

## **Prof. Nicholas F. Chilton FRSC FHEA**

Professor of Chemistry

Research School of Chemistry, The Australian National University

Professor of Computational and Theoretical Chemistry

Department of Chemistry, The University of Manchester

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### **Summary**

General expertise concerning Quantum Mechanics, electronic structure, computational chemistry, molecular magnetism, theoretical magnetism and EPR and optical spectroscopies. Author of *PHI* and *MAGELLAN* codes for magnetic analysis and determination of magnetic anisotropy. **H-index of 51** and **150 publications** with over **12,600 citations** in journals such as *Science*, *Nature*, *Nature Chem.*, *J. Am. Chem. Soc.*, *Nature Commun.*, *Angew. Chem.*, and *Chem. Sci.* International recognition with numerous invited lectures. **Total grant income £3.3M.**

### **Education**

2013 – 2015

#### **Ph.D.**

School of Chemistry, The University of Manchester, UK

Prof. E. J. L. McInnes and Prof. R. E. P. Winpenny

“Magnetic Anisotropy of Transition Metal Complexes”

2008 – 2011

#### **B.Sc. Adv. Hons. (1<sup>st</sup> class)**

School of Chemistry, Monash University, Australia

Prof. S. R. Batten and Prof. K. S. Murray

### **Employment**

2023 – current

#### **Professor of Chemistry**

Research School of Chemistry, The Australian National University, Australia

2022 – current

#### **Professor of Computational and Theoretical Chemistry**

Department of Chemistry, The University of Manchester, UK

2019 – 2022

#### **Senior Lecturer**

Department of Chemistry, The University of Manchester, UK

2019 – 2023

#### **Royal Society University Research Fellow**

Department of Chemistry, The University of Manchester, UK

2018 – 2019

#### **Presidential Fellow**

School of Chemistry, The University of Manchester, UK

2016 – 2018

#### **Ramsay Memorial Fellow**

School of Chemistry, The University of Manchester, UK

2016 – 2016

#### **Research Fellow**

School of Chemistry, The University of Manchester, UK

2015 – 2015

#### **Post-Doctoral Research Associate**

EPSRC EPR National Facility, The University of Manchester, UK

2012 – 2012

#### **Research Assistant**

School of Chemistry, Monash University, Australia

2008 – 2010      **Research Assistant**  
School of Chemistry, Monash University, Australia

### Awards

2023      Zasshikai Lectureship Prize, The University of Tokyo, Japan  
2022      Philip Leverhulme Prize, The Leverhulme Trust  
2021      Harrison-Meldola Memorial Prize, Royal Society of Chemistry, UK  
2020      Distinguished Achievement Medal: Teacher of the Year, The University of Manchester, UK  
2019 – 2023      University Research Fellowship, The Royal Society, UK  
2019      Olivier Kahn International Award, European Institute of Molecular Magnetism  
2018 – 2022      Presidential Fellowship, The University of Manchester, UK  
2018      Wilsmore Fellowship and Honorary Lecturer, University of Melbourne, Australia  
2016 – 2018      British Ramsay Memorial Fellowship, Ramsay Memorial Trust, UK  
2016      Reaxys Ph.D. Prize Finalist  
2015      Dalton Division Delegation to SILQCOM, Royal Society of Chemistry, UK  
2015      Dalton Young Researchers Award, Royal Society of Chemistry, UK  
2015      Young Scientist, 65<sup>th</sup> Lindau Nobel Laureates Meeting  
2013 – 2015      President's Doctoral Scholar Award, The University of Manchester, UK  
2011      Jubilee Honours Scholarship, Monash University, Australia  
2008      Summer Research Scholarship, Monash University, Australia

### Grants

2023 – 2026      Leverhulme Trust "Defining the Electronic Structures of (Hetero)Metallocene Anions", UK  
2023 – 2026      Leverhulme Trust "Next-generation molecule-based magnetic materials", UK  
2023 – 2026      Philip Leverhulme Prize, The Leverhulme Trust, UK  
2022 – 2023      Royal Society URF Enhancement Funds, UK  
2020 – 2025      ERC Starting Grant (ERC-2019-STG-851504) "Chemical Control of Vibronic Coupling for Magnetic Materials", EU  
2019 – 2024      EPSRC (EP/S033181/1) "Magnetic Properties Measurement System for Manchester and National EPR Facility", UK  
2019 – 2024      Royal Society URF (URF191320) "Chemical Control of Vibronic Coupling", UK  
2018 – 2021      EPSRC (EP/R02605X/1) "Targeting Molecular Magnetic Hysteresis at Liquid Nitrogen Temperatures", UK  
2016 – 2018      Ramsay Memorial Trust "Wavefunction engineering in lanthanide complexes", UK  
2016 – 2019      EPSRC (EP/P002560/1) "Designing Highly Axial Lanthanide Single Molecule Magnets", UK  
2016 – 2019      EPSRC (EP/N007034/1) "Non-classical paramagnetic susceptibility and anisotropy in lanthanide coordination complexes: a combined experimental and theoretical study", UK

### Lectures

Invited:      2024 From Fundamentals of Molecular Spin Qubit Design to Molecule-Enabled Quantum Information, Telluride, USA (upcoming)  
Tutorial:      2024 Winter School on Quantum Information Science for Chemistry, Los Angeles, USA (upcoming)  
Contributed:      2024 Australian Rare Earths Meeting 2024 (OZRE24), Perth, Australia (upcoming)  
Prize:      2023 The University of Tokyo, Japan  
Tutorial:      2023 The University of Tokyo, Japan

Dept.: 2023 University of Rennes, Rennes, France  
Invited: 2023 RSC Joliot-Curie Conference, Southampton, UK  
Invited: 2023 Copenhagen Molecular Quantum Information Discussions, Denmark  
Dept.: 2023 The Australian National University, Canberra, Australia  
RSC Prize: 2023 University of Oxford, Oxford, UK  
RSC Prize: 2022 University of St Andrews, St Andrews, UK  
RSC Prize: 2022 Durham University, Durham, UK  
Contributed: 2022 Actinides Revisited, Dresden, Germany  
Dept.: 2022 Florida State University, Tallahassee, USA  
Plenary: 2022 29<sup>th</sup> Rare Earth Research Conference, Philadelphia, USA  
Tutorial: 2022 Rare Earth Research Conference Summer School, Philadelphia, USA  
Dept.: 2022 University of California, Santa Barbara, USA  
Invited: 2022 Molecular Spin Qubit Design and Quantum Information, Telluride, USA  
Invited: 2022 ACS Spring Meeting, San Diego, USA  
Dept.: 2021 Ohio State University, Ohio, USA (Zoom)  
Invited: 2021 CECAM paramagnetic NMR workshop, Toulouse, France  
Dept.: 2021 Nottingham Trent University, Nottingham, UK  
Invited: 2021 Rhur EPR colloquium, Germany (Zoom)  
Invited: 2021 PTC Virtual Seminar, Chemical Institute of Canada (Zoom)  
Invited: 2021 OpenMolcas Developers Conference, Loughborough, UK (Zoom)  
Invited: 2021 1<sup>st</sup> Association de Magnétisme Moléculaire meeting, France (Zoom)  
Invited: 2021 Angular Momentum, USA (Zoom)  
Invited: 2020 Global Inorganic Discussion Weekdays, Chemical Institute of Canada (Zoom)  
Invited: 2019 International Conference on Functional Molecular Materials, Krakow, Poland  
OKIA prize: 2019 European Conference on Molecular Magnetism, Florence, Italy  
Invited: 2019 52<sup>nd</sup> International meeting of the RSC ESR Group, Glasgow, UK  
Dept.: 2019 University of California, Irvine, USA  
Dept.: 2019 University of California, Davis, USA  
Dept.: 2019 University of California, Berkeley, USA  
Invited: 2019 APS March Meeting, Boston, USA  
Tutorial: 2018 University of Melbourne, Melbourne, Australia  
Plenary: 2018 RACI Inorganic Chemistry Symposium, Melbourne, Australia  
Dept.: 2018 University of Melbourne, Melbourne, Australia  
Keynote: 2018 ANSTO Neutron Scattering Symposium, Sydney, Australia  
Plenary: 2018 RACI Inorganic Chemistry Symposium, Sydney, Australia  
Plenary: 2018 International Conference on Bimetallic Complexes, Karlsruhe, Germany  
Keynote: 2018 International Conference on f-Elements, Lausanne, Switzerland  
Keynote: 2018 International Conference on Coordination Chemistry, Sendai, Japan  
Dept.: 2018 University of Oxford, Oxford, UK  
Dept.: 2018 Durham University, Durham, UK  
Dept.: 2018 Xi'an Jiaotong University, Xi'an, China  
Tutorial: 2018 Xi'an Jiaotong University, Xi'an, China  
Dept.: 2018 Guangzhou University, Guangzhou, China  
Dept.: 2018 Sun Yat-Sen University, Guangzhou, China  
Tutorial: 2018 Sun Yat-Sen University, Guangzhou, China  
Dept.: 2018 Cardiff University, Cardiff, UK  
Dept.: 2017 University of Melbourne, Melbourne, Australia  
Dept.: 2017 Monash University, Melbourne, Australia  
Invited: 2017 Driving magnetic molecules, Bielefeld, Germany  
Contributed: 2017 European Conference on Molecular Magnetism, Bucharest, Romania  
Tutorial: 2017 University of Glasgow, Glasgow, UK  
Dept.: 2016 Aarhus University, Aarhus, Denmark

Tutorial: 2016 Aarhus University, Aarhus, Denmark  
Contributed: 2016 European Conference on Molecular Spintronics, Bologna, Italy  
Invited: 2016 RSC Early Career Symposium, Glasgow, UK  
RSC Prize: 2016 University of Nottingham, Nottingham, UK  
RSC Prize: 2016 University of Glasgow, Glasgow, UK  
RSC Prize: 2016 University of Brighton, Brighton, UK  
RSC Prize: 2016 University of Kent, Canterbury, UK  
Contributed: 2015 5<sup>th</sup> Latin American Symposium on Coordination and Organometallic Chemistry, Rio de Janeiro, Brazil  
Dept.: 2015 Universidade Federal Fluminense, Rio de Janeiro, Brazil  
Dept.: 2015 Universidade Federal do Rio de Janeiro, Rio de Janeiro, Brazil  
Tutorial: 2015 Universidade Federal do Rio de Janeiro, Rio de Janeiro, Brazil  
Invited: 2015 ThUL school on f-element chemistry, Karlsruhe, Germany  
Invited: 2015 International Conference on the f-Elements, Oxford, UK  
Invited: 2014 Functionalized molecule-based magnetic materials, Bielefeld, Germany  
Dept.: 2014 CNRS Bordeaux, Bordeaux, France  
Tutorial: 2014 CNRS Bordeaux, Bordeaux, France  
Invited: 2014 International Conference on Molecule-Based Magnets, St. Petersburg, Russia  
Contributed: 2014 f-Element Workshop, Manchester, UK  
Dept.: 2014 Univerisitat de Barcelona, Barcelona, Spain  
Tutorial: 2014 Univerisitat de Barcelona, Barcelona, Spain  
Contributed: 2013 European Conference on Molecular Magnetism, Karlsruhe, Germany  
Tutorial: 2013 University of Manchester, Manchester, UK  
Tutorial: 2012 Monash University, Melbourne, Australia

## Publications

150. S. C. Corner, G. K. Gransbury, I. J. Vitorica-Yrezabal, G. F. S. Whitehead, N. F. Chilton and D. P. Mills, [Halobenzene adducts of a dysprosocenium single-molecule magnet](#), *Inorg. Chem.*, 2024, accepted.

149. S. C. Corner, G. K. Gransbury, I. J. Vitorica-Yrezabal, G. F. S. Whitehead, N. F. Chilton and D. P. Mills, [Synthesis and Magnetic Properties of Bis-Halobenzene Decamethyldysprosocenium Cations](#), *Inorg. Chem.*, 2024, accepted.

148. L. Nodarakı, J. Liu, A.-M. Ariciu, F. Ortu, M. S. Oakley, L. Birnoschi, G. K. Gransbury, P. Cobb, J. Emerson-King, N. F. Chilton, D. P. Mills, E. J. L. McInnes and F. Tuna, [Metal-carbon bonding in early lanthanide substituted cyclopentadienyl complexes probed by pulsed EPR spectroscopy](#), *Chem. Sci.*, doi: 10.1039/D3SC06175B.

147. J. Emerson-King, G. K. Gransbury, G. F. S. Whitehead, I. J. Vitorica-Yrezabal, M. Rouzières, R. Clérac, N. F. Chilton and D. P. Mills, [Isolation of a bent dysprosium bis\(amide\) single-molecule magnet](#), *J. Am. Chem. Soc.*, 2024, doi: 10.1021/jacs.3c12427.

146. J. Murillo, J. A. Seed, A. J. Wooles, M. S. Oakley, C. A. P. Goodwin, M. Gregson, D. Dan, N. F. Chilton, A. J. Gaunt, S. A. Kozimor, S. T. Liddle and B. L. Scott, [Carbene Complexes of Plutonium: Structure, Bonding, and Divergent Reactivity to Lanthanide Analogs](#), *J. Am. Chem. Soc.*, accepted.

145. A. Mattioni, J. K. Staab, W. J. A. Blackmore, D. Reta, J. Iles-Smith, A. Nazir and N. F. Chilton, [Vibronic Effects on the Quantum Tunnelling of Magnetisation in Kramers Single-Molecule Magnets](#), *Nature Commun.*, 2024, 485.

144. P.-B. Jin, Q.-C. Luo, G. K. Gransbury, I. J. Vitorica-Yrezabal, T. Hajdu, I. Strashnov, E. J. L. McInnes, R. E. P. Winpenny, N. F. Chilton, D. P. Mills and Y.-Z. Zheng, Thermally stable Terbium(II) and Dysprosium(II) Bis-Amidinate Complexes, *J. Am. Chem. Soc.*, 2023, 145, 27993.
143. R. Nabi, J. K. Staab, A. Mattioni, J. G. C. Kragoskow, D. Reta, J. M. Skelton and N. F. Chilton, Accurate and efficient spin-phonon coupling and spin dynamics calculations for molecular solids, *J. Am. Chem. Soc.*, 2023, 145, 24558.
142. G. K. Gransbury, S. C. Corner, J. G. C. Kragoskow, P. Evans, H. M. Yeung, W. J. A. Blackmore, G. F. S. Whitehead, I. J. Vitorica-Yrezabal, M. S. Oakley, N. F. Chilton and D. P. Mills, AtomAccess: A predictive tool for molecular design and its application to the targeted synthesis of dysprosium single-molecule magnets, *J. Am. Chem. Soc.*, 2023, 145, 22814.
141. J. G. C. Kragoskow, A. Mattioni, J. K. Staab, D. Reta, J. M. Skelton and N. F. Chilton, Spin-phonon coupling and magnetic relaxation in single-molecule magnets, *Chem. Soc. Rev.*, 2023, 52, 4567.
140. W. J. A. Blackmore, G. K. Gransbury, P. Evans, J. G. C. Kragoskow, D. P. Mills and N. F. Chilton, Characterisation of magnetic relaxation on extremely long timescales, *Phys. Chem. Chem. Phys.*, 2023, 25, 16735.
139. R. Alotaibi, A. Booth, E. Little, A. Brookfield, A. Achari, S. J. Lockyer, G. A. Timco, G. F. S. Whitehead, I. Vitorica-yrezabal, N. F. Chilton, R. R. Nair, D. Collison and R. E. P. Winpenny, Synthesis and Characterization of Heterometallic Rings Templated through Alkylammonium or Imidazolium Cations, *Dalton Trans.*, 2023, 52, 7473.
138. B. Alnami, J. G. C. Kragoskow, J. K. Staab, J. M. Skelton and N. F. Chilton, Structural evolution of paramagnetic lanthanide compounds in solution compared to time- and ensemble-average structures, *J. Am. Chem. Soc.*, 2023, 145, 13632.
137. G. Li Manni, I. Fdez. Galván ..., L. Birnoschi ..., N. F. Chilton ..., J. K. Staab *et al.*, The OpenMolcas Web: A Community-Driven Approach to Advancing Computational Chemistry, *J. Chem. Theor. Comput.*, 2023, 19, 6933.
136. K. R. McClain, H. Kwon, K. Chakarawet, R. Nabi, J. G. C. Kragoskow, N. F. Chilton, R. D. Britt, J. R. Long and B. G. Harvey, A Trinuclear Gadolinium Cluster with a Three-Center One-Electron Bond and an  $S = 11$  Ground State, *J. Am. Chem. Soc.*, 2023, 145, 8996.
135. P. Zhang, R. Nabi, J. K. Staab, N. F. Chilton and S. Demir, Taming Super-Reduced  $\text{Bi}_2^{3-}$  Radicals with Rare Earth Cations, *J. Am. Chem. Soc.*, 2023, 145, 9152.
134. M. J. Giansiracusa, M. Vonci, Y. L. Whyatt, C. Williams, K. Mason, D. Parker, E. J. L. McInnes and N. F. Chilton, Determination of molecular hydration in solution via changes in magnetic anisotropy, *Chem. Commun.*, 2023, 59, 4531.
133. T. Han, Y.-S. Ding, M. J. Giansiracusa, N. F. Chilton, R. E. P. Winpenny and Y.-Z. Zheng, Determinative Effect of Axial Linearity on Single-Molecule Magnet Performance in Dinuclear Dysprosium Complexes, *Chem. Eur. J.*, 2023, 29, e202300256.
132. W. J. A. Blackmore, A. Mattioni, S. C. Corner, P. Evans, G. K. Gransbury, D. P. Mills and N. F. Chilton, Measurement of the Quantum Tunnelling Gap in a Dysprosocenium Single-Molecule Magnet, *J. Phys. Chem. Lett.*, 2023, 14, 2193.
131. V. S. Parmar, A. M. Thiel, R. Nabi, G. K. Gransbury, M. S. Norre, P. Evans, S. C. Corner, J. M. Skelton, N. F. Chilton, D. P. Mills and J. Overgaard, Influence of pressure on the structure, phonon spectrum and magnetic properties of a dysprosocenium Single Molecule Magnet, *Chem. Commun.*, 2023, 59, 2656.

130. A. Vincent, Y. L. Whyatt, N. F. Chilton and J. R. Long, Strong Axiality in a Dysprosium(III) Bis(borolide) Complex Leads to Magnetic Blocking at 65 K, *J. Am. Chem. Soc.*, 2023, 145, 1572.
129. G. K. Gransbury, B. L. L. Réant, A. J. Wooles, J. Emerson-King, N. F. Chilton, S. T. Liddle and D. P. Mills, Electronic Structure Comparisons of Isostructural Early d- and f-Block Metal(III) Bis(cyclopentadienyl) Silanide Complexes, *Chem. Sci.*, 2023, 14, 621.
128. J. K. Staab and N. F. Chilton, An analytic linear vibronic coupling method for first-principles spin-dynamics calculations in single-molecule magnets, *J. Chem. Theor. Comput.*, 2022, 11, 6588.
127. M. Godsall and N. F. Chilton, Investigation of the Electronic Structure and Optical Spectra of Uranium-(IV), -(V) and -(VI) Complexes Using Multi-configurational Methods, *J. Phys. Chem. A*, 2022, 36, 6059.
126. L. Birnoschi and N. F. Chilton, HYPERION: A New Computational Tool for Relativistic Ab Initio Hyperfine Coupling, *J. Chem. Theor. Comput.*, 2022, 18, 4719.
125. N. F. Chilton, Molecular Magnetism, *Annu. Rev. Mater. Res.*, 2022, 52, 79.
124. T. Pei, J. O. Thomas, S. Sopp, M.-Y. Tsang, N. Dotti, J. Baugh, N. F. Chilton, S. Cardona-Serra, A. Gaita-Ariño, H. L. Anderson and L. Bogani, Exchange-induced spin polarization in a single magnetic molecule junction, *Nature Commun.*, 2022, 4506.
123. J. G. C. Kragsskow, J. Marbey, C. D. Buch, J. Nehr Korn, M. Ozerov, S. Piligkos, S. Hill and N. F. Chilton, Analysis of vibronic coupling in a 4f molecular magnet with FIRMS, *Nature Commun.*, 2022, 13, 825.
122. C. A. Gould, K. R. McClain, D. Reta, J. G. C. Kragsskow, D. A. Marchiori, E. Lachman, E.-S. Choi, J. G. Analytis, R. D. Britt, N. F. Chilton, B. G. Harvey and J. R. Long, Ultrahard magnetism from mixed-valence dilanthanide complexes with metal-metal bonding, *Science*, 2022, 375, 198.
121. Y.-S. Ding, W. J. A. Blackmore, Y.-Q. Zhai, M. J. Giansiracusa, D. Reta, I. Vitorica-Yrezabal, R. E. P. Winpenny, N. F. Chilton and Y.-Z. Zheng, Studies of the Temperature-Dependence of the Structure and Magnetism of a Hexagonal Bipyramidal Dysprosium(III) Single-Molecule Magnet, *Inorg. Chem.*, 2022, 61, 227.
120. P. Zhang, F. Benner, N. F. Chilton and S. Demir, Organometallic Lanthanide Bismuth Cluster Single-Molecule Magnets, *Chem*, 2022, 8, 717.
119. A. J. Walsinghe and N. F. Chilton, Assessment of minimal active space CASSCF-SO methods for calculation of atomic Slater-Condon and spin-orbit coupling parameters in d- and f-block ions, *Dalton Trans.*, 2021, 50, 14130.
118. R. T. R. Alotaibi, E. Little, J. M. Fowler, A. Brookfield, R. W. Adams, A. Achari, G. A. Timco, G. F. S. Whitehead, N. F. Chilton, R. R. Nair, D. Collison and R. E. P. Winpenny, Single Isomer Heterometallic  $\{Cr^III_6M^II_2\}$  Rings Templated by Tetramethylammonium, *Inorg. Chem.*, 2021, 60, 15675.
117. E. Garlatti, A. Chiesa, P. Bonfà, E. Macaluso, I. Onuorah, V. Parmar, Y.-S. Ding, Y.-Z. Zheng, M. Giansiracusa, D. Reta, E. Pavarini, T. Guidi, D. P. Mills, N. F. Chilton, R. E. P. Winpenny, P. Santini and S. Carretta, A Cost-Effective Semi Ab-initio Approach to Model Relaxation in Rare-Earth Single-Molecule Magnets, *J. Phys. Chem. Lett.*, 2021, 12, 8826.
116. K. Kumar, O. Stefanczyk, N. F. Chilton, K. Nakabayashi, K. Imoto, R. E. P. Winpenny and S.-I. Ohkoshi, Magnetic Properties and Second Harmonic Generation of Noncentrosymmetric Cyanido-Bridged Ln(III)-W(V) Assemblies, *Inorg. Chem.*, 2021, 60, 12009.

115. D. Reta, J. G. C. Kragoskow and N. F. Chilton, *Ab initio prediction of high-temperature magnetic relaxation rates in single-molecule magnets*, *J. Am. Chem. Soc.*, 2021, 143, 5943.
114. J. A. Seed, L. Birnoschi, E. Lu, F. Tuna, A. J. Wooles, N. F. Chilton and S. T. Liddle, *Anomalous Magnetism of Uranium(IV)-Oxo and -Imido Complexes Reveals Unusual Doubly-Degenerate Electronic Ground States*, *Chem*, 2021, 7, 1666.
113. L. R. Thomas-Hargreaves, M. J. Giansiracusa, M. Gregson, E. Zanda, F. O'Donnell, A. J. Wooles, N. F. Chilton and S. T. Liddle, *Correlating Axial and Equatorial Ligand Field Effects to the Single-Molecule Magnet Performances of a Family of Dysprosium Bis-Methanediide Complexes*, *Chem. Sci.*, 2021, 12, 3911.
112. H. M. O'Connor, S. Sanz, A. J. Scott, M. B. Pitak, W. T. Klooster, S. J. Coles, N. F. Chilton, E. J. L. McInnes, P. J. Lusby, H. Weihe, S. Piligkos and E. K. Brechin, *[Cr<sup>III</sup><sub>8</sub>Ni<sup>II</sup><sub>6</sub>]<sup>n+</sup> Heterometallic Coordination Cubes*, *Molecules*, 2021, 26, 757.
111. A. J. McMillan, M. Sienkowska, P. Di Lorenzo, G. K. Gransbury, N. F. Chilton, M. Salamone, A. Ruffoni, M. Bietti and D. Leonori, *Practical and Selective sp<sup>3</sup> C–H Bond Chlorination via Aminium Radicals*, *Angew. Chem. Int. Ed.*, 2021, 60, 7132.
110. C. A. P. Goodwin, M. J. Giansiracusa, S. M. Greer, H. M. Nicholas, P. Evans, M. Vonci, S. Hill, N. F. Chilton and D. P. Mills, *Isolation and electronic structures of derivatized manganocene, ferrocene and cobaltocene anions*, *Nature Chem.*, 2021, 13, 243
109. L. R. Thomas-Hargreaves, D. Hunger, M. Kern, A. J. Wooles, J. van Slageren, N. F. Chilton and S. T. Liddle, *Insights into D<sub>4h</sub>@Metal-Symmetry Single-Molecule Magnetism: The Case of a Dysprosium-bis(Boryloxide) Complex*, *Chem. Commun.*, 2021, 57, 733.
108. J. Wang, Q.-W. Li, S.-G. Wu, Y.-C. Chen, R.-C. Wan, G.-Z. Huang, Y. Liu, J.-L. Liu, D. Reta, M. J. Giansiracusa, Z.-X. Wang, N. F. Chilton and M.-L. Tong, *Opening magnetic hysteresis by axial ferromagnetic coupling: from mono-decker to double-decker metallacrown*, *Angew. Chem. Int. Ed.*, 2021, 60, 5299.
107. D. Reta and N. F. Chilton, *Extraction of "hidden" relaxation times from AC susceptibility data*, *Chem. Sq.*, 2020, 4, 3.
106. M. J. Giansiracusa, S. Al-Badran, A. K. Kostopolous, G. F. S. Whitehead, E. J. L. McInnes, D. Collison, R. E. P. Winpenny and N. F. Chilton, *Magnetic Exchange Interactions in Symmetric Lanthanide Dimetallics*, *Inorg. Chem. Front.*, 2020, 7, 3909.
105. G. Lu, Y. Liu, W. Deng, G.-Z. Huang, Y.-C. Chen, J.-L. Liu, Z.-P. Ni, M. J. Giansiracusa, N. F. Chilton and M.-L. Tong, *A Perfect Triangular Dysprosium Single-Molecule Magnet with Virtually Antiparallel Ising-like Anisotropy*, *Inorg. Chem. Front.*, 2020, 7, 2941.
104. D. Parker, E. A. Suturina, I. Kuprov and N. F. Chilton, *How the Ligand Field in Lanthanide Coordination Complexes Determines Magnetic Susceptibility Anisotropy, Paramagnetic NMR Shift and Relaxation Behaviour*, *Acc. Chem. Res.*, 2020, 53, 1520.
103. K.-X. Yu, J. G. C. Kragoskow, Y.-S. Ding, Y.-Q. Zhai, D. Reta, N. F. Chilton and Y.-Z. Zheng, *Enhancing magnetic hysteresis in single-molecule magnets by ligand functionalisation*, *Chem*, 2020, 6, 1777.
102. P. Evans, D. Reta, C. A. P. Goodwin, F. Ortu, N. F. Chilton and D. P. Mills, *A Double-Dysprosocenium Single-Molecule Magnet Bound Together with Neutral Ligands*, *Chem. Commun.*, 2020, 56, 5677.

101. V. S. Parmar, F. Ortu, X. Ma, N. F. Chilton, R. Clérac, D. P. Mills and R. E. P. Winpenny, Probing relaxation dynamics in five-coordinate dysprosium single-molecule magnets, *Chem. Eur. J.*, 2020, 36, 7774.
100. A. Chiesa, F. Cugini, R. Hussain, E. Macaluso, G. Allodi, E. Garlatti, M. Giansiracusa, C. A. P. Goodwin, F. Ortu, D. Reta, J. M. Skelton, T. Guidi, P. Santini, M. Solzi, R. De Renzi, D. P. Mills, N. F. Chilton and S. Carretta, Understanding magnetic relaxation in high blocking-temperature single-ion magnets, *Phys. Rev. B*, 2020, 101, 174402.
99. T. Han, M. J. Giansiracusa, Z.-H. Li, Y.-Song Ding, N. F. Chilton, R. E. P. Winpenny and Y.-Z. Zheng, Exchange-Biasing in a Dinuclear Dysprosium(III) Single-Molecule Magnet with a Large Energy Barrier for Magnetization Reversal, *Chem. Eur. J.*, 2020, 26, 6773.
98. Y.-S. Ding, T. Han, Y.-Q. Zhai, D. Reta, N. F. Chilton, R. E. P. Winpenny and Y.-Z. Zheng, A Study of Magnetic Relaxation in Dysprosium(III) Single-Molecule Magnets, *Chem. Eur. J.*, 2020, 26, 5893.
97. P. Evans, D. Reta, G. F. S. Whitehead, N. F. Chilton and D. P. Mills, A Bis-Monophospholyl Dysprosium Cation Showing Magnetic Hysteresis at 48 Kelvin, *J. Am. Chem. Soc.*, 2019, 141, 19935.
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