Fabrication of Full All-Solid-State Batteries by Powder Aerosol Deposition

Lukas Hennerici defended his doctoral thesis

Congratulations!

Lukas Hennerici defended his doctoral thesis about "Solid-State Batteries with Composite Cathodes Manufactured by the Powder Aerosol Deposition Method" (German original title: "*Mittels aerosolbasierter Kaltabscheidung hergestellte Festkörperbatterien mit Kompositkathoden*") on Thursday, October 29th, 2026.

Dr. Hennerici's research was conducted within the framework of the Bavarian Center for Battery Technology (BayBatt) in close cooperation with the Chair of Battery Technology and Electrochemical Energy Storage (Prof. Danzer). The work was supported by the (former) German Federal Ministry of Education and Research (BMBF) through a joint research project.

Special thanks to Prof. Nella Varga-Barbosa for her support as the second examiner!

Dr. Hennerici already published several parts of his thesis in peer-reviewed journals:

L. Hennerici, T. Fuchs, S. Lang, D. Paulus, M. Linz, D. Kramer, R. Mönig, J. Janek, D. Schönauer-Kamin, R. Moos:
Powder Aerosol Deposition and Electrochemical Characterization of 30 µm thick LLZO Solid Electrolyte as a Separator Layer for Solid-State Batteries
Journal of Thermal Spray Technology, **35**, 2736-2750 (2026), doi: 10.1007/s11666-026-02240-3

L. Hennerici, D. Bröse, M. Schamel, S. Lang, P. Ficht, D. Kramer, R. Mönig, M.A. Danzer, R. Moos:
Progress in the Cycling Performance of Oxidic Solid-State Batteries Fabricated at Room Temperature by Powder Aerosol Deposition
Journal of The Electrochemical Society, **173**, 040517 (2026), doi: 10.1149/1945-7111/ae4543

L. Hennerici, P. Ficht, M. Schamel, U. Mansfeld, M. Linz, D. Paulus, J. Kita, M.A. Danzer, R. Moos:
Lithium All-Solid-State Batteries Fabricated at Room Temperature by the Powder Aerosol Deposition Method with Garnet-Type Electrolyte and Graded Composite Cathode
Advanced Materials Technologies, **10**, 2400745 (2025), doi: 10.1002/admt.202400745



The evaluation board and the candidate.
From left to right: Prof. Cavalcanti-Adam, Prof. Vargas-Barbosa, Dr. Hennerici, Prof. Moos, and Prof. Danzer

Lehrstuhl für Funktionsmaterialien | Universität Bayreuth | Telefon: +49 (0)921 55 7401 | E-Mail: funktionsmaterialien@uni-bayreuth.de