

Prof. Dr. Peter R. Schreiner, PhD

Institute of Organic Chemistry, Justus-Liebig-University, Heinrich-Buff-Ring 17, D-35392 Giessen, Germany;

Tel.: +49-641-9934100; prs@uni-giessen.de; www.uni-giessen.de/schreiner;  @prsgroup.bsky.social; [ORCID](https://orcid.org/)

Education

- 1999 Privatdozent (PD), *venia legendi*, U Göttingen
- 1995 Ph.D., Computational Chemistry with Prof. H. F. Schaefer III, Center for Computational Quantum Chemistry, U Georgia, *summa cum laude*
- 1994 Dr. rer. nat., Organic Chemistry with Prof. P. v. R. Schleyer, U Erlangen-Nürnberg; *summa cum laude*
- 1992 Dipl. Chem., U Erlangen-Nürnberg, *with highest honors*

Academic Career

- 2020–date Honorary Full Professor, Macquarie University, Sydney, Australia
- 2002–date Full Professor and Liebig-Chair, Justus-Liebig-University Giessen
- 2000–2002 Associate Professor of Chemistry, Dept. of Chemistry, U Georgia, Athens, USA
- 1996–1999 Habilitand (Assistant Professor), U Göttingen, Germany

Military Service

- 1985–1987 Contract soldier (24 mo.) in the combat forces; last rank: Lieutenant of the reserves

Research Interest

Organocatalysis | Functionalized Nanodiamonds | Reactive Intermediates | Computational Chemistry

Awards and Honors

- Schrödinger-Medal of the World Association of Theoretically Oriented Chemists WATOC (2025)*
- Bristol-Meyer-Squibb-Lecture, Columbia U, New York, USA, (2025)*
- Gottfried Wilhelm Leibniz Award, of the German Research Council (DFG) (2024)*
- Heilbronner-Hückel-Lectureship of the Swiss Chemical Society (2024)*
- ERC Advanced Grant (2022–2027)*
- Elected member of the Berlin-Brandenburg Academy of Sciences (2022)*
- Arthur C. Cope Scholar Award of the American Chemical Society (2021)*
- Academy Award of the Berlin-Brandenburg Academy of Sciences (2020)*
- Inauguration of the Stan Brown Lecture, Queens U, Kingston, Canada (2020)*
- Fellow of the Royal Society of Chemistry, UK (2019)*
- Lloyd B. Thomas Lecture, U Missouri, Columbia, USA (2019)*
- Boehringer-Ingelheim Lectures, Boston College, USA (2019)*
- The Royal Society of Chemistry Physical Organic Chemistry Award (2019/20)*
- Tarrant Distinguished Visiting Professor, U Florida, Gainesville, USA (2019)*
- Novartis Lecture, Yale U, New Haven, USA (2018)*
- Inauguration of The Kornis Family Lecture, UNSW Sydney (2018)*
- Japanese Society for the Promotion of Science (JSPS) Invitation Fellowship, Japan (2018)*
- Elected member, Academy of Science and Literature | Mainz (as of 2017)*
- Adolf-von-Baeyer Memorial Medal of the GDCh (2017)*
- Patai-Rappoport Lecture, European Symposium on Organic Chemistry (ESOC), Cologne (2017)*
- Craig Visiting Professorship, Australian National University, Canberra (2017)*
- Australian Assoc. of Theor. and Comput. Chem. Lectureship, Australia (2017)*
- Kurt-Alder Lecture, University of Cologne, Germany (2015)*
- Corresponding member, North Rhine-Westphalian Academy of Sciences, Humanities, and the Arts (as of 2015)*
- Swiss Chemical Society Lectureship (2014)*
- Elected member, Leopoldina – German National Academy of Science (as of 2013)*
- Science Award of the German Technion (Israel Institute of Technology) Society (2013)*
- Honorary lifetime membership, Polish Chemical Society (as of 2013)*
- Schulich Visiting Professorship (03/2012), Israel Institute of Technology (Technion), Haifa, Israel*
- Pregl Lecture (2012), National Institute of Chemistry, Ljubljana, Slovenia*
- Honorary lifetime membership, Israel Chemical Society (as of 2009)*
- Schleyer Lecture (2010), The University of Georgia, USA*
- Török Lecture (2008), Eötvös University Budapest, Hungary*
- Minerva Beirat member, Lise Meitner for Comput. Quantum Chem., Jerusalem & Haifa, Israel (2005–2017)*
- Dirac Medal (2003), World Association of Theoretically Oriented Chemists (WATOC)*

Research Innovation Award (2000), Research Corporation
ADUC-Prize for Assistant Professors (1999), German Chemical Society
Award from the Otto-Röhm-Gedächtnisstiftung (1999)
Liebig-Fellowship of the Fonds der Chemischen Industrie (1997–1999)
Robert C. Anderson Memorial Award (1996), Best dissertation 1995, U of Georgia, all fields
Karl-Giehl-Prize (1995), Best dissertation 1994, University of Erlangen-Nürnberg, all fields
Martin-Reynolds-Smith-Award (1993), American Chemical Society (ACS), SE section
Fellow of the Studienstiftung des Deutschen Volkes (1992–94)

Community Service

President Elect, WATOC (2025–date)
President of the German Chemical Society (GDCh) (2020 & 2021); Vice President 2022 & 2023
Head of the Chemistry Section and Senator of Leopoldina – German National Academy of Science (since 2023)
DFG Review Board Member (2016–2024)
Chairman, Scientific Advisory Board, Max-Planck-Institute for Coal Research, Mülheim, Germany (since 2016)
Vice President for Research (Justus-Liebig University, 2012–2015)
Minerva Foundation board member, Weizmann Institute, Rehovot, Israel (2015–2020)
Board member, World Association of Theoretical and Computational Chemists (WATOC, since 2014)
ADUC-Chairman, Association of German University Professors of Chemistry (2011–2013)
Associate Editor, *Beilstein Journal of Organic Chemistry* (2011–date)
Chairman, Dechema Board on Kinetics and Reaction Mechanisms (2009–2019)
Editorial Advisory Board Member, *Journal of Physical Organic Chemistry* (2009–date)
Liaison's Person, Studienstiftung des Deutschen Volkes (2007–date)
Editor-in-Chief, *WIREs Computational Molecular Sciences* (2007–date)
Dean, Faculty of Biology and Chemistry (2006–2009)
Associate Dean, Faculty of Biology and Chemistry (2003–2006)
Editorial Advisory Board Member, *European Journal of Organic Chemistry* (2006–2014)
Editor, *Journal of Computational Chemistry* (2000–date)
Associate Editor, *Encyclopedia of Computational Chemistry* (1996–2006)

Publications (since 1993; source: Google Scholar, August 17, 2025)

> 500 peer-reviewed publications, 1 book, 20 book chapters, 13 patents, and 44 contributions to popular science
> 32,000 citations, H-index = 82

Full list: <https://www.uni-giessen.de/de/fbz/fb08/Inst/organische-chemie/schreiner/publications>

Ten recent publications (selection):

1. Preparation of a Neutral Nitrogen Allotrope Hexanitrogen C_{2h}-N₆. Weiyu Qian, Artur Mardyukov, and Peter R. Schreiner* *Nature* **2025**, 642, 356-360; DOI: [10.1038/s41586-025-09032-9](https://doi.org/10.1038/s41586-025-09032-9). **Highlights:** a) Bethany Halford *Chem. Eng. News* **2025**, June 11, 2025; b) Tim Wogan *Chem. World* **2025**, June 13, 2025; c) Derek Lowe *Science* **2025**, June 23 and many more.
2. Assessing the Experimental Hydrogen Bonding Energy of the Cyclic Water Dimer Transition State with a Cyclooctatetraene-Based Molecular Balance. H. F. König, H. Hausmann, P. R. Schreiner *J. Am. Chem. Soc.* **2022**, 144, 16965. **Highlight:** Selected as [front cover](#) picture of this issue (37).
3. London Dispersion Rather than Steric Hindrance Determines the Enantioselectivity of the Corey-Bakshi-Shibata Reduction. C. Eschmann, L. Song, P. R. Schreiner *Angew. Chem. Int. Ed.* **2021**, 60, 4823
4. Competitive nitrogen versus carbon tunnelling. C. M. Nunes, A. K. Eckhardt, I. Reva, R. Fausto, P. R. Schreiner *J. Am. Chem. Soc.* **2019**, 141, 14340.
5. Gas-phase sugar formation using hydroxymethylene as the reactive formaldehyde isomer. A. K. Eckhardt, M. M. Linden, R. C. Wende, B. Bernhardt, P. R. Schreiner *Nat. Chem.* **2018**, 10, 1141.
6. London Dispersion Enables the Shortest Intermolecular Hydrocarbon H•••H Contact. S. Rösel, H. Quanz, C. Logemann, J. Becker, E. Mossou, L. Cañadillas Delgado, E. Caldeweyher, S. Grimme, P. R. Schreiner *J. Am. Chem. Soc.* **2017**, 139, 7428. **Highlights:** a) Hydrogens set a short-distance record. *Chem. Eng. News* **2017**, 95 (21), 8; b) Shortest H•••H Contact between Hydrocarbon Molecules. *ChemViews* May 25, 2017. c) Close Encounters of the Hydrogen Kind. *JACS Spotlight J. Am. Chem. Soc.* **2017**, 139, 7665.
7. Gas phase preparation of carbonic acid and its monomethyl ester. H. P. Reisenauer, J. P. Wagner, P. R. Schreiner *Angew. Chem. Int. Ed.* **2014**, 53, 11766. **Highlights:** a) *Front cover* of this issue; b) *Perspective:* Götz Bucher and Wolfram Sander *Science* **2014**, 346, 544–545; c) *Feature:* [Carbonic Acid Crystal Forms](#)

- [Identified](#). Jyllian N. Kemsley *C & EN News* **2014**, 92 (41), 28–29; d) [ChemistryViews: Carbonic Acid – And Yet It Exists!](#); e) Innovations Report: [Carbonic Acid—And Yet It Exists!](#); f) Physorg.com: [Preparation and characterization of gas-phase carbonic acid and its monomethyl ester](#).
8. Overcoming Extremely Long C–C Alkane Bond Lability through Attractive Dispersion Forces. P. R. Schreiner, L. V. Chernish, P. A. Gunchenko, E. Yu. Tikhonchuk, H. Hausmann, M. Serafin, S. Schlecht, J. E. P. Dahl, R. M. K. Carlson, A. A. Fokin *Nature* **2011**, 477, 308. **Highlights:** a) World's longest carbon-carbon bond created *Chemistry World* **2011**, [September 14](#), 2011; b) Carbon-Carbon bonds that are long and strong *C & EN News* **2011**, 89 (38), 28. c) Extrem lange Kohlenstoff-Kohlenstoff-Bindung mit Nanodiamanten *Spektrum der Wissenschaft* **2011**, November issue, p. 10. d) Mehr als nur ein Längenrekord. Sylvia Feil *Chem. unserer Zeit* **2012**, 46, 6–8.
9. Methylhydroxycarbene: Tunneling Control of a Chemical Reaction. P. R. Schreiner, H. P. Reisenauer, D. Ley, D. Gerbig, C.-H. Wu, W. D. Allen *Science* **2011**, 332, 1300. **Perspective:** Taking the high road and getting there before you. Barry K. Carpenter *Science* **2011**, 332, 1269–1270. **Highlights:** a) [Tunneling Control](#). Gavin Armstrong *Nature Chem.* **2011**, 3, 572. b) Quantum tunneling creates “wrong” molecule. Laura Howes *Chemistry World* **2011**, [June 10](#). c) [Tunneleffekt wandelt Methylhydroxycarben in Acetaldehyd um](#). Reto Müller *Organic Chemistry Portal*, **2011**, June 14. d) [Verblüffender chemischer Tunnelverkehr](#) *Scienceticker* **2011**, June 9. e) [Das Beamen von Materie: Neue Triebkraft chemischer Reaktionen entdeckt](#) *Chemie.de* **2011**, June 16. f) [Triebkraft chemischer Reaktionen entdeckt](#) *ChemieXtra* **2011**, issue 7/8, 18.
10. Capture of Hydroxymethylene and its fast Disappearance Through Tunnelling. P. R. Schreiner, H. P. Reisenauer, F. Pickard, A. C. Simmonett, W. D. Allen, E. Mátyus, A. G. Császár *Nature* **2008**, 453, 906. **Perspectives:** a) Cool it, baby. Markku Räsänen *Nature* **2008**, 453, 862–863. b) Watching a Molecular Mole at Work. G. Bucher *Angew. Chem. Int. Ed.* **2008**, 47, 6957–6958. c) Aus der Traum vom Weltraum? S. Feil *Chem. Unserer Zeit* **2008**, 42, 252. **Highlights:** a) Houdini molecule escapes energy trap. Simon Hadlington *Chemistry World* **2008**, June 11, p. 23. b) Hydroxymethylene Captured. Bethany Halford *Chem. Eng. News* **2008**, 86 (24), 15. c) Leben eines Organischen Moleküls verlängert. Uta Bilow *Frankfurter Allgemeine Zeitung*, August 6, 2008, 182, p. N1.