

## Univ-Prof. Wolfgang Polifke, Ph.D.

Technical University of Munich, Dept. of Mechanical Engineering

### *Education*

- 1981-1987 Study of Physics at U. Regensburg, U. of Colorado in Boulder, City College of the City University of New York. *M. A. in Physics*
- 1990 Dissertation *Aspects of Helicity in Turbulent Flows*, CUNY  
Ph.D. Advisor: Prof. Andreas Acrivos

### *Professional Experience*

- 1987–1990 Research assistant, *Levich Institute* / Physics Department, CCNY
- 1988 Visiting scholar, *Center for Turbulence Research*, Stanford University
- 1990–1999 ABB Corporate Research Center, Baden-Dättwil, Switzerland (since 1994 project leader, since 1998 group leader *Fundamentals of Combustion Technology*)
- 1999 Professor (C3) at the Department of Mechanical Engineering at TUM

### *Honors, Prizes, Awards*

- 2007 Offer Professorship (W3) *Technische Verbrennung*, Universität Stuttgart
- 1998 Best Application Paper Award (Combustion & Fuels Committee of ASME/IGTI)

### *Referee, Advisory Activity, Memberships*

- Editor-in-Chief, *Int. J. of Spray and Comb. Dynamics* (since 2016)
- Member of the Editorial Board, *Combustion & Flame* (since 2017)
- Member of the Editorial Board, *Int. J. of Spray and Comb. Dynamics* (2008–2015)
- Referee for *AIAA Journal*, *Appl. Acoustics*, *Appl. Math. Modelling*, *ASME J. of Propulsion & Power*, *Chem. Eng. Sci.*, *Comb. & Flame*, *Comb. Sci. Tech.*, *Comb. Theory and Modelling*, *Energy*, *Flow Turbulence & Combustion*, *Ind. & Eng. Chem. Research*, *Int. J. Acoust. & Vib.*, *Int. J. Heat Mass Transfer*, *Int. J. Spray & Comb. Dyn.*, *J. Fluid Mech.*, *J. of Fluids & Structures*, *J. Eng. Gas Turbines & Power*, *J. Heat and Mass Transfer*, *J. of Fluids & Structures*, *J. Sound Vib.*, *Phys. Letters A*, *Phys. of Fluids*, *Proc. Comb. Inst.*, *Prog. Energ. Combust. Sci.*
- Referee for DFG, FFG, NSERC, SWT, World Bank Innovation Fund
- External advisor for academic promotion committees at U. Cambridge, Imperial College London, IIT Madras, U. Melbourne, U. Stanford, ETH Zürich
- Coordinator *Summer School and Workshop on non-normal and nonlinear effects in Aero- and Thermoacoustics*, May 2010 und June 2013
- Co-Chair / Chair of Colloquium *Gas Turbine Combustion* at the *Int'l. Symp. on Combustion* (2014, 2016, 2018)
- Combustion Institute, DAGA, ERCOFTAC, IIAV, VDI

### *Discipline*

Thermo-Fluidynamics, Engineering Thermodynamics.

### *Research interests*

Thermo-acoustic (combustion) instabilities, stability analysis, system identification, (aero-) acoustics, mixing and reaction in turbulent flows, polydisperse multi-phase flows.

See <http://www.tfd.mw.tum.de> for a list of ongoing research activities.

## Publications

Selected articles published by outlets with scientific quality assurance:

1. M. Merk, R. Gaudron, C. Silva, M. Gatti, C Mirat, T Schuller, and W. Polifke. Prediction of Combustion Noise of an Enclosed Flame by Simultaneous Identification of Noise Source and Flame Dynamics. *Proceedings of the Combustion Institute*, 37, 2018
2. Shuai Guo, Camilo F. Silva, Michael Bauerheim, Abdulla Ghani, and Wolfgang Polifke. Evaluating the impact of uncertainty in flame impulse response model on thermoacoustic instability prediction: A dimensionality reduction approach. *Proceedings of the Combustion Institute*, online, July 2018
3. Alp Albayrak, Thomas Steinbacher, Thomas Komarek, and Wolfgang Polifke. Convective Scaling of Intrinsic Thermo-Acoustic Eigenfrequencies of a Premixed Swirl Combustor. *Journal of Engineering for Gas Turbines and Power*, 140(4):041510–041510–9, April 2018
4. T. Emmert, S. Bomberg, S. Jaensch, and W. Polifke. Acoustic and Intrinsic Thermoacoustic Modes of a Premixed Combustor. *Proceedings of the Combustion Institute*, 36(3):3835–3842, 2017
5. S. Jaensch, M. Merk, E.A. Gopalakrishnan, S. Bomberg, T. Emmert, R.I. Sujith, and W. Polifke. Hybrid CFD/Low-Order Modeling of Nonlinear Thermoacoustic Oscillations. *Proceedings of the Combustion Institute*, 36(3):3827–3834, 2017
6. L. Strobio Chen, S. Bomberg, and W. Polifke. Propagation and Generation of Acoustic and Entropy Waves Across a Moving Flame Front. *Combustion and Flame*, 166:170–180, April 2016
7. Thomas Emmert, Sebastian Bomberg, and Wolfgang Polifke. Intrinsic Thermoacoustic Instability of Premixed Flames. *Combustion and Flame*, 162(1):75–85, 2015
8. Ralf S. Blumenthal, Priya Subramanian, R.I. Sujith, and Wolfgang Polifke. Novel Perspectives on the Dynamics of Premixed Flames. *Combustion and Flame*, 160(7):1215–1224, March 2013

Scopus Author ID 6701840649: 200+ Documents, 2800+ Citations, h-Index 29

Google Scholar: 400+ Documents, 5500+ Citations, h-Index 42

See <http://scholar.google.de/citations?hl=en&user=VWuhsecAAAAJ>

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