

Subtopic 2.2: Components & Cells

Dr. Ing. Timo Danner

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Current position

Group leader “Microstructure-resolved simulations and applications” at DLR, Institute of Engineering Thermodynamics, Computational Electrochemistry (since 2018)

Previous positions (two selected)

Ph.D. student at the University of Stuttgart, Institute of Thermodynamics and Heat Technology (ITW) and DLR, Institute of Engineering Thermodynamics.

Senior Scientist at the DLR, Institute of Engineering Thermodynamics and Helmholtz-Institute Ulm, Germany.

Scientific degree

Dr.-Ing. (PhD) in Chemical Engineering, University of Stuttgart, Germany (2015)

Recent research topics

Li-Ion, Metal-sulfur and Metal-air batteries; pore-scale and multi-phase simulation techniques for electrochemical devices

Awards, honors, memberships

Lewa Price for the Master-thesis ‘Advanced Monte Carlo methods for the calculation of vapor-liquid equilibria in the field of process engineering’

Publications (5 most important)

- **M. Finsterbusch, T. Danner, C.L. Tsai, S. Uhlenbruck, A. Latz, O. Guillon**, High Capacity Garnet-Based All-Solid-State Lithium Batteries: Fabrication and 3D-Microstructure Resolved Modeling, *ACS Appl. Mater. Interfaces*. 10 (2018) 22329–22339. [doi:10.1021/acsami.8b06705](https://doi.org/10.1021/acsami.8b06705).
- **T. Danner**, M. Singh, **S. Hein**, J. Kaiser, **H. Hahn, A. Latz**, Thick electrodes for Li-ion batteries: A model based analysis, *J. Power Sources*. 334 (2016) 191–201. [doi:10.1016/j.jpowsour.2016.09.143](https://doi.org/10.1016/j.jpowsour.2016.09.143).
- **T. Danner**, S. Eswara, V.P. Schulz, **A. Latz**, Characterization of gas diffusion electrodes for metal-air batteries, *J. Power Sources*. 324 (2016) 646–656. [doi:10.1016/j.jpowsour.2016.05.108](https://doi.org/10.1016/j.jpowsour.2016.05.108).
- **T. Danner**, G. Zhu, A.F. Hofmann, **A. Latz**, Modeling of nano-structured cathodes for improved lithium-sulfur batteries, *Electrochim. Acta*. 184 (2015) 124–133. [doi:10.1016/j.electacta.2015.09.143](https://doi.org/10.1016/j.electacta.2015.09.143).
- **B. Horstmann, T. Danner**, W.G. Bessler, Precipitation in aqueous lithium–oxygen batteries: a model-based analysis, *Energy Environ. Sci*. 6 (2013) 1299. [doi:10.1039/c3ee24299d](https://doi.org/10.1039/c3ee24299d).