

David James Price

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Date of birth: 21/01/1976

Professional Experience

2006-Present Post-doctoral work with Cameron J. Kepert, School of Chemistry, University of Sydney.

As the chief crystallographer in the group I have been responsible for training and instruction of students in crystal structure elucidation. This included a tutorial series on single-crystal X-ray crystallography for coordination chemists.

The research I have been undertaking is directed to towards obtaining extended framework coordination materials that display spin-crossover (SCO) transitions, and in addition have the potential for guest inclusion and removal, which may influence any SCO properties. I have also been participating on the crystallographic side of the two other project areas in the group: negative thermal expansion and gas storage/separation materials.

Key achievements:

- ❖ Greater development of research independence and crystallographic knowledge.
- ❖ Furthering co-supervision skills of students.
- ❖ Six publications including a *J. Am. Chem. Soc.* article.

2003-2006 Post-doctoral work with Prof. Richard Robson and Dr. Brendan Abrahams, School of Chemistry, University of Melbourne.

My research aimed to design and produce functional materials, in particular, porous solids for potential application as gas sorption materials. The work focused on extended network organoborates, which lead to the discovery of molecular squares that pack to reveal nanotubes.

Key achievements:

- ❖ Familiarity with Solvothermal synthesis in Parr bombs and mastery of self-made Carius tubes.
- ❖ Development of co-supervision role of honours and PhD students.
- ❖ Two publications, one of which was a "hot article" in *Angew. Chem. Int. Ed.* and was featured in Chemistry in Australia Highlights.

Teaching Experience

- 2003-to present Co-supervision of honours and PhD students at University of Melbourne and The University of Sydney.
- ❖ Day-to-day help and direction for honours and PhD students in crystallography, synthesis, thesis writing skills and general practical laboratory techniques.
 - ❖ Extensive thesis proof-reading and direction for honours and PhD students' theses.
 - ❖ Written a series of tutorials on single-crystal X-ray diffraction.
- 1998-2002 Demonstrator, Monash University.
- Demonstrating laboratory techniques to and supervising first, second and third year undergraduate students in general and inorganic chemistry laboratory classes. Assisting with the development of a new materials chemistry practical course for second year.

Education

- 1999-2003 **Ph.D., School of Chemistry, Monash University.**
- Supervisor: Prof. Keith S. Murray.**
- Thesis: "Synthesis, Structure and Magnetism in Clusters and Networks Containing Dicyanamide and Related Ligands"**
- My research investigated correlations between the crystal structures and magnetic properties of molecule-based magnetic materials. The work focused on two main areas: Firstly, new d-block metal dicyanamide coordination polymers containing various co-ligands. Secondly, polynuclear mixed valence manganese cluster complexes and single-molecule magnet (SMM) clusters.
- Key achievements:
- Six publications including a *Chem. Commun.* article, reporting the first SMM to be published by an Australian research group.
- 1994-1998 **B.Sc. (1st class honours).** Appointed dux of the chemistry honours class at Monash University. Majors in Chemistry and Astrophysics, with a high distinction average.

Awards

- 2011 *Laffan Fellowship* – awarded to university researchers who have, or have experienced, a significant disability, and aims to assist recipients re-establish or enhance their academic research careers.
- 2005 *Best Poster* at The December 2005 RACI Victorian Branch, Inorganic Chemistry Symposium.

- 1999-2002 *Sir James McNeill Foundation Postgraduate Scholarship* for academic achievement. One is awarded per year to a Ph.D. candidate from one of the faculties of Music, Engineering, Science or Medicine.
- 1998 *Dulux Prize* based on academic achievement and a short presentation on the honours project to representatives of Dulux.
- Best Honours Thesis Award* from the School of Chemistry, Monash University.
- 1995 Placed on the Dean's List.

Professional Affiliations

Member of the Royal Australian Chemical Institute (RACI, 1998 - present), Society of Crystallographers of Australia and New Zealand (SCANZ, 2001 - present).

Hobbies and Interests

Road cycling – holder of Cycling Australia Race Licence, member of Bicycle NSW, participated in the 2005 Around the (Port Phillip) Bay in a Day (210 km), and Amy's Ride (120 km) in 2006, 2007, 2009 and 2010. Rode the 110km Woodside to Goolwa distance in the Community Challenge of the 2010 Tour Down Under. Regularly participate in club training and social rides.

Referees

Prof. Cameron J. Kepert	Ph: +61 2 9351 5741
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Prof. Richard Robson	Ph: +61 3 8344 6469
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Prof. Keith S. Murray	Ph: +61 3 9905 4512
School of Chemistry, Monash University	Fax: +61 3 9905 4597
Clayton VIC 3800, Australia.	E-mail: Keith.Murray@sci.monash.edu.au

Publications

Tony D. Keene; Deanna M. D'Alessandro; Karl W. Kramer; Jason R. Price.; David J. Price; Silvio Decurtins; Cameron J. Kepert, "[V₁₆O₃₈(CN)]⁹⁻: A Soluble Mixed-Valence Redox-Active Building Block with Strong Antiferromagnetic Coupling", *Inorg. Chem.*, Ahead of Print.

Tony D. Keene; Michael J. Murphy; Jason R. Price; **David J. Price**; Cameron J. Kepert, "A new modification of an old framework: Hofmann layers with unusual tetracyanidometallate groups", *Dalton Trans.* **2011**, 40, 11621.

Peter D. Southon, **David J. Price**, Pia K. Nielsen, Christine J. McKenzie, and Cameron J. Kepert, "Reversible and Selective O₂ Chemisorption in a Porous Metal-Organic Host Material", *J. Am. Chem. Soc.*, 2011, **133**, 10885.

Feng Li, Jack K. Clegg, **David J. Price**, and Cameron J. Kepert, "Self-Assembly of a Metallomacrocyclic Templated by Iron(II)", *Inorg. Chem.*, 2011, **50**, 726.

Ai-Hua Yuan, Peter D. Southon, **David J. Price**, Cameron J. Kepert, Hu Zhou, and Wen-Yan Liu, "Syntheses, Crystal Structures, and the Phase Transformation of Octacyanometallate-Based $\text{Ln}^{\text{III}}\text{-W}^{\text{V}}$ Bimetallic Assemblies with Two-Dimensional Corrugated Layers", *Eur. J. Inorg. Chem.*, 2010, 3610.

Peter D. Southon, Lang Liu, Elizabeth A. Fellows, **David J. Price**, Gregory J. Halder, Karena W. Chapman, Boujemaa Moubaraki, Keith S. Murray, Jean-François Létard and Cameron J. Kepert, "Dynamic Interplay between Spin-Crossover and Host-Guest Function in a Nanoporous Metal-Organic Framework Material", *J. Am. Chem. Soc.*, 2009, **131**, 10998-11009.

Brendan F. Abrahams, Berin A. Boughton, Haozhen Choy, Oliver Clarke, Martin J. Grannas, **David J. Price**, and Richard Robson, "Trianionic Organoborate Triangles", *Inorg. Chem.*, 2008, **47**, 9797.

Jonathon E. Beves, David J. Bray, Jack K. Clegg, Edwin C. Constable, Catherine E. Housecroft, Kate A. Jolliffe, Cameron J. Kepert, Leonard F. Lindoy, Markus Neuburger, **David J. Price**, Silvia Schaffner, and Frank Schaper, "Expanding the 4,4'-bipyridine ligand: Structural variation in $\{\text{M}(\text{pytpy})_2\}^{2+}$ complexes (pytpy=4'-(4-pyridyl)-2,2':6',2''-terpyridine, M=Fe, Ni, Ru) and assembly of the hydrogen-bonded, one-dimensional polymer $\{[\text{Ru}(\text{pytpy})(\text{Hpytpy})]\}_n^{3n+}$ ", *Inorg. Chim. Acta*, 2008, **361**, 2582.

Jonathon E. Beves, Edwin C. Constable, Catherine E. Housecroft, Cameron J. Kepert, Markus Neuburger, **David J. Price**, Silvia Schaffner, and Jennifer A. Zampese, "Curly-curly, loop-loop: homoleptic metal(II) complexes of pyridinecarbaldehyde 4'-(2,2':6',2''-terpyridyl)hydrazones and their coordination polymers", *Dalton Trans.*, 2008, 6742.

Jonathon E. Beves, Emma L. Dunphy, Edwin C. Constable, Catherine E. Housecroft, Cameron J. Kepert, Markus Neuburger, **David J. Price**, and Silvia Schaffner, "Vectorial property dependence in bis{4'-(n-pyridyl)-2,2':6',2''-terpyridine}iron(II) and ruthenium(II) complexes with n = 2, 3 and 4", *Dalton Trans.*, 2008, 386.

Hu Zhou, Ai-Hua Yuan, Xiao-Ping Shen, Ying-Ying Chen, **David J. Price**, and Cameron J. Kepert, "Synthesis, crystal structure and magnetic properties of a three-dimensional cyano-bridged heterometallic complex $\{\text{Ni}^{\text{II}}(\text{Me}_6\text{-[14]ane-N}_4)\}_2[\text{W}^{\text{IV}}(\text{CN})_8]\cdot 6\text{H}_2\text{O}$ ", *Inorg. Chem. Commun.*, 2007, **10**, 940.

Joseph A. Ioppolo, Cameron J. Kepert, **David J. Price**, and Louis M. Rendina, "Mono- and Di-nuclear Gold(I) Complexes Containing 1,12-Dicarba-closo-dodecaborane(12)", *Aust. J. Chem.*, 2007, **60**, 816.

Anthony S. R. Chesman, David R. Turner, **David J. Price**, Boujemaa Moubaraki, Keith S. Murray, Glen B. Deacon, and Stuart R. Batten, "Solvothermal vs. bench-top reactions: control over the formation of discrete complexes and coordination polymers", *Chem. Commun.*, 2007, 3451.

Jonathon E. Beves, Edwin C. Constable, Catherine E. Housecroft, Cameron J. Kepert, and **David J. Price**, "The first example of a coordination polymer from the expanded 4,4'-bipyridine ligand $[\text{Ru}(\text{pytpy})_2]^{2+}$ (pytpy = 4'-(4-pyridyl)-2,2':6'-2''-terpyridine)", *CrystEngComm*, 2007, **9**, 456.

David J. Price, Stuart R. Batten, Boujemaa Moubaraki, and Keith S. Murray, "Synthesis, Crystal Structure and Magnetism of a Single Molecule Magnet, $[\text{Mn}_{16}\text{O}_{16}(\text{OMe})_6(\text{OAc})_{16}(\text{MeOH})_3(\text{H}_2\text{O})_3]\cdot 6\text{H}_2\text{O}$, and of a Mixed Bridge 1D Chain, $[\text{Mn}(\mu\text{-OMe})(\mu\text{-OAc})_2]_n$ ", *Polyhedron*, 2007, **26**, 305.

Brendan F. Abrahams, **David J. Price**, Richard Robson, "Stacking of Square Organoborate Macrocycles to Generate Nanotubes", *Angew. Chem., Int. Ed.*, 2006, **45**, 806. Selected by the editor as a "Hot Article". Featured in the April edition of Chemistry in Australia in "Highlights of Australian Chemistry".

Martin B. Duriska, Stuart R. Batten and **David J. Price**, "An Interpenetrating Coordination Polymer Reinforced by Weak Hydrogen Bonds and Argentophilic Interactions", *Aust. J. Chem.*, 2006, **59**, 26.

David J. Price, Stuart R. Batten, Boujemaa Moubaraki, and Keith S. Murray, "1D manganese(III) and iron(III) coordination polymers containing Schiff-base ligands and dicyanamide", *Indian J. Chem., Sect A*, 2003, **42**, 2256.

David J. Price, Stuart R. Batten, Boujemaa Moubaraki, and Keith S. Murray, "Synthesis, structure and magnetism of $\{[\text{Mn}(\mu\text{-OH})(\mu\text{-OAc})_2]\cdot\text{HOAc}\cdot\text{H}_2\text{O}\}_n$ and the facilitation of long-range magnetic order through hydrogen bonding", *Polyhedron*, 2003, **22**, 2161.

David J. Price, Stuart R. Batten, Kevin J. Berry, Boujemaa Moubaraki, and Keith S. Murray, "Structure and magnetism of trinuclear and tetranuclear mixed valent manganese clusters from dicyanonitrosomethanide derived ligands", *Polyhedron*, 2003, **22**, 165.

Peter J. Duggan, David G. Humphrey, **David J. Price**, and Edward M. Tyndall, "1,6-Dibenzoyloxy-2:4,3:5-O²:O⁴,O³:O⁵-bis(phenylboronoyloxy)-D-mannitol", *Acta Crystallogr., Sect. E*, 2003, **59**, o372.

David J. Price, Stuart R. Batten, Boujemaa Moubaraki, and Keith S. Murray, "Synthesis, Structure and Magnetism of a New Manganese Carboxylate Cluster: $[\text{Mn}_{16}\text{O}_{16}(\text{OMe})_6(\text{OAc})_{16}(\text{MeOH})_3(\text{H}_2\text{O})_3]\cdot 6\text{H}_2\text{O}$ ", *Chem. Commun.*, 2002, 762.

Paul Jensen, **David J. Price**, Stuart R. Batten, Boujemaa Moubaraki, and Keith S. Murray, "Self-penetration - A structural compromise between single networks and interpenetration: magnetic properties and crystal structures of $[\text{Mn}(\text{dca})_2(\text{H}_2\text{O})]$ and $[\text{M}(\text{dca})(\text{tcm})]$, M = Co, Ni, Cu, dca = dicyanamide, $\text{N}(\text{CN})_2^-$, tcm = tricyanomethanide, $\text{C}(\text{CN})_3^{--}$ ", *Chem. Eur. J.*, 2000, **6**, 3186.

Stuart R. Batten, Paul Jensen, Cameron J. Kepert, Mohamedally Kurmoo, Boujemaa Moubaraki, Keith S. Murray, and **David J. Price**, "Syntheses, structures and magnetism of $\alpha\text{-Mn}(\text{dca})_2$, $[\text{Mn}(\text{dca})_2(\text{H}_2\text{O})_2]\cdot\text{H}_2\text{O}$, $[\text{Mn}(\text{dca})_2(\text{C}_2\text{H}_5\text{OH})_2]\cdot(\text{CH}_3)_2\text{CO}$, $[\text{Fe}(\text{dca})_2(\text{CH}_3\text{OH})_2]$ and $[\text{Mn}(\text{dca})_2(\text{L})_2]$, where L = pyridine, CH_3OH or DMF and dca^- = dicyanamide, $\text{N}(\text{CN})_2^-$ ", *J. Chem. Soc., Dalton Trans.*, 1999, 2987. As of May 2006 received 140 citations.

Paul Jensen, Stuart R. Batten, Gary D. Fallon, Boujemaa Moubaraki, Keith S. Murray, and **David J. Price**, "Structural isomers of $\text{M}(\text{dca})_2$ molecule-based magnets. Crystal structure of tetrahedrally coordinated sheet-like $\beta\text{-Zn}(\text{dca})_2$ and $\beta\text{-Co/Zn}(\text{dca})_2$, and the octahedrally coordinated rutile-like $\alpha\text{-Co}(\text{dca})_2$, where dca^- = dicyanamide, $\text{N}(\text{CN})_2^-$, and magnetism of $\beta\text{-Co}(\text{dca})_2$ ", *Chem. Commun.*, 1999, 177.

Keith S. Murray, Stuart R. Batten, Boujemaa Moubaraki, **David J. Price**, and Richard Robson, "Molecular Magnetism in Manganese Dicyanamide Extended Network Structures", *Mol. Cryst. Liq. Cryst.*, 1999, **335**, 313.