Prof. Dr. Olav Schiemann

Personal Data

Title	Prof. Dr.
First name	Olav
Name	Schiemann
Current position	Full Professor (W3)
Current institution(s)/site(s), country	Clausius-Institute of Physical and Theoretical Chemistry (C-IPTC), Rheinische Friedrich-Wilhelms-University Bonn, Germany
Identifiers/ORCID	orcid.org/0000-0001-6346-9779

Qualifications and Career

Stages	Periods and Details	
Degree programme	Diploma in Chemistry,1989 – 1995, University of Marburg, Germany	
Doctorate	1995 – 1998	Mentor: C. Elschenbroich, Ph.D. in Chemistry, University of Marburg, Germany
Stages of academic/professional career	Since 2011	Full Professor (W3), C-IPTC, University of Bonn, Germany
	2011 – 2014	Professor (20%), Biophysical Chemistry, School of Biology, University of St Andrews, UK
	2008 – 2011	Reader, Biophysical Chemistry, School of Biology, University of St Andrews, UK
	2007 – 2008	Lecturer, Biophysical Chemistry, School of Biology, University of St Andrews, UK
	2005 – 2006	Acting Professor, Physical Chemistry, Technical University of Munich, Germany
	2003 – 2007	Privatdozent, IPTC, University of Frankfurt, Germany
	2000 – 2003	Habilitand (Mentor: T.F. Prisner), IPTC, University of Frankfurt, Germany
	1998 – 2000	Postdoctoral fellow (Mentor: J.K. Barton), California Institute of Technology, USA

Activities in the Research System

Committee involvement & activities in the field of academic self-governance:

Since 2024	Representative of Germany in the EFEPR Board
Since 2023	Recruitment Commissioner, University of Bonn
Since 2021	Chair “AK EPR”, GDCh-Fachgruppe “Magnetische Resonanz”
Since 2019	Editorial Board member of the Journals *Molecules* and *Analysis & Sensing*
Since 2016	Board member, BIGs “Chemistry”, University of Bonn
2018 – 2022	Board member, TRA Matter, Excellence Initiative University of Bonn
2018 – 2021	International Representative RSC ESR Spectroscopy Group, UK
2018 – 2021	Independent Steering Committee, EPSRC National EPR Facility, UK
2014 – 2018	Managing Director, C-IPTC, University of Bonn
2011	Director, Centre of Magnetic Resonance, University of St Andrews, UK

2009 – 2011	Chair Elect/Chair/Past Chair, Molecular Biophysics Subgroup, Biophysical Society (USA)

Memberships in scientific societies: German Society of Molecular Biology (since 2024); Bonn Forum Biomedicine (since 2024); European Federation of EPR Groups (since 2011); International EPR Society (since 2011); Member of the German Academic Organization (Deutscher Hochschulverband; since 2010); GDCh, Division "Magnetic Resonance" (since 1995).

Academic Distinctions: Weston Visiting Professorship, Weizmann Institute, Israel (2022); One of the Most Outstanding Referees for *Angew. Chem. Int. Ed.* (2021, 2022); RCUK Fellowship (2007 – 2011); Hermann-Willkomm-Award of the University of Frankfurt (2004); DFG Habilitation Fellowship (2001 – 2003); DFG Research Fellowship (1999 – 2000); DFG Postdoc Fellowship (1998 – 1999).

Scientific Results

Citations: 7225, h-index: 46, i10-index: 107 (Google Scholar, 21.03.2024)

Category A (* corresponding author)

1. J. Borggräfe, J. Victor, H. Rosenbach, A. Viegas, C.G.W. Gertzen, C. Wuebben, H. Kovacs, M. Gopalswamy, D. Riesner, G. Steger, **O. Schiemann**, H. Gohlke, I. Span, M. Etzkorn* "Time-resolved structural analysis of an RNA-cleaving DNA catalyst" *Nature* **2022**, 601, 144–149. DOI: 10.1038/s41586-021-04225-4.

2. **O. Schiemann***, C.A. Heubach, D. Abdullin, K. Ackermann, M. Azarkh, E.G. Bagryanskaya, M. Drescher, B. Endeward, J.H. Freed, L. Galazzo, D. Goldfarb, T. Hett, L.E. Hofer, L.F. Ibáñez, E.J. Hustedt, S. Kucher, I. Kuprov, J.E. Lovett, A. Meyer, S. Ruthstein, S. Saxena, S. Stoll, C. Timmel, M. Di Valentin, H.S. Mchaourab*, T.F. Prisner*, B.E. Bode*, E. Bordignon*, M. Bennati*, G. Jeschke* "Benchmark test and guidelines for DEER/PELDOR experiments on nitroxide-labeled biomolecules" *J. Am. Chem. Soc.* **2021**, 143, 17875–17890. DOI: 10.1021/jacs.1c07371.

3. D. Nguyen, D. Abdullin, C.A. Heubach, T. Pfaffeneder, A. Nguyen, A. Heine, K. Reuter, F. Diederich, **O. Schiemann***, G. Klebe* "Unraveling a ligand-induced twist of a homodimeric enzyme by pulsed electron-electron double resonance" *Angew. Chem. Int. Ed.* **2021**, 60, 23419–23426. DOI: 10.1002/anie.202108179.

4. T. Hett, T. Zbik, S. Mukherjee, H. Matsuoka, W. Bönigk, D. Klose, C. Rouillon, N. Brenner, S. Peuker, R. Klement, H.-J. Steinhoff, H. Grubmüller, R. Seifert, **O. Schiemann***, U.B. Kaupp***** "Spatiotemporal Resolution of Conformational Changes in Biomolecules by Combining Pulsed Electron-Electron Double Resonance Spectroscopy with Microsecond Freeze-Hyperquenching" *J. Am. Chem. Soc.* **2021**, 143, 6981–6989. DOI: 10.1021/jacs.1c01081.

5. C. Wuebben, M.F. Vicino, M. Mueller, **O. Schiemann*** "Do the P1 and P2 hairpins of the Guanidine-II Riboswitch interact?" *Nucleic Acids Res.* **2020**, 48, 10518–10526. DOI: 10.1093/nar/gkaa703.

6. N. Fleck, C.A. Heubach, T. Hett, F.R. Haege, P.P. Bawol, H. Baltruschat, **O. Schiemann*** "SLIM: A short-linked, highly redox-stable trityl label for high-sensitivity in-cell EPR distance measurements" *Angew. Chem. Int. Ed.* **2020**, 59, 9767–9772. DOI: 10.1002/anie.202004452.

7. C. Domnick, F. Eggert, C. Wuebben, L. Bornewasser, G. Hagelueken, **O. Schiemann***, S. Kath-Schorr* “EPR Distance measurements on long non-coding RNAs empowered by genetic alphabet expansion transcription” *Angew. Chem. Int. Ed.* **2020**, 59, 7891–7896. DOI: 10.1002/anie.201916447.
8. J.J. Jassoy, A. Berndhäuser, F. Duthie, S.P. Kühn, G. Hagelueken, **O. Schiemann*** “Versatile Trityl Spin Labels for Nanometer Distance Measurements on Biomolecules in vitro and within cells” *Angew. Chem. Int. Ed.* **2017**, 56, 177–181. DOI: 10.1002/anie.201609085.
9. D. Abdullin, N. Florin, G. Hagelueken, **O. Schiemann*** “EPR-Based Approach for the Localization of Paramagnetic Metal Ions in Biomolecules” *Angew. Chem. Int. Ed.* **2015**, 54, 1827–1831. DOI: 10.1002/anie.201410396.
10. G.W. Reginsson, S.A. Shelke, C. Rouillon, M.F. White, S.T. Sigurdsson, **O. Schiemann*** “Protein-Induced Changes in DNA Structure and Dynamics Observed with Noncovalent Site-Directed Spin-Labeling and PELDOR” *Nucleic Acids Res.* **2013**, 41, e11. DOI: 10.1093/nar/gks817.

Category B

Publications

1. **O. Schiemann*** “Studying Ribozymes with Electron Paramagnetic Resonance Spectroscopy” in *Ribozymes: Principles, Methods, Applications* (Eds.: S. Müller, B. Masquida, W. Winkler) **2021**, chapter 32, 817–859. DOI: 10.1002/9783527814527.ch32.
2. **O. Schiemann*** “Trendbericht: Elektronen-Paramagnetische-Resonanzspektroskopie” *Nachrichten aus der Chemie* **2021**, 69, 54–62. DOI: 10.1002/nadc.20214106853.
3. **O. Schiemann***, G. Hagelueken “EPR-Spektroskopie an biologischen Systemen” in *Bioanalytik* (Eds.: J. Kurrek, J.W. Engels, F. Lottspeich), 4. Auflage, **2021**, chapter 22, 527–552. DOI: 10.1007/978-3-662-61707-6_22.
4. D. Abdullin*, **O. Schiemann*** “Pulsed Dipolar EPR Spectroscopy and Metal Ions: Methodology and Biological Applications” *ChemPlusChem* **2020**, 85, 353–372. DOI: 10.1002/cplu.201900705.
5. H. Matsuoka, **O. Schiemann*** “Molecular Spins in Biological Systems” in *Biological Magnetic Resonance (Editors L. Berliner, T. Takui, G. Hanson)* **2016**, 31, 51–77. DOI: 10.1007/978-1-4939-3658-8_3.
6. R. Ward*, **O. Schiemann*** “EPR-based distance measurements in Oligonucleotides” *Struct. Bond.* **2014**, 152, 249–281. DOI: 10.1007/430_2012_76.
7. G.W. Reginsson, **O. Schiemann*** “Pulsed Electron-Electron Double Resonance: Beyond Nanometre Distance Measurements on Biomacromolecules” *Biochem. J.* **2011**, 434, 353–363. DOI: 10.1042/BJ2101871.
8. G.W. Reginsson, **O. Schiemann*** “Studying Biomolecular Complexes with Pulsed Electron-Electron Double Resonance Spectroscopy” *Biochem. Soc. Trans.* **2011**, 39, 128–139. DOI: 10.1042/BST0390128.
9. **O. Schiemann*** “Mapping Global Folds of Oligonucleotides by Pulsed Electron-Electron Double Resonance” *Methods Enzymol.* **2009**, 469, 329–351. DOI: 10.1016/S0076-6879(09)69016-9.

10. **O. Schiemann***, T.F. Prisner* “Long-range distance determinations in biomacromolecules by EPR spectroscopy” *Quart. Rev. Biophys.* **2007**, 40, 1–53. DOI: 10.1017/S003358350700460X.