

Dr Euan K. Brechin
Reader in Inorganic Chemistry

e-mail: ebrechin@staffmail.ed.ac.uk

tel: 0131-650-7545

Research Interests: synthetic coordination chemistry and molecular magnetism.



We are a synthetic inorganic group with interests in the areas of coordination chemistry and the magnetic applications of polymetallic complexes. In particular we are interested in making single-molecule magnets (SMMs) and magnetic coolants.



Among the highlights are a $[\text{Mn}_6]$ Single-Molecule Magnet (left) with $U_{\text{eff}} = 86$ K and $[\text{Mn}_{10}]$ supertetrahedra (centre) and planar discs (right) as enhanced magnetic coolers.

SELECTED RECENT PUBLICATIONS

- 1. Magnetic Quantum Tunneling: Insights from Simple Molecule-Based Magnets.** S. Hill, S. Datta, J. Liu, R. Inglis, C. J. Milios, P. L. Feng, J. J. Henderson, E. del Barco, E. K. Brechin, D. N. Hendrickson, Dalton Trans., 2010, 39, 4693.
- 2. Recipes for Enhanced Magnetic Cooling,** M. Evangelisti, E. K. Brechin, Dalton Trans., 2010, 39, 4672.
- 3. Twisting, bending, stretching: strategies for making ferromagnetic $[\text{Mn}^{\text{III}}_3]$ triangles.** R. Inglis, S. M. Taylor, L. F. Jones, G. S. Papaefstathiou, S. P. Perlepes, S. Datta, S. Hill, W. Wernsdorfer, E. K. Brechin. Dalton Trans., 2009, 9157.
- 4. A calix[4]arene 3d/4f magnetic cooler.** G. Karotsis, M. Evangelisti, S. J. Dalgarno, E. K. Brechin, Angew. Chem. Int. Ed., 2009, 48, 9928.
- 5. Calix[4]arene-based single-molecule magnets.** G. Karotsis, S. J. Teat, W. Wernsdorfer, S. Piligkos, S. J. Dalgarno, E. K. Brechin, Angew. Chem. Int. Ed., 2009, 48, 8285.
- 6. Attempting to understand (and control) the relationship between structure and magnetism in an extended family of Mn6 single-molecule magnets.** R. Inglis, L. F. Jones, C. J. Milios, S. Datta, A. Collins, S. Parsons, W. Wernsdorfer, S. Hill, S. P. Perlepes, S. Piligkos, E. K. Brechin, Dalton Trans., 2009, 3403.
- 7. Supramolecular Entanglement from Interlocked Molecular Nanomagnets.** C. C. Stoumpos, R. Inglis, G. Karotsis, L. F. Jones, A. Collins, S. Parsons, C. J. Milios, G. S. Papaefstathiou, E. K. Brechin, Crystal Growth & Design, 2009, 9, 24.