



Jana H. Börner

GERMANY

Affiliation

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Research fields and interests

Jana H. Börner is a geophysicist and petrophysicist working on the physical properties of multiphase geosystems and their application in the field. She is particularly interested in the geophysical manifestations of physicochemical interactions between solid, liquid and gaseous rock components under both ambient and reservoir conditions. The corresponding applications include monitoring, exploration and imaging of e.g. geogenic carbon, carbon capture and storage, geothermal systems and volcanic terrain. Methodologically, her work focuses on electrical and electromagnetic techniques, laboratory experiments under ambient and reservoir conditions, petrophysical modelling, numerical simulation and inverse problems.

Education and Employment

- Since 2019** Senior researcher and lecturer at TU Bergakademie Freiberg
- 2018** Visiting scientist at **Universitat de Barcelona**, Department of Geodynamics and Geophysics during one month (Barcelona, Spain)
- 2016 - 2018** Post-doctoral researcher and Co-PI of project "Spectral Induced Polarization of Carbonates during Exposure to Reactive Gases under Reservoir Conditions" at TU Bergakademie Freiberg
- 2016** PhD thesis in **Geophysics**: „Electrical phenomena during CO₂ – rock interaction under reservoir conditions – experimental investigations and their implications for electromagnetic monitoring applications“, Freiberg, Germany

Awards and Scholarships

- 2019** **Gerald W. Hohmann Career Achievement Award for Outstanding Young Scientists by the Gerald W. Hohmann Memorial Trust, USA**, for investigations on the petrophysical nature of electric conductivity
- 2018** **Karl-Zoeppritz Award of the German Geophysical Society (DGG)** for achievements as a young scientist in the field of electrical rock properties under reservoir conditions
- 2015** **Best oral presentation prize at the 75th Annual Conference of the German Geophysical Society (DGG)**
- 2013 – 2015** **Fellow of the Christiane Nüsslein-Volhard-Foundation** for the promotion of science and research of talented young women with children
- 2010** **Georgius Agricola Medal of TU Bergakademie Freiberg** for outstanding academic performance
- 2004 –2009** **Fellow of the German Academic Scholarship Foundation**

Selected publications

- Börner, J.H., Herdegen, V., Repke, J.-U., and Spitzer, K., 2013. The impact of CO₂ on the electrical properties of water bearing porous media - laboratory experiments with respect to carbon capture and storage. *Geophysical Prospecting*. 61: 446 - 460.
- Börner, J.H., Bär, M. and Spitzer, K., 2015. Electromagnetic methods for exploration and monitoring of enhanced geothermal systems - a virtual experiment. *Geothermics*. 55: 78 - 87.
- Börner, J.H., Herdegen, V., Repke, J.-U. and Spitzer, K., 2017. Spectral induced polarization of the three-phase system CO₂ - brine - sand under reservoir conditions. *Geophysical Journal International*. 208 (1): 289 - 305.
- Börner, J.H., Girault, F., Bhattarai, M., Adhikari, L. B., Deldicque, D., Perrier, F., and Spitzer, K., 2018. Anomalous complex electrical conductivity of a graphitic black schist from the Himalayas of central Nepal. *Geophysical Research Letters*, 45, 3984–3993.
- Börner, J.H., Herdegen, V., Repke, J.-U. and Spitzer, K., 2022. Retrieving Electrical and Structural Carbonate Formation Properties from Measurements on Crushed Rock using a Multi-Data Inversion Approach. *Geophysical Journal International*, 230 (2): 849-869.

Early Career Scientist Award (2023)

of the International Union of Geodesy and Geophysics (IUGG)

<http://iugg.org/>

