CV - Professor David A. Leigh FRS FRSE FRSC MAE

Born 31 May 1963, Birmingham, England **Nationality** British **Email** David.Leigh@manchester.ac.uk
Telephone +44-161 275 1926 **Group website** www.catenane.net **ResearcherID** K-5965-2015
OrcidID orcid.org/0000-0002-1202-4507 **GoogleScholar (GooSch)** https://goo.gl/RFvrGi
Address Department of Chemistry, University of Manchester, Oxford Road, Manchester M13 9PL, UK

Academic Career

2016-	Royal Society Research Professor
2014-	Sir Samuel Hall Chair of Chemistry, University of Manchester, UK.
2012-2013	Professor of Organic Chemistry, University of Manchester, UK.
2001-2012	Forbes Chair of Organic Chemistry, University of Edinburgh, UK
1998-2001	Chair of Synthetic Chemistry, University of Warwick, UK
1989-1998	Lectureship and, from Jan 1996, Readership in Organic Chemistry in the Department of Chemistry, University of Manchester Institute of Science and Technology, Manchester, UK
1987-1989	Postdoctoral Fellow at the National Research Council of Canada, Biological Sciences Division, Ottawa, Canada.
1984-1987	PhD, University of Sheffield, UK.
1981-1984	BSc Special Honours in Chemistry, University of Sheffield, UK

Awards & Prizes

EPSRC Advanced Research Fellowship (1998-2003) • Royal Society of Chemistry (RSC) Award for Supramolecular Chemistry (2003) • RSC Award for Interdisciplinary Research (2004) • Institute of Chemistry of Ireland Award for Chemistry (2005) • Swiss Chemical Society Troisième Conferencier in Chemistry (2005) • EPSRC Senior Research Fellowship (2005-10) • Royal Society-Wolfson Research Merit Award (2005-10) • Elected Fellow of the Royal Society of Edinburgh (2005) • RSC Award for Nanotechnology (2005) • International Izatt-Christensen Award for Macrocyclic Chemistry (2007) • Royal Society of Chemistry-Real Sociedad Española de Química (RSC-RSEQ) Prize for Chemistry (2007) • HRH Prince Philip Award for Research (2007) • US Feynman Prize for Nanotechnology (2007) • Descartes Prize for Research (Europe's major prize for collaborative international research) (2007) • ERC Advanced Grant (inaugural call; 2008) • RSC Merck Award for Organic Chemistry (2009) • Elected Fellow of the Royal Society (London) (2009) • RSC Tilden Prize (2010) • Bakerian Medal, Royal Society (2013) • ERC Advanced Grant (2013) • RSC Pedler Award (2014) • Elected to the Academia Europaea (2015) • Royal Society Research Professor (2016-26) • RSC Perkin Prize (2017) • ERC Advanced Grant (2018) • Distinguished Professor, East China Normal University, Shanghai, China (2018-) • Clarivate Analytics (formerly Thomson-Reuters) Web of Science Highly-Cited Researcher (2018) • International Society for Nanoscale Science, Computation and Engineering (ISNSCE) Nanoscience Prize (2019) • Honorary Membership of the Israel Chemical Society (2019) • Academic Influence Top Influential Chemists 2010-2020 (2020) • Royal Medal, Royal Society of Edinburgh (2021) • Honorary Senior Foresight Fellow (2021) •

H-index: 96 (GooSch, 31 December 2021); **Citations**: 31,479 (GooSch, 31 December 2021).

For the last two decades our research group has pioneered methods to control nonequilibrium molecular-level dynamics and molecular nanotopology [for examples see: *Nature* **406**, 608 (2000); *Science* **291**, 2124 (2001); *Nature* **424**, 174 (2003); *Science* **299**, 531 (2003); *Science* **306**, 1532 (2004); *Nat. Mater.* **4**, 704 (2005); *Nature* **445**, 523 (2007); *Nature* **458**, 314 (2009); *Nat. Chem.* **2**, 96 (2010); *Science* **328**, 1255 (2010); *Science* **339**, 189 (2013); *Nat. Chem.* **8**, 138 (2016); *Science* **352**, 1555 (2016); *Nature* **534**, 235 (2016); *Science* **355**, 159 (2017); *Nature* **549**, 374 (2017); *Science* **358**, 340 (2017); *Nat. Nanotech.* **13**, 381 (2018); *Nature* **584**, 562 (2020); *Nature* **588**, 429 (2020); *Nat. Chem.* **13**, 117 (2021); *Nature* **594**, 529 (2021); *Science* **375**, 1035 (2022); *Nature* **604**, 80 (2022)].

Publications Impact

Of the >200 papers produced by our group since 2000, more than 50% were published in *Nature* and *Science* (19), *PNAS* and *Nat. Chem./Mater./Nanotech.* (22) and *Angew. Chem.* and *JACS* (122). More than one-in-four (93) of our ~300 publications have been cited more than 100 times each; six particularly highly-cited papers more than 500 times each. Over half of our publications have been highlighted in the scientific press or wider media. More than 33 of our papers have been the subject of independent published perspectives ('*News & Views*' articles) by other leading scientists, including: '*Weaving on the molecular scale*' Y. Jiao, J. F. Stoddart, *Matter* **4**, 2582–2584 (2021) • '*Untangling knotty problems*' (N&Vs), D. Preston, P. E. Kruger, *Nat. Chem.* **13**, 114–116 (2021) • '*On the right 'track' to artificial assemblers*', R. Costil, A. Guinart, B. L. Feringa, *Chem* **6**, 2868–2870 (2020) • '*What tangled webs we weave*' (N&Vs), E. E. Fenlon, *Nat. Chem.* **10**, 1078–1079 (2018) • '*A molecular assembler*' (N&Vs), T. R. Kelly, M. L. Snapper, *Nature* **549**, 336–337 (2017) • '*Tight embrace in a molecular knot with eight crossings*', F. B. L. Cougnon, *Angew. Chem. Int. Ed.* **56**, 4918–4919 (2017) • '*No turning back for motorized molecules*' (N&Vs), J. Clayden, *Nature* **534**, 187–188 (2016) • '*Artificial molecular motors: Running on information*' (N&Vs), R. D. Astumian, *Nat. Nanotech.* **11**, 582–583 (2016) • '*A chiral catalyst with a ring to it*' (N&Vs), S. M. Goldup, *Nat. Chem.* **8**, 404–406 (2016) • '*Molecules bearing robotic arms*' (N&Vs), I. Aprahamian, *Nat. Chem.* **8**, 97–99 (2016) • '*Molecular topology: Star-crossed self-assembly*' (N&Vs), G. H. Clever, *Nat. Chem.* **6**, 950–952 (2014) • '*Interlocked molecules:*

A molecular production line' (N&Vs), P. R. McGonigal, J. F. Stoddart, *Nat. Chem.* **5**, 260–262 (2013) • '*One-pot pentaknot*' (N&Vs), M. J. Hardie, *Nat. Chem.* **4**, 7–8 (2012) • '*Combining coordination chemistry and catalysis to tie a knot by an active-metal template strategy*' (N&Vs), C. Romuald, F. Coutrot, *Angew. Chem. Int. Ed.* **51**, 2544–2545 (2012) • '*Attractive arrays*' (N&Vs), A. J. Wilson, *Nat. Chem.* **3**, 193–194 (2011) • '*Synthetic molecular bipeds*' (N&Vs), E. M. Pérez, *Angew. Chem. Int. Ed.* **50**, 3359–3361 (2011) •

Lectures and Presentations

>300 Plenary/invited lectures at national/international conferences and university colloquia. Named lectures include: **2008** *Daniell Lecture, University College London* • *Musher Lecture, University of Jerusalem, Israel* • **2009** *E Gordon Young Memorial Lectureship, McGill and Sherbrooke Universities, Canada* • *Novartis Lecture, ETH Zurich, Switzerland* • **2010** *Francqui Chair Lectures, Université catholique de Louvain, Belgium* • **2011** *Alex Hopkins Lecture, Cambridge Science Festival* • **2012** *H. Dudley Wright Colloquia, University of Geneva, Switzerland* • *Sir Robert Robinson Distinguished Lectureship, University of Liverpool* • *1st EPS Christmas Lecture, Heriot-Watt University* • **2013** *Bakerian Lecture, Royal Society, London* • *Robert W. Taft Memorial Lecture, UC-Irvine, USA* • **2014** *Sir Gareth Roberts Memorial Lecture, University of Durham* • *Institute of Creativity Distinguished Visitor Lectures, Hong Kong* • *TGH Jones Memorial Lecture, University of Queensland, Australia* • **2015** *Dewar Lecture, Queen Mary University of London* • **2016** *Haworth Lecture, University of Birmingham* • *Sir Robert Robinson Lectures, University of Oxford* • *Hugh and Ethel Kelly Lecture, Virginia Tech, USA* • *Anslyn-Iverson-Sessler Lecture, University of Texas at Austin, USA* • *Dean's Podium Lecture, Ben Gurion University, Israel* • **2017** *GDCh 150th Anniversary Lecture, Berlin* • *Dalton Lecture, RSC NW Section* • *Tarrant Distinguished Professorship Lectures, University of Florida, USA* • **2018** *Peiyang lecture, Tianjin University, China* • *Xingda Lecture, Peking University, China* • *Molecular Science Forum Lecture, Institute of Chemistry, Chinese Academy of Sciences, Beijing, China* • *Xuetang Lecture, Tsinghua University, China* • **2019** *Daedalus Lecture, University of Newcastle* • *Pollack Lectures, Technion University, Israel* • *World Distinguished Scholar Forum Lecture, Sun Yat-sen University, China* • *The SUSTech Science Lecture, Southern Uni. Science & Technology, China* • *Lu Jiaxi Lectureship, Xiamen University, China* • *Distinguished Lu Jiaxi Lecturer, Haixi Institute, Chinese Academy of Sciences, China* • *Coutts Lecturer, Harrow School* • *Wenkui Forum Lecture, Lanzhou University, China* • *Zhou Huijiu Forum Lecture, Xi'an Jiaotong University, China* • *Qujiang Forum Lecture, Shangxi Normal University, China* • *Zhongjian Yang Lecture, Xi'an Northwest University, China* • **2020** *Timothy J. O'Leary Lectures, Gonzaga University, USA* • *Joshua Jortner Lectures in Chemistry, Raymond and Beverly Sackler Foundation, Tel Aviv University, Israel* • **2021** *Stranks Memorial Lecture, RACI Chem. Ed. Group, Adelaide, Australia* • *Newlands Lecture, Imperial College London* • **2022** *Lansdowne Lecturer, University of Victoria, Canada* •

Research Support >£30M 1990-to date (research councils, EU, charities and industry) including: • 2002-2005 EU Research Training Network '*Exploiting mechanical movement in molecular architectures (EMMMA)*' (coordinator D. A. Leigh; 2007 EU Descartes Prize for Transnational Collaborative Research) • 2008-2013 ERC Advanced Grant (inaugural call) '*Synthetic molecules that walk down tracks*' € 2.25M • 2014-2019 ERC Advanced Grant '*Machinery for molecular factories*' € 2.35M • 2017-2022 EPSRC '*Molecular Robotics*' £5.32M • 2019-2024 ERC Advanced Grant '*Molecular machines with integrated parts*' € 2.5M

Editorial Service

2010-2018 Associate Editor *Chemical Science* • 2014-2021 International editorial advisory board *Angewandte Chemie* • 2015-2017 Editorial advisory board *ACS Central Science* • 2022- Editorial advisory board *Chemistry – A European Journal* •

Public Engagement

The concept of 'molecular machines' is familiar to the general public and politicians. Our work gives us the opportunity to present the science facts rather than the science fiction in this field and promote the excitement of creative chemistry and the general benefits of science to society. Our work has featured in more than 1200 media articles in >80 countries, and several TV programmes. I have given numerous public lectures around the world, including keynote public lectures at the British Association Festival of Science, Edinburgh International Science Festival, Cambridge Science Festival, H. Dudley Wright Colloquia in Geneva, the Bakerian Lecture of the Royal Society, and public lectures at the Institute of Creativity in Hong Kong, Blacksburg, Virginia, USA, Jerusalem and Christchurch, New Zealand. I also give talks specifically geared to young researchers, including the GDCh Christmas lectures in Düsseldorf, public lectures for the ETH 150th anniversary, the Young Danish Chemistry Society, the Young Dutch Organic Chemists Meeting, YoungChem (Poland), Berzelius day (Sweden) and at Spanish, French, US, Danish, Italian and Dutch PhD Student Conferences and Summer Schools in Tarragona, Urbana-Champaign, Bordeaux, Odense, Gargano and Eindhoven.

Our work on molecular knots features in the 2019 & 2022 Guinness Books of World Records. In 2018 we commissioned a popular music video [https://bit.ly/2N240MY] on nano-robotics [https://bit.ly/3b51h2I]. In 2017 we established a science prize at my alma mater that aims to encourage girls and financially disadvantaged school children to study science at university [https://bit.ly/2ystqPh]. In 2021 we established the 'Dawid' Female Leadership Scholarships for female PhD students in China. I am a School governor and a Director of Withington Girls' School, one of the UK's leading girls' schools.