

Scientific Curriculum Vitae

Prof. Dr.-Ing. Björn Corzilius

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Current Position:

University Professor (W2)

Current institute address:

Universität Rostock
Mathematisch-Naturwissenschaftliche Fakultät
Institut für Chemie
Abteilung für Physikalische Chemie
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EDUCATION

Ph.D. (Dr.-Ing.) in Chemistry (Physical Chemistry)

2008

Technical University Darmstadt

Darmstadt, Germany

Dissertation: Electromagnetic Properties of Single-Walled Carbon Nanotubes Investigated by Microwave Absorption

Diploma (Dipl.-Ing.) in Chemistry (Physical Chemistry)

2005

Technical University Darmstadt

Darmstadt, Germany

Thesis: Präparation und EPR-Untersuchung von endohedral paramagnetisch dotierten Fulleren-Peapods $N@C_{60}@SWNT$ und $N@C_{70}@SWNT$

ACADEMIC CAREER

University of Rostock	Rostock, Germany
Professor of Physical Chemistry with Focus on Solid-State NMR Spectroscopy	since 2019
Goethe University Frankfurt	Frankfurt am Main, Germany
Emmy Noether Research Group Leader	2013–2019
Massachusetts Institute of Technology	Cambridge, MA
Postdoctoral Fellow and Associate, Advisor: Prof. Robert G. Griffin	2009–2013
Technical University Darmstadt	Darmstadt, Germany
Doctoral Researcher, Advisor: Prof. Klaus-Peter Dinse	2005–2008
Technical University Darmstadt	Darmstadt, Germany
Graduate Researcher (Diploma thesis), Advisor: Prof. Klaus-Peter Dinse	2004–2005
Technical University Darmstadt	Darmstadt, Germany
Student Researcher, Advisor: Prof. Klaus-Peter Dinse	2003

HONORS AND AWARDS

Beste Promotionsbetreuung	2018
For best Ph.D. supervision in all natural and life sciences GRADE Research Academy, Goethe University Frankfurt	
Regitze R. Vold Memorial Prize	2017
10 th Alpine Conference on Solid-state NMR (Groupement AMPERE & ISMAR)	
Felix Bloch Lecture	2016
Magnetic Resonance Division of the German Chemical Society (GDCh)	
Emmy Noether Fellowship	2012
Deutsche Forschungsgemeinschaft	
Research Fellowship	2009
Deutsche Forschungsgemeinschaft Host: Prof. Dr. Robert G. Griffin, Massachusetts Institute of Technology	
Alarich-Weiss-Preis	2006
For best diploma thesis in physical chemistry or related fields Department of Chemistry, Technical University Darmstadt	
Dr.-Anton-Keller-Preis	2002
For excellent undergraduate (Vordiplom) results Department of Chemistry, Technical University Darmstadt	
Buchpreis des Fonds der Chemischen Industrie	1999
Fonds der Chemischen Industrie	

SELECTED PUBLICATIONS (full list available)

List of ten most important peer-reviewed journal articles (chronologically ordered)

V. Aladin, M. Vogel, R. Binder, I. Burghardt, B. Suess, and B. Corzilius*: Complex formation of the tetracycline-binding aptamer investigated by specific cross-relaxation under DNP, *Angew. Chem.* **131**, 4917–4922 (2019); *Angew. Chem. Int. Ed.* **58**, 4863–4868 (2019).

J.J. Wittmann, M. Eckardt, W. Harneit, B. Corzilius*: Electron-driven spin diffusion supports crossing the diffusion barrier in MAS DNP, *Phys. Chem. Chem. Phys.* **20**, 11418–11429 (2018).

A. S. Lilly-Thankamony, J. J. Wittmann, M. Kaushik, and B. Corzilius*: Dynamic nuclear polarization for sensitivity enhancement in modern solid-state NMR, *Prog. Nucl. Magn. Reson. Spectrosc.* **102–103**, 120–195 (2017).

M. Kaushik, M. Qi, A. Godt,* and B. Corzilius*: Bis-Gadolinium Complexes for Solid Effect and Cross Effect Dynamic Nuclear Polarization, *Angew. Chem.* **134**, 4359–4363 (2017); *Angew. Chem. Int. Ed.* **56**, 4295–4299 (2017).

D. Daube, V. Aladin, J. Heiliger, J. J. Wittmann, D. Barthelmes, C. Bengs, H. Schwalbe, and B. Corzilius*: Heteronuclear Cross-relaxation under Solid-state Dynamic Nuclear Polarization, *J. Am. Chem. Soc.* **138**, 16572 (2016).

M. Kaushik, T. Bahrenberg, T. V. Can, M. A. Caporini, R. Silvers, J. Heiliger, A. A. Smith, H. Schwalbe, R. G. Griffin, and B. Corzilius*: Gd(III) and Mn(II) Complexes for Dynamic Nuclear Polarization: Small Molecular Chelate Polarizing Agents and Applications with Site-directed Spin Labeling of Proteins, *Phys. Chem. Chem. Phys.* **18**, 27205–27218 (2016).

B. Corzilius*: Theory of Solid Effect and Cross Effect Dynamic Nuclear Polarization with Half-integer High-spin Metal Polarizing Agents in Rotating Solids, *Phys. Chem. Chem. Phys.* **18**, 27190–27204 (2016).

P. Wenk, M. Kaushik, D. Richter, M. Vogel, B. Suess, and B. Corzilius*: Dynamic Nuclear Polarization of Nucleic Acid with Endogenously Bound Manganese, *J. Biomol. NMR* **63**, 97–109 (2015).

K. K. Frederick, V. K. Michaelis, B. Corzilius, T.-C. Ong, A. C. Jacavone, R. G. Griffin, and S. Lindquist: Sensitivity Enhanced NMR Reveals Alterations in Protein Structure by Cellular Milieus, *Cell* **163**, 620–628 (2015).

B. Corzilius, A. A. Smith, A. B. Barnes, C. Luchinat, I. Bertini, and R. G. Griffin: High-Field Dynamic Nuclear Polarization with High-Spin Transition Metal Ions, *J. Am. Chem. Soc.* **133**, 5648–5651 (2011).

Patents

T. M. Swager, R. G. Griffin, O. Haze, B. Corzilius, and A. A. Smith. Radical Polarizing Agents for Dynamic Nuclear Polarization, U.S. Patent 8,715,621, filed March 15, 2012, and issued May 6, 2014.

BIBLIOMETRICS (as of 2019/05/13)

48 peer-reviewed journal articles (15 corresponding authorships, 15 first or shared first authorships)

3 invited review articles or book chapters (corresponding or sole authorship)

5 non peer-reviewed invited articles (including 2 first and 2 corresponding authorships)

1 patent (issued as US patent and filed internationally)

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