Professor Andrew Harrison
Professor of Solid-State Chemistry

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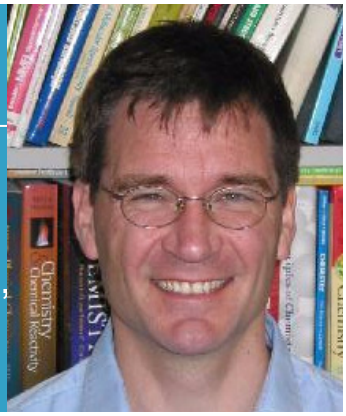
Research Interests: Magnetic materials, nanostructures, neutron scattering, microwave chemistry



Our research group has a number of related interests. (1) Design, synthesis and study of magnetic materials that are designed to elucidate some of the most fundamental problems in solid-state science. Our key experimental tool is neutron scattering, performed at international research centres in Oxfordshire (the ISIS Facility, the world's most powerful pulsed neutron source: www.isis.rl.ac.uk) and in Grenoble, France (the Institut Laue-Langevin, the world's most powerful reactor source: www.ill.fr). Projects could involve residence in Grenoble if it suited the candidate and project. (2) Synthesis and study of materials grown in mesostructured hosts, a constraint that can bestow on the material quite different properties from the bulk material. (3) Exploration of the use of microwave radiation in chemistry, and in particular studies of the ways in which such energy may accelerate solid-state and materials chemistry processes, particularly through the use of *in-situ* diffraction techniques.

SELECTED RECENT PUBLICATIONS

1. *In situ* neutron diffraction studies of single crystals and powders during microwave irradiation. A. Harrison, R.M. Ibberson, G. Robb, A.G. Whittaker, C.C. Wilson, I.D. Youngson. *Faraday Discussions*, 2003, **122**, 363
2. First catch your hare: the design and synthesis of frustrated magnets. A. Harrison. *J.Phys.:Cond. Matt***.,** 2004, **16,** S553-572
3. Ordered Mesoporous Fe_2O_3 with Crystalline Walls. F.Jiao, A. Harrison, J.-C. Jumas, A.V. Chadwick, W.Kockelmann, and P. G. Bruce. *J. Am. Chem. Soc.,* 2006, **128** 5468 -5474