

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

1. "A tape-reading molecular ratchet", Y. Ren, R. Jamagne, D. J. Tetlow and D. A. Leigh, *Nature* **612**, 78-82 (2022).
2. "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).
3. "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).
4. "A catalysis-driven artificial molecular pump", S. Amano, S. D. P. Fielden and D. A. Leigh, *Nature* **594**, 529-534 (2021).
5. "A molecular endless (7_4) 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).
6. "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).
7. "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).
8. "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 270 times as of 19.6.23 (GooSch).
9. "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 165 times as of 19.6.23 (GooSch).
10. "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 216 times as of 19.6.23 (GooSch).
11. "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 357 times as of 19.6.23 (GooSch).
12. "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 195 times as of 19.6.23 (GooSch).
13. "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 688 times as of 19.6.23 (GooSch).
14. "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 400 times as of 19.6.23 (GooSch).
15. "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 363 times as of 19.6.23 (GooSch).
16. "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 266 times as of 19.6.23 (GooSch).
17. "A molecular information ratchet", V. Serreli, C.-F. Lee, E. R. Kay and D. A. Leigh, *Nature* **445**, 523-527 (2007). Cited 654 times as of 19.6.23 (GooSch).
18. "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 268 times as of 19.6.23 (GooSch).

19. "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 430 times as of 19.6.23 (GooSch).
20. "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 754 times as of 19.6.23 (GooSch).
21. "A reversible synthetic rotary molecular motor", J. V. Hernández, E. R. Kay and D. A. Leigh, *Science* **306**, 1532-1537 (2004). Cited 608 times as of 19.6.23 (GooSch).
22. "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 948 times as of 19.6.23 (GooSch).
23. "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 756 times as of 19.6.23 (GooSch).
24. "Influencing intramolecular motion with an alternating electric field", V. Bermudez, N. Capron, T. Gase, F. G. Gatti, F. Kajzar, D. A. Leigh, F. Zerbetto and S. Zhang, *Nature* **406**, 608-611 (2000). Cited 259 times as of 19.6.23 (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 310 times as of 19.6.23 (GooSch).