

**Institut of Process Engineering
Chair of Mechanical Process Engineering**



Jun.-Prof. Dr.

Fakultät für Verfahrens- und Systemtechnik
Institut für Verfahrenstechnik
Lehrstuhl Mechanische Verfahrenstechnik

Fabian Denner's research focuses on the development of new and innovative methods for the numerical modelling of incompressible and compressible multiphase flows and an improved understanding of the complex physics governing interfacial flows with surface tension. The prime objective of Fabian's work is the development of pioneering numerical methods that enable and drive a paradigm shift from experimental to computational development of engineering applications and processes that feature interfacial flows and rely on an in-depth understanding of interfacial transport mechanisms. In addition, Fabian is actively working on coupled finite-volume frameworks for multiphase flows and the integration of different multiphase flow modelling approaches with each other.

Fabian graduated from the University of Stuttgart in 2009 with a diploma (Dipl.-Ing.) in Automotive Engineering, during which time he worked for Alstom, Porsche, ETH Zurich and the German Aerospace Center (DLR). He then completed his PhD in Computational Fluid Dynamics at the Imperial College London Department of Mechanical Engineering, where his PhD thesis entitled "Balanced-force Two-Phase Flow Modeling on Unstructured and Adaptive Meshes" was awarded the *Margaret Fishend Centenary Memorial Prize 2015* for the best PhD thesis in the previous 5-year period at the Department of Mechanical Engineering. This was followed by a postdoctoral position, also at Imperial College London. In 2015, Fabian secured a prestigious research fellowship from the Engineering and Physical Sciences Research Council (EPSRC) in the UK, with which he continued his research on two-phase flows with surface tension and the corresponding numerical methods for another 3 years at Imperial College London. Together with four colleagues, he was awarded the *Gallery of Fluid Motion Award 2016* of the American Physical Society for a subproject of this research.

Since 2018, Fabian is Junior Professor in Multiphase Flow Modelling at the Chair of Mechanical Process Engineering. His current research focuses on the numerical modelling of compressible interfacial flows, such as cavitation processes, as well as microfluidic phenomena, applications and processes, which are becoming increasingly important in process engineering, e.g. in future-oriented manufacturing technologies, in the cooling of modern power electronics or in medical engineering.

- ▶ Since 2018: Junior Professor in Multiphase Flow Modelling, Otto-von-Guericke-Universität Magdeburg
- ▶ 2015-2018: EPSRC Fellow, Imperial College London
- ▶ 2013-2015: Research Associate, Imperial College London
- ▶ 2009-2013: PhD Student in Mechanical Engineering, Imperial College London
- ▶ 2003-2009: Student (Dipl.-Ing.) in Automotive Engineering, Universität Stuttgart

Fabian on Google Scholar: > <https://scholar.google.de/citations?user=WvaLvxsAAAAJ&hl=en&oi=ao> (<https://scholar.google.de/citationuser=WvaLvxsAAAAJ&hl=en&oi=ao>)

Fabian on Researchgate: > https://www.researchgate.net/profile/Fabian_Denner (https://www.researchgate.net/profile/Fabian_Denner)