

Leigh Group (University of Manchester, UK) – 25 most significant publications (reverse chronological order)

1. "Transducing chemical energy through catalysis by an artificial molecular motor", P.-L. Wang, S. Borsley, M. J. Power, A. Cavasso, N. Giuseppone and D. A. Leigh, *Nature* **637**, 594-600 (2025).
2. "A tape-reading molecular ratchet", Y. Ren, R. Jamagne, D. J. Tetlow and D. A. Leigh, *Nature* **612**, 78-82 (2022). Cited 47 times as of 15.1.25 (GooSch)
3. "Autonomous fuelled directional rotation about a covalent single bond", S. Borsley, E. Kreidt, D. A. Leigh and B. M. W. Roberts, *Nature* **604**, 80-85 (2022). Cited 105 times as of 15.1.25 (GooSch)
4. "Vernier template synthesis of molecular knots", Z. Ashbridge, E. Kreidt, L. Pirvu, F. Schaufelberger, J. Halldin Stenlid, F. Abild-Pedersen and D. A. Leigh, *Science* **375**, 1035-1041 (2022). Cited 44 times as of 15.1.25 (GooSch)
5. "A catalysis-driven artificial molecular pump", S. Amano, S. D. P. Fielden and D. A. Leigh, *Nature* **594**, 529-534 (2021). Cited 174 times as of 15.1.25 (GooSch)
6. "A molecular endless (7₄) knot", D. A. Leigh, J. J. Danon, S. D. P. Fielden, J.-F. Lemonnier, G. F. S. Whitehead and S. L. Woltering, *Nat. Chem.* **13**, 117-122 (2021). Cited 90 times as of 15.1.25 (GooSch)
7. "Self-assembly of a layered 2D molecularly woven fabric", D. P. August, R. A. W. Dryfe, S. J. Haigh, P. R. C. Kent, D. A. Leigh, J.-F. Lemonnier, Z. Li, C. A. Muryn, L. I. Palmer, Y. Song, G. F. S. Whitehead and R. J. Young, *Nature* **588**, 429-435 (2020). Cited 104 times as of 15.1.25 (GooSch)
8. "Tying different knots in a molecular strand", D. A. Leigh, F. Schaufelberger, L. Pirvu, J. Halldin Stenlid, D. P. August and J. Segard, *Nature* **584**, 562-568 (2020). Cited 93 times as of 15.1.25 (GooSch)
9. "Rotary and linear molecular motors driven by pulses of a chemical fuel", S. Erbas-Cakmak, S. D. P. Fielden, U. Karaca, D. A. Leigh, C. T. McTernan, D. J. Tetlow and M. R. Wilson, *Science* **358**, 340-343 (2017). Cited 360 times as of 15.1.25 (GooSch)
10. "Stereodivergent synthesis with a programmable molecular machine", S. Kassem, A. T. L. Lee, D. A. Leigh, V. Marcos, L. I. Palmer and S. Pisano, *Nature* **549**, 374-378 (2017). Cited 181 times as of 15.1.25 (GooSch)
11. "Braiding a molecular knot with eight crossings", J. J. Danon, A. Krüger, D. A. Leigh, J.-F. Lemonnier, A. J. Stephens, I. J. Vitorica-Yrezabal and S. L. Woltering, *Science* **355**, 159-162 (2017). Cited 246 times as of 15.1.25 (GooSch).
12. "An autonomous chemically fuelled small-molecule motor", M. R. Wilson, J. Solá, A. Carlone, S. M. Goldup, N. Lebrasseur and D. A. Leigh, *Nature* **534**, 235-240 (2016). Cited 461 times as of 15.1.25 (GooSch).
13. "Allosteric initiation and regulation of catalysis with a molecular knot", V. Marcos, A. J. Stephens, J. Jaramillo-Garcia, A. L. Nussbaumer, S. L. Woltering, A. Valero, J.-F. Lemonnier, I. J. Vitorica-Yrezabal and D. A. Leigh, *Science* **352**, 1555-1559 (2016). Cited 230 times as of 15.1.25 (GooSch).
14. "Sequence-specific peptide synthesis by an artificial small-molecule machine", B. Lewandowski, G. De Bo, J. W. Ward, M. Pappmeyer, S. Kuschel, M. J. Aldegunde, P. M. E. Gramlich, D. Heckmann, S. M. Goldup, D. M. D'Souza, A. E. Fernandes and D. A. Leigh, *Science* **339**, 189-193 (2013). Cited 748 times as of 15.1.25 (GooSch).
15. "A synthetic molecular pentafoil knot", J.-F. Ayme, J. E. Beves, D. A. Leigh, R. T. McBurney, K. Rissanen and D. Schultz, *Nat. Chem.* **4**, 15-20 (2012). Cited 434 times as of 15.1.25 (GooSch).
16. "A synthetic small molecule that can walk down a track", M. von Delius, E. M. Geertsema and D. A. Leigh, *Nat. Chem.* **2**, 96-101 (2010). Cited 397 times as of 15.1.25 (GooSch).
17. "Hybrid organic-inorganic rotaxanes and molecular shuttles", C.-F. Lee, D. A. Leigh, R. G. Pritchard, D. Schultz, S. J. Teat, G. A. Timco and R. E. P. Winpenny, *Nature* **458**, 314-318 (2009). Cited 287 times as of 15.1.25 (GooSch).
18. "A molecular information ratchet", V. Serreli, C.-F. Lee, E. R. Kay and D. A. Leigh, *Nature* **445**, 523-527 (2007). Cited 737 times as of 15.1.25 (GooSch).

19. "Beyond switches: Ratcheting a particle energetically uphill with a compartmentalized molecular machine", M. N. Chatterjee, E. R. Kay and D. A. Leigh, *J. Am. Chem. Soc.* **128**, 4058-4073 (2006). Cited 302 times as of 15.1.25 (GooSch).
20. "Catalytic "click" rotaxanes: A substoichiometric metal-template pathway to mechanically-interlocked architectures", V. Aucagne, K. D. Hänni, D. A. Leigh, P. J. Lusby and D. B. Walker, *J. Am. Chem. Soc.* **128**, 2186-2187 (2006). Cited 481 times as of 15.1.25 (GooSch).
21. "Macroscopic transport by synthetic molecular machines", J. Berná, D. A. Leigh, M. Lubomska, S. M. Mendoza, E. M. Pérez, P. Rudolf, G. Teobaldi and F. Zerbetto, *Nat. Mater.* **4**, 704-710 (2005). Cited 813 times as of 15.1.25 (GooSch).
22. "A reversible synthetic rotary molecular motor", J. V. Hernández, E. R. Kay and D. A. Leigh, *Science* **306**, 1532-1537 (2004). Cited 670 times as of 15.1.25 (GooSch).
23. "Unidirectional rotation in a mechanically interlocked molecular rotor", D. A. Leigh, J. K. Y. Wong, F. Dehez and F. Zerbetto, *Nature* **424**, 174-179 (2003). Cited 1035 times as of 15.1.25 (GooSch).
24. "Photoinduction of fast, reversible translational motion in a hydrogen-bonded molecular shuttle", A. M. Brouwer, C. Frochot, F. G. Gatti, D. A. Leigh, L. Mottier, F. Paolucci, S. Roffia and G. W. H. Wurpel, *Science* **291**, 2124-2128 (2001). Cited 786 times as of 15.1.25 (GooSch).
25. "Facile synthesis and solid state structure of a benzylic amide [2]catenane", A. G. Johnston, D. A. Leigh, R. J. Pritchard and M. D. Deegan, *Angew. Chem., Int. Ed. Engl.* **34**, 1209-1212 (1995). Cited 318 times as of 15.1.25 (GooSch).