Heraklion, Greece
- ◻ D. Kohlheyer, J.C.T. Eijkel, S. Schlautmann, van den Berg, A. and R.B.M. Schasfoort, Microfluidic free-flow electrophoresis for proteomics on a chip, **MSB 2008**, Berlin, Germany
- ◻ D. Kohlheyer, G.A.J. Besselink, S. Schlautmann, and R.B.M. Schasfoort, Microfluidic free-flow Electrophoresis and isoelectric focusing for proteomics on a chip, in **Exploring new FRONTIERS in bio/nano. 2007**, Zermatt, Switzerland.
- ◻ D. Kohlheyer, G.A.J. Besselink, S. Schlautmann, and R.B.M. Schasfoort, An integrated system approach for protein discovery using miniaturized free-flow electrophoresis and surface plasmon resonance imaging, in **Nanotech Montreux 2006**, Montreux, Switzerland.
- ◻ D. Kohlheyer, R.G.H. Lammertink, S. Schlautmann, G.A.J. Besselink, and R.B.M. Schasfoort, Reaction and Diffusion Dynamics in Address Flow Format, in Netherlands **Catalysis and Chemistry Conference. 2004**, Noordwijkerhout, The Netherlands.
- ◻ D. Kohlheyer, R.G.H. Lammertink, S. Schlautmann, G.A.J. Besselink, P. Vulto, and R.B.M. Schasfoort. Reaction and Diffusion Dynamics in a Microfluidic Format, **MRS Spring Meeting 2004**, San Francisco, USA: Mater. Res. Soc.

## Conference Posters

- ◻ A. Grünberger, K. Schmitz, C. Probst, W. Wiechert, S. Noack, and D. Kohlheyer, *Simple Microfluidics For Complex Organisms: A Microfluidic Chip System For Growth And Morphogenesis Studies Of Filamentous Fungi*, **17th International Conference on Miniaturized Systems for Chemistry and Life Sciences**, 27-31 October 2013, Freiburg, Germany
- ◻ D. Kohlheyer, A. Grünberger, C. Probst, C. Krämer, J. Frunzke and W. Wiechert, Catch it and batch it: microbial single cell analysis in microfluidic environments, **New Approaches and Concepts in Microbiology**, 14-16 October 2013, Heidelberg, Germany
- ◻ Christopher Probst, Alexander Grünberger, Christina Krämer, Wolfgang Wiechert, and Dietrich Kohlheyer, Microfluidic Single-Cell Analysis in Dynamic Environments, **Symposium on Advanced Imaging in Cell- and Microbiology: Technology and Applications**, 10-11 October 2013, Jülich, Germany
- ◻ Alexander Grünberger, Stefan Helfrich, Nurije Mustafi, Christopher Probst, Julia Frunzke, Katharina Nöh, Wolfgang Wiechert, and Dietrich Kohlheyer, *Automated High-Throughput Time-Lapse Microscopy of Bacteria Microcolonies In Parallelized Monolayer Growth Chambers*, **Symposium on Advanced Imaging in Cell- and Microbiology: Technology and Applications**, 10-11 October 2013, Jülich, Germany
- ◻ Christian C. Sachs, Alexander Grünberger, Christopher Probst, Wolfgang Wiechert and Dietrich Kohlheyer, *Automated image analysis pipeline for single cell bacterial growth studies*, **Symposium on Advanced Imaging in Cell- and Microbiology: Technology and Applications 2013**, 10-11 October 2013, Jülich, Germany

- ◻ Christina Krämer, Alexander Grünberger, Christopher Probst, Wolfgang Wiechert, and Dietrich Kohlheyer, Continuous Non-Invasive Real-Time Viability Measurement of Bacteria on Single Cell Level in Microfluidic Chip Cultures, **Symposium on Advanced Imaging in Cell- and Microbiology: Technology and Applications**, 10-11 October 2013, Jülich, Germany
- ◻ C. Krämer, A. Gruenberger, C. Probst, W. Wiechert and D. Kohlheyer, *Continuous viability fluorescent staining of growing *Corynebacterium glutamicum* colonies without sample preparation in an automated microfluidic measurement system*, **How Dead is Dead III (VAAM)**, 06-07 June 2013, Berlin, Germany, **poster prize award**
- ◻ A. Grünberger, C. Probst, J. Frunzke, W. Wiechert and D. Kohlheyer, *Femtoliter chemostat for long-term bacteria growth and production analysis on single cell level*, **Implementation of Microreactor Technology in Biotechnology (IMTB 2013)**, 05 – 08 May 2013, Cavat, Croatia
- ◻ J. Heinrich, A.Gruenberger, C. Probst, W. Wiechert and D. Kohlheyer, *Single cell growth under constant environmental conditions and defined carbon sources: A case study for *Corynebacterium glutamicum**. **Annual Conference of the Association for General and Applied Microbiology (VAAM)**, 10th -13th March 2013, Bremen, Germany
- ◻ C. Probst, A. Grünberger, W. Wiechert, D. Kohlheyer, *Time Lapse Microbial Single Cell Analysis in a Microfabricated Batch Reactor*, **Single Cell Analysis Europe**, Select Biosciences, 5-6 March 2013, Barcelona, Spain
- ◻ A. Grünberger, C. Probst, W. Wiechert, D. Kohlheyer, *Femtoliter Chemostat for Long-term Bacteria Growth and Production Analysis on Single Cell Level*, **Single Cell Analysis Europe**, Select Biosciences, 5-6 March 2013, Barcelona, Spain
- ◻ C. Probst, A. Grünberger, W. Wiechert, D. Kohlheyer, *Screening of *Escherichia coli* on single-cell level by hyphenating microfluidic picoliter fermentation and optical tweezers*, **3rd. European Conference on Microfluidics 2012 "µFlu'12"**, 03 – 05 December 2012, Heidelberg, Germany
- ◻ A. Grünberger, Helfrich, S., C. Probst, W. Wiechert, K. Nöh, D. Kohlheyer, *High-Throughput lineage tree investigations of bacteria microcolonies using arrays of monolayer growth chambers*, **The 16th International Conference on Miniaturized Systems for Chemistry and Life Sciences (µTAS 2012)**, 28 October – 01 November 2012 Okinawa, Japan
- ◻ A. Grünberger, P. Frank, C. Probst, W. Wiechert D. Kohlheyer, *Single Cell Microfluidics: From Fabrication to Application* **Jülich Biotech Day**, 05 October 2012, Jülich, Germany
- ◻ S. Helfrich, A. Grünberger, D. Kohlheyer, W. Wiechert, K. Nöh, *Semi-Automated Evaluation of Microbial Observables from High-Throughput Time-lapse Microscopy*, **German Conference on Bioinformatics 2012**, 19 – 22 September 2012, Jena, Germany
- ◻ A. Grünberger, C. Probst, W. Wiechert, D. Kohlheyer *Femtoliter growth channels: bacteria long-term growth pattern analysis on single cell level* **ProcessNet-Jahrestagung**, 10 – 13 September 2012, Karlsruhe, Germany
- ◻ P. Frank, C. Probst, A. Grünberger, W. Wiechert, D. Kohlheyer, *Catch it and Batch it. Microfluidics single cell batch cultivation utilizing picoliter bioreactors*, 30. **ProcessNet Jahrestagung**, 10 – 13 September 2012, Karlsruhe, Germany
- ◻ C. Probst, A. Grünberger, W. Wiechert, D. Kohlheyer *Phenotypic Sorting and Analysis of Bacteria Production Strains Using Optical Tweezers and Microfluidics* **ProcessNet-Jahrestagung**, 10 – 13 September 2012, Karlsruhe, Germany
- ◻ A. Grünberger, C. Probst; Frank, P., W. Wiechert, D. Kohlheyer *Single Cell Analysis of Industrially Relevant Bacterial Strains in Picoliter Environments* **EMBL Conference - Microfluidics 2012**, 25 – 27 July 2012, Heidelberg, Germany
- ◻ C. Probst, A. Grünberger, W. Wiechert, D. Kohlheyer *Phenotypic Sorting and Analysis of Bacteria Production Strains Using Optical Tweezers and Microfluidics* **EMBL Conference - Microfluidics 2012**, 25 – 27 July 2012, Heidelberg, Germany
- ◻ A. Grünberger ; C. Probst ; Schendzielorz, G. D. Kohlheyer ; W. Wiechert *Towards high-throughput single cell growth optimization and production analysis using picoliter bioreactors*, **Metabolic Engineering IX Biarritz**, France, 03. – 07.06.2012
- ◻ A. Gruenberger, C. Probst, S. Binder, R. Ziaee, L. Eggeling, W. Wiechert and D. Kohlheyer, *Single Cell Trapping and Analysis of Prokaryotic Production Strains in sub µm Fluidic Structures*, **Proceedings of International Conference on Miniaturized Systems for Chemistry and Life Sciences 2011**, October 2-6, 2011, Seattle, Washington, USA, ISBN 978-0-9798064-4-5
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- ◻ D. Kohlheyer, R.G.H. Lammertink, G.A.J. Besselink, S. Schlautmann, and R.B.M. Schasfoort. Electroosmotically controllable multiflow microreactor. **8th International Conference on Miniaturized Systems for Chemistry and Life Sciences 2004**. 26-30 September 2004, Malmö, Sweden

### 3<sup>rd</sup> Party Funding

- ◻ *Helmholtz Young Investigators Group “Microscale Bioengineering”*, VH-NG-1029, 5 year group funding, **2014-2018**, 09.2013, **Helmholtz Association**
- ◻ *Spontaneous prophage induction in a subpopulation of Corynebacterium glutamicum cells – Assessment of trigger and physiological consequence, An interdisciplinary approach combining microbiology, modelling, and microfluidics*, Dr. J. Frunzke, Dr. D. Kohlheyer, Prof. W. Wiechert, **DFG Priority Program SPP1617, 2012-2015**
- ◻ *Neue Optosensoren und Photoregulatoren zur Licht-vermittelten Steuerung und Analyse molekularer Systeme (OptoSys)*, Prof. Dr. K.-E. Jaeger, Dr. T. Drepper, Dr. U. Krauss, Prof. Dr. W. Wiechert, Prof. Dr. M. Pohl, Dr. D. Kohlheyer, Prof. Dr. M. Bott, Dr. J. Frunzke, Dr. T. Gensch, Prof. Dr. D. Willbold, PD Dr. R. Batra-Safferling, PD Dr. J. Granzin, Prof. Dr. J. Pietruszka, Dr. S. Meyer zu Berstenhorst, Prof. Dr. J. Büchs, Heinrich Heine Universität Düsseldorf, Forschungszentrum Jülich, RWTH Aachen, **BMBF „Nächste Generation biotechnologischer Verfahren – Biotechnologie 2020+“ 2013-2016**
- ◻ *Molecular Interaction Engineering*, W. Wiechert FZ Jülich, J. Hubbuch KIT, **BMBF „Nächste Generation biotechnologischer Verfahren – Biotechnologie 2020+“ 2013-2016**

### Supervised Theses

#### PhD theses

- ◻ Alexander Grünberger, **RWTH Aachen**, in progress
- ◻ Christopher Probst, **Siegen University**, in progress
- ◻ Christina Krämer, **RWTH Aachen**, in progress

#### Master / bachelor / intern projects

- ◻ Camille Gautier, **Ecole Centrale Marseille**, in progress
- ◻ Christian Freier, **Westfälische Hochschule Bocholt**, in progress
- ◻ Sophie Weber, *Optimizing growth performance of Corynebacterium glutamicum at the single-cell level*, **University of Applied Sciences Aachen (Jülich)**, July 2014
- ◻ Julio Arreola, *Temperature control in microfluidics for single-cell analysis: development and characterization of thin-film sensors*, **University of Applied Sciences Aachen (Jülich)**, April 2014
- ◻ Christian Sachs, *Automated High-Throughput Analysis of Single Bacteria in Microfluidic Habitats*, **Goethe Universität Frankfurt**, February 2014
- ◻ Johanna Heinrich, *Microbial growth studies in well controlled pl environments on single cell level*, Faculty of Mathematics, Computer Science and Natural Sciences, **RWTH Aachen**, April 2013

- Philipp Frank, *Entwicklung und Charakterisierung von integrierten Polydimethylsiloxane-basierten Ventilen und Pumpen für den Einsatz in der mikrofluidischen Einzelzellanalyse*, Fakultät Elektrotechnik und Informationstechnik, **Technische Universität Dresden**, November 2012
- Mengmeng Wang, *Prevention of Bacterial Cell Adhesion for Microfluidic Single Cell Analysis*, Institut für Werkstoffe der Elektrotechnik, **RWTH Aachen**, April 2012
- Roshanak Ziaee, *Development and Fabrication of Microfluidic Systems for Single Cell Analysis*, FB-8 Maschinenbau und Mechatronik, **Fachhochschule Aachen**, March 2011
- Christopher Probst, *Concept and realization of a test setup to analyse the behaviour of E. coli in a microfluidic chip*, **Ingolstadt University of Applied Sciences**, January 2011

### Conference Organization

- *Symposium on Advanced Imaging in Cell- and Microbiology: Technology and Applications*, Chair: Dietrich Kohlheyer and Julia Frunzke, 10.10 – 11.10.2013, Forschungszentrum Jülich, Jülich, Germany

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