

MTET TOPIC 2: ELECTROCHEMICAL ENERGY STORAGE

Subtopic 2.1: Fundamentals & Materials

Dr. Sonia Dsoke

ORCID: 0000-0001-9295-2110



Current position

Head of the Division “Material Synthesis” at Institute for Applied Materials – Energy Storage Systems, KIT (since 2017)

Previous position

Junior research group leader at ZSW, Ulm, Germany (2012-16)

Scientific degree

PhD in chemistry / University of Camerino, Italy (2005)

Recent research topics

Li-ion batteries; post Li-ion batteries; Electrochemical double layer capacitors; Hybrid capacitors.

Awards and honors

MWK Grant: “Brigitte Schlieben-Lange Programm” for excellent young scientists with children.

BMBF Grant: Junior research group within the framework “Energy Storage Initiative”

Publications (5 most important)

- **S. Dsoke**, B. Fuchs, E. Gucciardi, M. Wohlfahrt-Mehrens, The importance of the electrode mass ratio in a Li-ion capacitor based on activated carbon and $\text{Li}_4\text{Ti}_5\text{O}_{12}$, *J. Power Sources*, 282, 385-393 (2015)
[doi:10.1016/j.jpowsour.2015.02.079](https://doi.org/10.1016/j.jpowsour.2015.02.079)
- **Z. Zhao, G. Tian, A. Sarapulova, V. Trouillet, Q. Fu, U. Geckle, H. Ehrenberg and S. Dsoke**, Elucidating the energy storage mechanism of ZnMn_2O_4 as promising anode for Li-ion batteries, *J. Mater. Chem. A*, 6, 19381-19392 (2018)
[doi:10.1039/C8TA06294C](https://doi.org/10.1039/C8TA06294C)
- **D. Stępień, Z. Zhao and S. Dsoke**, Shift to Post-Li-Ion Capacitors: Electrochemical Behavior of Activated Carbon Electrodes in Li-, Na- and K-Salt Containing Organic Electrolytes, *J. Electrochem. Soc.*, 165 (11) A2807-A2814 (2018)
[doi:10.1149/2.0921811jes](https://doi.org/10.1149/2.0921811jes)
- M. Secchiaroli, S. Calcaterra, H.Y. Tran, S.J. Rezvani, F. Nobili, R. Marassi, M. Wohlfahrt-Mehrens and **S. Dsoke**, Development of Non-Fluorinated Cathodes Based on $\text{Li}_3\text{V}_{1.95}\text{Ni}_{0.05}(\text{PO}_4)_3/\text{C}$ with Prolonged Cycle Life: A Comparison among Na-Alginate, Na-Carboxymethyl Cellulose and Poly(acrylic acid) Binders, *J. Electrochem. Soc.*, 164 (4) A672-A683 (2017) [doi:10.1149/2.0781704jes](https://doi.org/10.1149/2.0781704jes)
- **K. Pfeifer, S. Arnold, J. Becherer, C. Das, J. Maibach, H. Ehrenberg and S. Dsoke**, Can Metallic Sodium Electrodes Affect the Electrochemistry of Sodium-Ion-Batteries? – Reactivity Issues and Perspectives, *ChemSusChem*, first published: 02 May 2019 [doi:10.1002/cssc.201901056](https://doi.org/10.1002/cssc.201901056)