David Schilter – Curriculum Vitae

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Education

Doctor of Philosophy in Chemistry — *2005–2009*
The University of Sydney

- Thesis: *Synthesis and DNA-binding of metallocyclic architectures*
  (Advisor: Prof. Louis M. Rendina)

Bachelor of Science in Chemistry — *2001–2004*
The University of Sydney

- Honours Class I and University Medal for outstanding undergraduate research
- Thesis: *Building Blocks for Supramolecular Architecture: Bis(β-diketonato)copper(II) Metallocycles*
  (Advisor: E/Prof. Leonard F. Lindoy)

Professional

Assistant Professor of Chemistry — *2021–present*
Texas State University

- Research: I conduct synthetic molecular inorganic chemistry and analytical characterization of species of biological, catalytic and supramolecular import. My present projects include preparing synthetic nickel complexes to model the active site of alkyl-coenzyme M reductases, and the study of metal photosensitizer ions pairs and reduced derivatives by ion-mobility mass spectrometry.
- Funding: NIH S10 (*Continuous-Wave X-Band Electron Paramagnetic Resonance Spectrometer*, 1S10GM154300-01, $232,414, 2024), NSF MRI (*Acquisition of a Single Crystal X-ray Diffractometer to Advance Structural Analysis in Chemical, Biochemical, and Material Sciences at Texas State University*, 2408448, $485,000, Co-PI), NIH SuRE-First (*Active-site models unravel mechanism of enzymatic alkane activation*, R16 GM150472-01, $744,625, 2023-2027), TXST PREM CIMA SEED (*Synthetic Models of Multicopper Oxidases as Electrocatalysts for the Oxygen Reduction Reaction*, $10,000, 2022–2023), TXST Research Enhancement Program (*Reduced Viologens as Redox-Active Ligands in Catalysis* $8,000, 2022–2023).
- Mentoring: Riley Morris (B.S., 2025–), Miles Richardson (B.S., 2025–), Riley Sheikh (M.S., 2025–), Sonam Meharotra (postdoc, 2024–), Tarek Aziz (Ph.D., 2024–), Nishita Deb (M.S. student, 2023–), Liliana Munoz (B.S., 2024–), Caden Summers (Research Assistant, B.S., 2022–2024), MyTien Elizabeth Huynh (REU, 2024), Jalen Schilling (B.S., 2024), Adrian Alvarado (B.S., 2022–2023), Edith Collins (B.S., 2022–2023), Camryn Mikosh (B.S., 2023), Rebecca Robinson (REU, 2023), Liam Taylor (postdoc, 2022), Joshua Lerma (B.S., 2022), Jessica Carraway (B.S., 2022).
- Teaching and Course Development: Chem4341 (Advanced Inorganic Chemistry), Chem4333/5333 (Spectroscopy), Chem5365 (Chemical Analysis), Chem4312/5312 (Organometallic Chemistry).
- Service: *Essential Chem* Catalysis & Organometallic Section Editor, College of Science and Engineering Curriculum Committee, Chemistry & Biochemistry Equipment Committee, Faculty Hiring Committees, Scientific Instrument Technician Hiring Committee.

Associate Editor (2016–2018) and Senior Editor (2018–2021) — *2016–2021*
Nature Reviews Chemistry, Springer Nature Limited

- Invited and edited submissions, wrote Editorials/Research Highlights for *Nature Reviews Chemistry*. I consulted for *Nature Communications* and was a Consulting Editor at *Nature Catalysis*.
- Coordinated Research Highlights, mentoring Editors with writing to ensure quality and variety. I wrote most Editorials, shaped and monitored content diversity. Led Energy Community (2017) and Chemistry Community (2018), and organized Nature Conferences in Shenzhen (2018) and Chengdu (2019). Delivered Nature Masterclasses on scientific publishing.

Research Scientist *2014–2016*
Institute for Basic Science (IBS)

- As part of the IBS Center for Multidimensional Carbon Materials (CMCM) at Ulsan National Institute of Science and Technology (UNIST) working with Profs. Ruoff and Bielawski, I studied polymer-supported diamidocarbenes as potential recyclable catalysts. I also studied graphitic materials, including edge-functionalization and development of Birch reduction of graphene — a route to new 2D hydrocarbons $(CH_{1-x})_n$. Research on aryl- or alkylation of graphenes to support metal catalysts.
- I wrote and presented nationally-competitive funding proposals that won US$1.4M in instruments. Implemented an online system used by researchers for small chemical and equipment acquisitions. Streamlined procurement/inventorying in the CMCM. Oversaw instrumentation booking/use/billing with the Facilities Online Manager software. Managed the MS facility and regularly interacted with representatives from analytical companies for scientific discussions and negotiations regarding new acquisitions. Established safety policy for CMCM researcher and advised UNIST Safety Office.

Postdoctoral Research Associate and Lecturer *2009–2014*
University of Illinois at Urbana-Champaign (UIUC)

- As part of the Rauchfuss Group, I synthesized tricopper mimics of laccase and studied stoichiometric and electrocatalytic reactivity. I developed synthetic models for [NiFe]-hydrogenase, including the first one-electron mixed-valence species. Investigated hydrogen evolution catalysis and inhibition.
- Discovered rare example of rotation-induced two-electron mixed-valency in a catalytic intermediate.
- Devised isotopically-labeled complexes as spectroscopic models, culminating in detailed observations of metal–metal and metal–hydride bonding. Coordinated international interdisciplinary collaborations.
- Developed a modernized, multimedia Advanced Inorganic lecture course (Chem 312) in collaboration with students. Topics included molecular symmetry, spectroscopy and bio-inorganic chemistry. I lectured and consulted with strong student reviews. Provided engaging learning environment with in-lecture problems and diverse blackboard/powerpoint/video presentations.
- Designed Instrumental Analysis (Chem315) curriculum, initiated lab refurbishment and purchase of instrumentation. Established safety and laboratory demonstrator training. Delivered multimedia lectures, supervised labs and communicated grades. *Overwhelmingly positive student surveys were unprecedented.* Lectured Advanced Inorganic lab course (Chem 317) on high-level organometallics.

Scholarship

PhD student, Postgraduate Teaching Fellow (2006–7) and Teaching Assistant (2004–9) *2005–2009*
The University of Sydney

- I designed new families of cationic and zwitterionic heterocyclic ligands and examined their fragmentation and Dimroth rearrangement. Incorporated ligands into large Pd and Pt metallocycles.
- Probed DNA affinity and observed new modes of DNA–metallocycle Coulombic stabilization.
- Among a handful of graduate students selected to lead classes, I inspired undergraduates by guiding them through problems.
- Taught Fundamentals of Chemistry (chemistry for novices) and thus developed all levels of 1st years.
- I trained all levels of undergraduates in synthesis and instrumental characterization.
- My knowledge base allowed me to teach general, advanced bio-organic and inorganic chemistry. At the time, I was the only student trusted to teach bio-organic and inorganic tutorials.

Honours Student *2004*
The University of Sydney

- Developed multitopic β-diketonato ligands, integrating these into multicopper(II) macrocycles.
- Linked macrocycles with ditopic N-donors to afford porous 0-, 1-, 2- and 3D superstructures.
- Led discussions and selected to teach elite 1st year Special Studies Program.

Conference Lectures

Spring ACS National Meeting (2024), 5th SABIC (2017), 27th ICOMC (2016), IBS Research Conference (2015), 7th International Symposium on Nano & Supramolecular Chemistry (2015), Symposium on Molecular Materials Chemistry (2015), Fall ACS National Meeting (2010), RACI IC08 (2008), ICBICXIII (2007), XXX ISMC (2005), XXIX ISMC (2004).

University Lectures

University of Texas at Austin (2023), University of Liverpool, University of Rochester (2021), ETH Zürich, University of Utah, University of Electronic Science and Technology (2019), Deakin University, SUSTech (2018), Chimie ParisTech, PSL Research University (two lectures), IIT Kanpur (2017), University of Queensland (2014), University of Hawai'i at Manoa (2013), University of Adelaide (2011).

Academic Awards

Lindau Nobel Laureate meeting attendee (2009), Vice-Chancellor's Award for Support of the Student Experience (2008), Henry Bertie and Florence Mabel Gritton Medallist Award (2006), Agnes Campbell Postgraduate Prize in Organic Chemistry (2005, 2006, 2007), Australian Postgraduate Award and Supplementary Scholarship (2005), Graduated with Weighted Average Mark in High Distinction range and University Medal (2004), Agnes Campbell Honours Prize in Organic Chemistry (2004), Frank E Dixon Scholarship in Chemistry (2004), Dean's List of Excellence in Academic Performance (2001, 2003), Physics Entry Scholarship (2001), Dow Corning Prize for Excellence in Chemistry (1999).

References

Prof. Thomas B. Rauchfuss
(postdoctoral adviser)
The University of Illinois at Urbana-Champaign

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Prof. Louis M. Rendina
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The University of Sydney

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Note: † Denotes equal author contribution and ‡ denotes invited article.

Book chapter/monograph:

1. D. J. Bray, J. K. Clegg, L. F. Lindoy, D. Schilter, "Self-assembled metallo-supramolecular systems incorporating β-diketone motifs as structural elements", *Adv. Inorg. Chem.* **2007**, *59*, 1–37 (DOI: 10.1016/S0898-8838(06)59001-4).‡

Journal articles:

1. J. K. Clegg, L. F. Lindoy, J. C. McMurtrie, D. Schilter, "Dinuclear bis-β-diketonato ligand derivatives of iron(III) and copper(II) and use of the latter as components for the assembly of extended metallo-supramolecular structures", *Dalton Trans.* **2005**, 857–864 (DOI: 10.1039/B418870E).
2. D. J. Bray, J. K. Clegg, L.-L. Liao, L. F. Lindoy, J. C. McMurtrie, D. Schilter, G. Wei, T.-J. Won, "(Ethane-1,2-diamine)dinitratopalladium(II)", *Acta Cryst.* **2005**, *E61*, m1940–m1942 (DOI: 10.1107/S1600536805027224).
3. J. K. Clegg, L. F. Lindoy, J. C. McMurtrie, D. Schilter, "Extended three-dimensional supramolecular architectures derived from trinuclear (bis-β-diketonato)copper(II) metallocycles", *Dalton Trans.* **2006**, 3114–3121 (DOI: 10.1039/B517274H).
4. J. K. Clegg, K. Gloe, M. J. Hayter, O. Kataeva, L. F. Lindoy, B. Moubaraki, J. C. McMurtrie, K. S. Murray, D. Schilter, "New discrete and polymeric supramolecular architectures derived from dinuclear (bis-β-diketonato)copper(II) metallocycles", *Dalton Trans.* **2006**, 3977–3984 (DOI: 10.1039/B606523F).
5. L. F. Lindoy, J. C. McMurtrie, D. Schilter, "[4-(Dimethylamino)pyridine-κN]bis(pentane-2,4-dionato-κ^2O,O')copper(II)", *Acta Cryst.* **2006**, *E62*, m1142–m1143 (DOI: 10.1107/S1600536806014528).
6. D. Schilter, J. K. Clegg, M. M. Harding, L. M. Rendina, "Platinum(II) and palladium(II) metallomacrocycles derived from cationic 4,4′-bipyridinium, 3-aminopyrazinium and 2-aminopyrimidinium ligands", *Dalton Trans.* **2010**, 239–247 (DOI: 10.1039/b916579g).
7. D. Schilter, T. Urathamakul, J. L. Beck, M. M. Harding, L. Rendina, "ESI-MS and thermal melting studies of nanoscale platinum(II) metallomacrocycles with DNA", *Dalton Trans.* **2010**, 11263–11271 (DOI: 10.1039/c0dt00754d).
8. D. Schilter, M. J. Nilges, M. Chakrabarti, P. A. Lindahl, T. B. Rauchfuss, M. Stein, "Mixed-Valence Nickel–Iron Dithiolate Models of the [NiFe]-Hydrogenase Active Site", *Inorg. Chem.* **2012**, *51*, 2238–2248 (+ front cover, DOI: 10.1021/ic202329y).
9. D. Schilter, T. B. Rauchfuss, M. Stein, "Connecting [NiFe]-and [FeFe]-Hydrogenase: Mixed-Valence Nickel–Iron Dithiolates with Rotated Structures", *Inorg. Chem.* **2012**, *51*, 8931–8941 (DOI: 10.1021/ic300910r).

10. D. Schilter, T. B. Rauchfuss, "Nickel–iron dithiolates related to the deactivated [NiFe]-hydrogenases", *Dalton Trans.* **2012**, *41*, 13324–13329 (DOI: 10.1039/C2DT31895D).
11. D. Schilter, T. B. Rauchfuss, "And the Winner is…Azadithiolate: an Amine Proton Relay in the [FeFe] Hydrogenases", *Angew. Chem. Int. Ed.* **2013**, *52*, 13518–13520 (DOI: 10.1002/anie.201307132).‡
12. M. E. Carroll, J. Chen, D. E. Gray, J. C. Lansing, T. B. Rauchfuss, D. Schilter, P. Volkers, S. R. Wilson, "Ferrous Carbonyl Dithiolates as Precursors to FeFe, FeCo and FeMn Carbonyl Dithiolates", *Organometallics* **2014**, *33*, 858–867 (DOI: 10.1021/om400752a).
13. E. C. M. Tse, D. Schilter, D. L. Gray, T. B. Rauchfuss, A. A. Gewirth, "Multicopper Models for the Laccase Active Site: Effect of Nuclearity on Electrocatalytic Oxygen Reduction", *Inorg. Chem.* **2014**, *53*, 8505–8516 (DOI: 10.1021/ic501080c).
14. M. T. Huynh,† D. Schilter,† S. Hammes-Schiffer, T. B. Rauchfuss, "Protonation of Nickel–Iron Hydrogenase Models Proceeds After Isomerization at Nickel", *J. Am. Chem. Soc.* **2014**, *136*, 12385–12395 (DOI: 10.1021/ja505783z).
15. D. Schilter, V. Pelmenschikov, H. Wang, F. Meier, L. B. Gee, Y. Yoda, M. Kaupp, T. B. Rauchfuss, S. P. Cramer, "Synthesis and Vibrational Spectroscopy of ^{57}Fe-Labeled Models of [NiFe] Hydrogenase: First Direct Observation of a Nickel–Iron Interaction", *Chem. Commun.* **2014**, *50*, 13469–13472 (DOI: 10.1039/C4CC04572F).
16. D. Schilter, "Nickel-iron hydrogenases: high-resolution crystallography resolves the hydride, but not the debate", *ChemBioChem* **2015**, *16*, 1712–1714 (DOI: 10.1002/cbic.201500270).‡
17. R. Angamuthu, C.-S. Chen, T. R. Cochrane, D. L. Gray, D. Schilter, O. A. Ulloa, T. B. Rauchfuss, "N-Substituted Derivatives of the Azadithiolate Cofactor from the [FeFe]-Hydrogenases: Stability and Complexation", *Inorg. Chem.* **2015**, *54*, 5717–5724 (DOI: 10.1021/acs.inorgchem.5b00290).
18. H. Ogata,† T. Krämer,† H. Wang,† D. Schilter,† Vladimir Pelmenschikov,† M. van Gastel, F. Neese, T. B. Rauchfuss, L. B. Gee, A. D. Scott, Y. Yoda, Y. Tanaka, W. Lubitz, S. P. Cramer, "Hydride bridge in [NiFe]-hydrogenase observed by nuclear resonance vibrational spectroscopy", *Nat. Commun.* **2015**, *6*, 7890 (DOI: 10.1038/ncomms8890).
19. D. Schilter, A. L. Fuller, D. L. Gray, "Nickel–molybdenum and nickel–tungsten dithiolates: hybrid models for hydrogenases and hydrodesulfurization", *Eur. J. Inorg. Chem.* **2015**, 4638–4642 (DOI: 10.1002/ejic.201500740).
20. D. Schilter, J. M. Camara, M. T. Huynh, S. Hammes-Schiffer, T. B. Rauchfuss, "Hydrogenase Enzymes and Their Synthetic Models: The Role of Metal Hydrides", *Chem. Rev.* **2016**, *116*, 8693–8749 (+ front cover, DOI: 10.1021/acs.chemrev.6b00180).‡
21. J. P. Moerdyk, D. Schilter, C. W. Bielawski, "*N,N'*-Diamidocarbenes: Isolable Divalent Carbons with Bona Fide Carbene Reactivity", *Acc. Chem. Res.* **2016**, *49*, 1458–1468 (DOI: 10.1021/acs.accounts.6b00080).‡
22. X. Zhang, Y. Huang, S. Chen, N. Y. Kim, W. Kim, D. Schilter, M. Biswal, B. Li, Z. Lee, S. Ryu, C. W. Bielawski, W. S. Bacsa, R. S. Ruoff, "Birch-type hydrogenation of few-layer graphenes: products and mechanistic implications", *J. Am. Chem. Soc.* **2016**, *138*, 14980–14986 (DOI: 10.1021/jacs.6b08625).
23. D. Schilter, C. W. Bielawski, "Synthesis of a 2,2-Dichloroimidazolidine-4,5-dione and its Application in Chlorodehydroxylation", *Org. Synth.* **2016**, *93*, 413–421 (DOI: 10.15227/orgsyn.093.0413).‡
24. D. Schilter, D. L. Gray, A. L. Fuller, T. B. Rauchfuss, "Nickel-iron hydrogenase active site models with redox-active ligands", *Aust. J. Chem.* **2017**, *70*, 505–515 (DOI: 10.1071/CH16614).‡
25. M. Biswal,† X. Zhang,† D. Schilter, T. K. Lee, D. Y. Hwang, M. Saxena, S. H. Lee, S. Chen, S. K. Kwak, C. W. Bielawski, W. S. Bacsa, R. S. Ruoff, "Sodide and Organic Halides Effect Covalent Functionalization of Single and Bilayer Graphene", *J. Am. Chem. Soc.* **2017**, *139*, 4202–4210 (DOI: 10.1021/jacs.7b00932).
26. D. Schilter, T. B. Rauchfuss, "A Nickel–Iron Thiolate and its Hydride", *Inorg. Synth.* **2018**, *37*, 166–170 (DOI: 10.1002/9781119477822.ch8; ISBN: 978-1-119-47773-0).‡
27. Y. Aoki *et al.* "Physical methods for mechanistic understanding: general discussion" *Faraday Discuss.* **2019**, *220*, 144–178 (DOI: 10.1039/C9FD90070E).
28. D. Schilter, U Terranova, R. R. Robinson, "Ruthenium diimine ion pairs exhibit diverse intra- and intermolecular dynamics", *Cell. Rep. Phys. Sci.* **2024**, *5*, 102071 (https://doi.org/10.1016/j.xcrp.2024.102071).
29. S. B. Wagh, D. Berthold, I. Majeed, L. K. Lewis, D. Schilter, B. Mertens, A. Evidente, W. A. L. van Otterlo, V. Mathieu, A. Kornienko, "Sphaeropsidin A C15-C16 Cross-Metathesis Analogues with Potent Anticancer Activity", *ChemMedChem* **2024**, e202400288 (DOI: 10.1002/cmdc.202400288).
30. W. J. Brittain, D. Schilter, V. Fieglein, S. Vasylevskyi, "Arene–Perfluoroarene Noncovalent Interactions and Melting Point Correlations in 1-(Pentafluorophenyl)-2-Phenyldiazene and Related Compounds", *Cryst. Growth Des.* **2024** (DOI: 10.1021/acs.cgd.4c01177).

31. D. Schilter, U. Terranova, C. B. Summers, R. R. Robinson, "Evaluating iron diimines: ion-pairing, lability and the reduced state", *PhysChemChemPhys* **2025**, *27*, 7882–7892 (DOI: 10.1039/D5CP00199D).
32. C. W. King, P. Sathish, D. N. Turner, A. Zejnelovski, V. T. Do, R. Rubiano, D. Schilter, T. W. Hudnall, S. Rogelj, A. Kornienko, "Synthesis and antibacterial activity of 3-(arylazo)indoles and related azoheterocycles", *Bioorg. Med. Chem. Lett.* **2025**, 130256 (DOI: 10.1016/j.bmcl.2025.130256).

Research Highlight articles:

1. D. Schilter, "A new mesoporous conductor", *Nat. Rev. Mater.* **2016**, *1*, 16079 (DOI: 10.1038/natrevmats.2016.79).
2. D. Schilter, "Hierarchical nanostructures: Nanoshells show their metal", *Nat. Rev. Mater.* **2016**, *1*, 16096 (DOI: 10.1038/natrevmats.2016.96).
3. D. Schilter, "Translation: The proof is in the protein", *Nat. Rev. Chem.* **2017**, *1*, 0011 (DOI: 10.1038/s41570-016-0011).
4. D. Schilter, "Thiol oxidation: A slippery slope", *Nat. Rev. Chem.* **2017**, *1*, 0013 (DOI: 10.1038/s41570-016-0013).
5. D. Schilter, "Hydrogen storage: A reformed approach", *Nat. Rev. Chem.* **2017**, *1*, 0027 (DOI: 10.1038/s41570-017-0027).
6. D. Schilter, "Organometallic chemistry: High-valent iron gets homoleptic", *Nat. Rev. Chem.* **2017**, *1*, 0036 (DOI: 10.1038/s41570-017-0036).
7. D. Schilter, "OLEDs: rotation propels crossing", *Nat. Rev. Chem.* **2017**, *1*, 0040 (DOI: 10.1038/s41570-017-0040).
8. D. Schilter, "CO capture: IL's a trap!", *Nat. Rev. Chem.* **2017**, *1*, 0047 (DOI: 10.1038/s41570-017-0047).
9. D. Schilter, "Oxidation Reactions: A chameleon catalyst", *Nat. Rev. Chem.* **2017**, *1*, 0050 (DOI: 10.1038/s41570-017-0050).
10. D. Schilter, "Alkane dehydrogenation: Alkanes ylide-vised to go near titanium", *Nat. Rev. Chem.* **2017**, *1*, 0058 (DOI: 10.1038/s41570-017-0058).
11. D. Schilter, "Total synthesis: Polyketides as easy as ABC (and D)", *Nat. Rev. Chem.* **2017**, *1*, 0073 (DOI: 10.1038/s41570-017-0073).
12. D. Schilter, "Metalloenzymes: Fast delivery delivers mechanism", *Nat. Rev. Chem.* **2017**, *1*, 0081 (DOI: 10.1038/s41570-017-0081).
13. D. Schilter, "Fluorescence: Isolated rings do big things", *Nat. Rev. Chem.* **2017**, *1*, 0097 (DOI: 10.1038/s41570-017-0097).
14. D. Schilter, "Photoluminescence: Nanocrystals play hot potato", *Nat. Rev. Chem.* **2018**, *2*, 0107 (DOI: 10.1038/s41570-017-0107).
15. D. Schilter, "Electrocatalysis: Volcano spews out hot new catalyst", *Nat. Rev. Chem.* **2018**, *2*, 0116 (DOI: 10.1038/s41570-018-0116).
16. D. Schilter, "Environmental chemistry: Phenol oxidation causes complications", *Nat. Rev. Chem.* **2018**, *2*, 0129 (DOI: 10.1038/s41570-018-0129).
17. D. Schilter, "Homogeneous catalysis: Faster formation of fuels and fertilizers", *Nat. Rev. Chem.* **2018**, *2*, 0131 (DOI: 10.1038/s41570-018-0131).
18. D. Schilter, "Heterogeneous catalysis: Metastable multipods", *Nat. Rev. Chem.* **2018**, *2*, 0144 (DOI: 10.1038/s41570-018-0144).
19. D. Schilter, "Biocatalysis: Electrons hop between the animate and the inanimate", *Nat. Rev. Chem.* **2018**, *2*, 0145 (DOI: 10.1038/s41570-018-0145).
20. D. Schilter, "Homogeneous catalysis: Synthetic models close in on enzymes", *Nat. Rev. Chem.* **2018**, *2*, 0147 (DOI: 10.1038/s41570-018-0147).
21. D. Schilter, "Electrocatalysis: The search for selectivity", *Nat. Rev. Chem.* **2018**, *2*, 2 (DOI: 10.1038/s41570-018-0004-z).
22. D. Schilter, "Catalytic hydrogenation: An old reagent becomes a new precatalyst", *Nat. Rev. Chem.* **2018**, *2*, 49 (DOI: 10.1038/s41570-018-0011-0).
23. D. Schilter, "Surface chemistry: Ions surf across salt surface", *Nat. Rev. Chem.* **2018**, *2*, 97 (DOI: 10.1038/s41570-018-0014-x).
24. D. Schilter, "Superatoms: Open shells open doors", *Nat. Rev. Chem.* **2018**, *2*, 147 (DOI: 10.1038/s41570-018-0026-6).
25. D. Schilter, "Main-group chemistry: Frustration leads to radical behaviour", *Nat. Rev. Chem.* **2018**, *2*, 255 (DOI: 10.1038/s41570-018-0047-1).
26. D. Schilter, "Mechanochemistry: Feel the force", *Nat. Rev. Chem.* **2018**, *2*, 331 (DOI: 10.1038/s41570-018-0056-0).
27. D. Schilter, "Geochemistry: Extraterrestrial electrochemistry", *Nat. Rev. Chem.* **2018**, *2*, 395 (DOI: 10.1038/s41570-018-0061-3).
28. D. Schilter, "Main-group chemistry: I will bond IF hard pressed", *Nat. Rev. Chem.* **2019**, *3*, 65 (DOI: 10.1038/s41570-019-0072-8).
29. D. Schilter, "Metalloproteins: Finding the right match", *Nat. Rev. Chem.* **2019**, *3*, 130 (DOI: 10.1038/ s41570-019-0083-5).
30. D. Schilter, "Metalloenzymes: Thiolate gates superoxo states", *Nat. Rev. Chem.* **2019**, *3*, 203 (DOI: 10.1038/s41570-019-0083-5).
31. D. Schilter, "Fullerenes: It's hip to be heptagonal", *Nat. Rev. Chem.* **2019**, *3*, 287 (DOI: 10.1038/s41570-019-0093-3).
32. D. Schilter, "Protein structure: Unfolding in front of our eyes", *Nat. Rev. Chem.* **2019**, *3*, 343 (DOI: 10.1038/s41570-019-0105-3).

33. D. Schilter, "Transition metal catalysis: Nothing gets between Me and nitrogen", *Nat. Rev. Chem.* **2019**, *3*, 402 (DOI: 10.1038/s41570-019-0114-2).
34. D. Schilter, "Biofuels: Palms make way for oleaginous yeast", *Nat. Rev. Chem.* **2019**, *3*, 464 (DOI: 10.1038/s41570-019-0118-y).
35. D. Schilter, "Metal clusters: MAD from the scatter", *Nat. Rev. Chem.* **2019**, *3*, 511 (DOI: 10.1038/s41570-019-0127-x).
36. D. Schilter, "Metal clusters: Gold called to action", *Nat. Rev. Chem.* **2019**, *3*, 512 (DOI: 10.1038/s41570-019-0130-2).
37. D. Schilter, "Structure and bonding: A new kind of magic", *Nat. Rev. Chem.* **2019**, *3*, 565 (DOI: 0.1038/s41570-019-0134-y).
38. D. Schilter, "Electrocatalysis: Oxygen caught on film", *Nat. Rev. Chem.* **2019**, *3*, 621 (DOI: 0.1038/s41570-019-0141-z).
39. D. Schilter, "Main-group chemistry: Cationic congeners captured", *Nat. Rev. Chem.* **2019**, *3*, 670 (DOI: 0.1038/s41570-019-0145-8).
40. D. Schilter, "Fluxional molecules: Trading places", *Nat. Rev. Chem.* **2020**, *4*, 2 (DOI: 10.1038/s41570-019-0154-7).
41. D. Schilter, "Electrocatalysis: A fifth copper's in town", *Nat. Rev. Chem.* **2019**, *3*, 113 (DOI: 10.1038/s41570-020-0169-0).
42. D. Schilter, "Homogeneous catalysis: Nickel don't care about no air", *Nat. Rev. Chem.* **2020**, *4*, 171 (DOI: 10.1038/s41570-020-0177-0).
43. D. Schilter, "Chemical sensing: Wacker mole of ethylene", *Nat. Rev. Chem.* **2020**, *4*, 226 (DOI: 10.1038/s41570-020-0181-4).
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