PUBLICATIONS

Key to Symbols Used to Identify Research Workers

The following symbols have been used to indicate the status of individuals who were not regular members of the RSC during 2004.

- * Not a member of The Australian National University
- ≠ Visiting Fellow (during that year)
- # Member of the IAS◇
- \+ Member of the Faculties, Central Areas, or attached Centres◇

◇ Research workers with the same symbol, but from different Schools/Faculties, are numbered: #1, #2/+1, +2. A note is made of their affiliation at the end of the publication list.

Biological Chemistry

Protein Structure and Function

Dixon, N. **DNA replication: the fellowship and the rings.** *Aust. Biochemist* (2004), 35(1), 4.

Gupta, R.*, Hamdan, S.M., Dixon, N.E., Sheil, M.M.*, Beck, J.L.* **Application of electrospray ionization mass spectrometry to study the hydrophobic interaction between the ε and θ subunits of DNA polymerase III.** *Protein Sci.* (2004), 13(11), 2878–2887.

Loscha, K., Oakley, A.J., Bancia, B., Schaeffer, P.M., Prosselkov, P., Otting, G., Wilce, M.C.J.*, Dixon, N.E. **Expression, purification, crystallization, and NMR studies of the helicase interaction domain of *Escherichia coli* DnaG primase.** *Protein Expr. Purif.* (2004), 33(2), 304–310.

Ozawa, K., Headlam, M.J., Schaeffer, P.M., Henderson, B.R., Dixon, N.E., Otting, G. **Optimization of an *Escherichia coli* system for cell-free synthesis of selectively ^{15}N-labelled proteins for rapid analysis by NMR spectroscopy.** *Eur. J. Biochem.* (2004), 271(20), 4084–4093.

Pintacuda, G., Keniry, M.A., Huber, T.*, Park, A.Y., Dixon, N.E., Otting, G. **Fast structure-based assignment of ^{15}N HSQC spectra of selectively ^{15}N-labeled paramagnetic proteins.** *J. Am. Chem. Soc.* (2004), 126(9), 2963–2970.

Schaeffer, P., Headlam, M., Dixon, N. **Protein-protein interactions in the bacterial replisome.** *Aust. Biochemist* (2004) 35(1), 9–12.

Sheil, M.M.*, Beck, J.L.*, Gupta, R.*, Watt, S.*, Brown, S.E., Dixon, **N.E. Electrospray mass spectrometry of gas phase macromolecular complexes.** *Adv. Mass Spectrom.* (2004), 16, 295–313.

Wijffels, G.*, Dalrymple, B.P.*, Prosselkov, P., Kongsuwan, K.*, Epa, V.C.*, Lilley, P.E., Jergic, S., Buchardt, J.*, Brown, S.E., Alewood, P.F.*, Jennings, P.A., Dixon, N.E. **Inhibition of protein interactions with the β_2 sliding clamp of *Escherichia coli* DNA polymerase III by peptides from β_2-binding proteins.** *Biochemistry* (2004), 43(19), 5661–5671.

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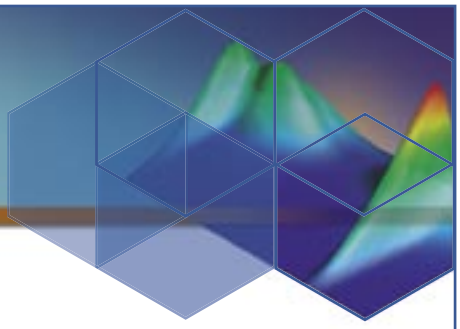

Structural Biology

Bogoyevitch, M.A.*, Boehm, I.*, Oakley, A., Ketterman, A.J.*, Barr, R.K.* **Targeting the JNK MAPK cascade for inhibition: basic science and therapeutic potential.** *Biochim. Biophys. Acta* (2004), 1697(1–2), 89–101.§

Loscha, K., Oakley, A.J., Bancia, B., Schaeffer, P.M., Prosselkov, P., Otting, G., Wilce, M.C.J.*, Dixon, N.E. **Expression, purification, crystallization, and NMR studies of the helicase interaction domain of *Escherichia coli* DnaG primase.** *Protein Expr. Purif.* (2004), 33(2), 304–310.

Oakley, A.J., Klvana, M.*, Otyepka, M.*, Nagata, Y.*, Wilce, M.C.J.*, Damborsk, J.* **Crystal structure of haloalkane dehalogenase LinB from *Sphingomonas paucimobilis* UT26 at 0.95 Å resolution: dynamics of catalytic residues.** *Biochemistry* (2004), 43(4), 870–878.§

§ Research conducted prior to commencement at RSC

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Murphy, J.M., Ford, S.C.[#1], Olsen, J.E.[#1], Gustin, S.E.[#1], Jeffrey, P.D.[#1], Ollis, D.L., Young, I.G.[#1] **Interleukin-3 binding to the murine β_{IL-3} and human βc receptors involves functional epitopes formed by domains 1 and 4 of different protein chains.** *J. Biol. Chem.* (2004), 279(25), 26500–26508.

Xu, Y.*, Wen, D.*, Clancy, P.*, Carr, P.D., Ollis, D.L., Vasudevan, S.G.* **Expression, purification, crystallization, and preliminary X-ray analysis of the N-terminal domain of *Escherichia coli* adenylyltransferase.** *Protein Expr. Purif.* (2004), 34(1), 142–146.

Xu, Y.*, Zhang, R.*, Joachimiak, A.*, Carr, P.D., Huber, T.*, Vasudevan, S.G.*, Ollis, D.L. **Structure of the *N*-terminal domain of *Escherichia coli* glutamine synthetase adenylyltransferase.** *Structure* (2004), 12(5), 861–869.

Yu McLoughlin, S., Jackson, C., Liu, J.-W., Ollis, D.L. **Growth of *Escherichia coli* co-expressing phosphotriesterase and glycerophosphodiester phosphodiesterase, using paraoxon as the sole phosphorus source.** *Appl. Environ. Microbiol.* (2004), 70(1), 404–412.

Yu McLoughlin, S., Ollis, D.L. **The role of inhibition in enzyme evolution.** *Chem. Biol.* (2004), 11(6), 735–737.

[#1] IAS (John Curtin School of Medical Research)

Biomolecular NMR

Hoshino, M., Otting, G. **Sensitivity-enhanced double-TROSY experiment for simultaneous measurement of one-bond ^{15}N–^{1}H, ^{15}N–$^{13}C'$ and two-bond ^{1}H–$^{13}C'$ couplings.** *J. Magn. Reson.* (2004), 171(2), 270–276.

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Ozawa, K., Headlam, M.J., Schaeffer, P.M., Henderson, B.R., Dixon, N.E., Otting, G. **Optimization of an *Escherichia coli* system for cell-free synthesis of selectively ^{15}N-labelled proteins for rapid analysis by NMR spectroscopy.** *Eur. J. Biochem.* (2004), 271(20), 4084–4093.

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[§] Research conducted prior to commencement at RSC

Inorganic Chemistry

Coordination Chemistry and Spectro-electro Chemistry

Bernardo, P.H.[+1], Chai, C.L.L.[+1], Heath, G.A., Mahon, P.J., Smith, G.D.[+2], Waring, P.[+1], Wilkes, B.A.[+1] **Synthesis, electrochemistry, and bioactivity of the cyanobacterial calothrixins and related quinones.** *J. Med. Chem.* (2004), 47(20), 4958–4963.

Mahon, P.J., Oldham, K.B.* **Convolutive modelling of the disk electrode geometry under reversible conditions.** *Electrochim. Acta* (2004), 49(28), 5049–5054.

Mahon, P.J., Oldham, K.B.* **The transient current at the disk electrode under diffusion control: a new determination by the Cope-Tallman method.** *Electrochim. Acta* (2004), 49(28), 5041–5048.

[+1] Faculty of Science (Chemistry)

[+2] Faculty of Science, (Biochemistry and Molecular Biology)

Synthetic Organometallic and Coordination Chemistry

Anderson, S.*, Berridge, T.E.*, Hill, A.F., Ng, Y.T.*, White, A.J.P.*, Williams, D.J.* **Dihapto carbamoyl (carboxamide) complexes of Iron(II).** *Organometallics* (2004), 23(11), 2686–2693.

Anderson, S.*, Cook, D.J.*, Hill, A.F., Malget, J.M.*, White, A.J.P.*, Williams, D.J.* **Reactions of tungsten alkylidynes with thionyl chloride.** *Organometallics* (2004), 23(11), 2552–2557.

Crossley, I.R., Hill, A.F. **Di- and zerovalent platinaboratranes: The first pentacoordinate d^{10} platinum(0) complex.** *Organometallics* (2004), 23(24), 5656–5658.

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Dewhurst, R.D., Hill, A.F., Willis, A.C. **A mercury bis(tricarbido) complex: [Hg{$C{\equiv}C{-}C{\equiv}W(CO)_2$Tp}$_2$-(dmso)$_4$](dmso)$_2$(Tp = hydrotrispyrazolylborate).** *Chem. Commun.* (2004), (24), 2826–2827.

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Foreman, M.R.St.-J.*, Hill, A.F., White, A.J.P.*, Williams, D.J.* **Polyazolyl chelate chemistry. 13. An osmaboratrane.** *Organometallics* (2004), 23(4), 913–916.

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Hill, A.F., Rae, A.D., Schultz, M., Willis, A.C. **Organometallic macrocyclic chemistry. 6. Chelate-assisted macrocyclization of 4,7,10-trithiatrideca-2,11-diyne.** *Organometallics* (2004), 23(1), 81–85.

Hill, A.F., Schultz, M., Willis, A.C. **Reactions of ruthenium(0) phosphine complexes with diphenylacetylene.** *Organometallics* (2004), 23(24), 5729–5736.

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Brasch, N.E., Hamilton, I.G., Krenske, E.H., Wild, S.B. **π-Ligand exchange on phosphenium ions: reversible exchange between free and coordinated alkynes in phosphirenium salts.** *Organometallics* (2004), 23(2), 299–302.

Kitto, H.J., Rae, A.D., Willis, A.C., Zank, J., Wild, S.B. **Synthesis and structure of the helicate (M)-(–)-$[Pt_2\{(R,R)\text{-tetraphos}\}_2](CF_3SO_3)_4 \bullet 4.5H_2O$.** *Z. Naturforsch., B: Chem. Sci.* (2004), 59b(11&12), 1458–1461.

Solid State Inorganic Chemistry

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Onagi, H., Carrozzini, B.*, Cascarano, G.L.*, Easton, C.J., Edwards, A.J., Lincoln, S.F.≠, Rae, A.D. **Separated and aligned molecular fibres in solid state self-assemblies of cyclodextrin [2]rotoxanes.** *Chem. Eur. J.* (2003), 9(24), 5971–5977.

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Bennett, M.A., Bhargava, S.K.*, Bond, A.M.*, Edwards, A.J., Guo, S.-X.*, Privér, S.H.*, Rae, A.D., Willis, A.C. **Synthesis, characterization, and electrochemical relationships of dinuclear complexes of platinum(II) and platinum(III) containing ortho-metalated tertiary arsine ligands.** *Inorg. Chem.* (2004), 43(24), 7752–7763.

Brink, F.J., Norén, L.H., Withers, R.L. **Electron diffraction evidence for continuously variable, composition-dependent O/F ordering in the ReO_3 type, $Nb^{V}_{1-x}Nb^{IV}_{x}O_{2-x}F_{1+x}$, $0 \le x \le 0.48$, solid solution.** *J. Solid State Chem.* (2004), 177(6), 2177–2182.

Carter, M.*, Withers, R.L. **An electron and X-ray diffraction study of the compositely modulated barium nickel hollandite $Ba_x(Ni_xTi_{8-x})O_{16}$, $1.16 < x < 1.32$, solid solution.** *Z. Kristallogr.* (2004), 219(11), 763–767.

García-García, F.J.*, Larsson, A.-K.#1, Norén, L., Withers, R.L. **The crystal structures of Co_3Se_4 and Co_7Se_8.** *Solid State Sci.* (2004), 6(7), 725–733.

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James, M.*, Cassidy, D.*, Wilson, K.F.*, Horvat, J.*, Withers, R.L. **Oxygen vacancy ordering and magnetism in the rare earth stabilised perovskite form of "$SrCoO_{3-\delta}$".** *Solid State Sci.* (2004), 6(7), 655–662.

Kitto, H.J., Rae, A.D., Willis, A.C., Zank, J., Wild, S.B. **Synthesis and structure of the helicate (M)-(–)-$[Pt_2\{(R,R)\text{-tetraphos}\}_2](CF_3SO_3)_4 \bullet 4.5H_2O$.** *Z. Naturforsch., B: Chem. Sci.* (2004), 59b(11&12), 1458–1461.

Liu, Y., Withers, R.L., Brink, F.J., Norén, L.H. **Cubic perovskite-related phases in the ternary $SrO–CuO–Nb_2O_5$ system.** *J. Solid State Chem.* (2004), 177(9), 3140–3148.

Liu, Y., Withers, R.L., Norén, L. **The pyrochlore to 'defect fluorite' transition in the $Y_2(Zr_yTi_{1-y})_2O_7$ system and its underlying crystal chemistry.** *J. Solid State Chem.* (2004), 177(12), 4404–4412.

Rae, A.D., Linden, A.*, Majchrzak, A.*, Mloston, G.*, Heimgartner, H.* **Bis(1-chloro-2,2,4,4-tetramethyl-3-oxocyclobutan-1-yl)pentasulfane: an occupancy modulated structure.** *Acta Crystallogr., B* (2004), 60(4), 416–423.

Ting, V., Liu, Y., Norén, L., Withers, R.L., Goossens, D.J., James, M.*, Ferraris, C.* **A structure, conductivity and dielectric properties investigation of $A_3CoNb_2O_9$(A = Ca^{2+}, Sr^{2+}, Ba^{2+}) triple perovskites.** *J. Solid State Chem.* (2004), 177(12), 4428–4442.

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Withers, R.L. **Constraints, 'order' and new types of modulated phases.** *Ferroelectrics* (2004), 305, 69–74.

Withers, R.L., Brink, F.J., Norén, L.H., Welberry, R.T., Liu, Y. **Local strain, structured diffuse scattering and oxygen/fluorine ordering in transition metal oxyfluorides.** *Ferroelectrics* (2004), 305, 123–126.

Withers, R.L., Höche, T.*, Liu, Y., Esmaeilzadeh, S.*, Keding, R.*, Sales, B.* **A combined temperature-dependent electron and single-crystal X-ray diffraction study of the fresnoite compound $Rb_2V^{4+}V^{5+}{}_2O_8$.** *J. Solid State Chem.* (2004), 177(10), 3316–3323.

Withers, R.L., Liu, Y., Norén, L., Fitz Gerald, J.D.[#2] **A TEM study of Ni ordering in the $Ni_6Se_{5-x}Te_x$, $0 < x < \sim 1.7$, system.** *J. Solid State Chem.* (2004), 177(3), 972–978.

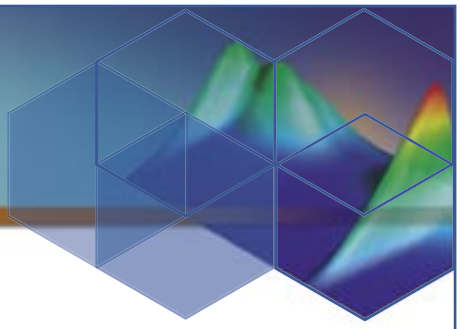
Withers, R.L., Norén, L., Liu, Y. **Flexible phases, modulated structures and the transmission electron microscope.** *Z. Kristallogr.* (2004), 219(11), 701–710.

Withers, R.L., Vincent, R.*, Schoenes, J.* **A low-temperature electron diffraction study of structural disorder and its relationship to the Kondo effect in ThAsSe.** *J. Solid State Chem.* (2004), 177(3), 701–708.

Withers, R.L., Welberry, T.R., Larsson, A.-K.[#1], Liu, Y., Norén, L., Rundlöf, H.*, Brink, F.J. **Local crystal chemistry, induced strain and short range order in the cubic pyrochlore $(Bi_{1.5-\alpha}Zn_{0.5-\beta})(Zn_{0.5-\gamma}Nb_{1.5-\delta})O_{(7-1.5\alpha-\beta-\gamma-2.5\delta)}$(BZN).** *J. Solid State Chem.* (2004), 177(1), 231–244.

[#1] IAS (Research School of Physical Sciences & Engineering)

[#2] IAS (Research School of Earth Sciences)



Organic Chemistry

Synthesis and Mechanism

Banwell, M.G., Beck, D.A.S., Smith, J.A. **The influence of chiral auxiliaries and catalysts on the selectivity of intramolecular conjugate additions of pyrrole to *N*-tethered Michael acceptors.** *Org. Biomol. Chem.* (2004), 2(2), 157–159.

Banwell, M.G., Darmos, P., Hockless, D.C.R. **Taxane diterpene synthesis studies. Part 1: chemoenzymatic and enantiodivergent routes to AB-ring substructures of taxoids and *ent*-taxoids.** *Aust. J. Chem.* (2004), 57(1), 41–52.

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Banwell, M.G., Jury, J.C. **Stereoselective syntheses of the methyl esters of (*E*)- and (*Z*)-2-methyl-6-oxohept-2-enoic acid.** *Org. Prep. Proced.* Int. (2004), 36(1), 87–91.

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Banwell, M.G., Loong, D.T.J. **Stereoselective total synthesis of the nonenolide (+)-microcarpalide.** *Heterocycles* (2004), 62, 713–734.

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Banwell, M.G., McLeod, M.D., Riches, A.G. **Taxane diterpene synthesis studies. Part 2: towards taxinine – enantiospecific construction of an AB-ring substructure incorporating both quaternary carbon centers and attempts to annulate the C-ring.** *Aust. J. Chem.* (2004), 57(1), 53–66.

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Banwell, M.G., Sydnes, M.O. **Utilization of 1-aryl-2,2-dibromocyclopropanes in synthetic approaches to phenanthroquinolizidine and phenanthroindolizidine alkaloids.** *Aust. J. Chem.* (2004), 57(6), 537–548.

Patents:

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Biochemical Reactions and Molecular Recognition

Barr, L., Dumanski, P.G., Easton, C.J., Harper, J.B., Lee, K., Lincoln, S.F.≠, Meyer, A.G., Simpson, J.S. **Cyclodextrin molecular reactors.** *J. Inclusion Phenom. Macrocyclic Chem.* (2004), 50(1–2), 19–24.

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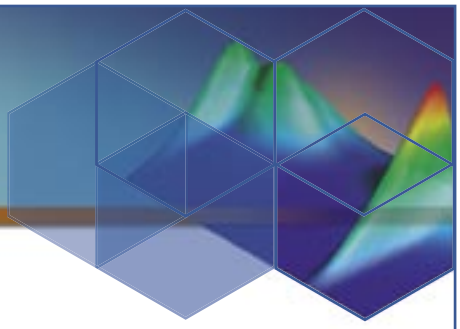

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