

## **Iron(II) spin crossover in a Series of 1-D polymers using di(2-pyridyl)amine style ligands**

**S. Neville<sup>1</sup>, K. S. Murray<sup>1</sup>, B. Moubaraki<sup>1</sup>, G. J. Halder<sup>2</sup>, K. W. Chapman<sup>3</sup>, M. B. Duriska<sup>1</sup>**

<sup>1</sup>*Inorganic Chemistry, Monash, Clayton, VIC, Australia*

<sup>2</sup>*Chemistry, Sydney University, Sydney, NSW, Australia*

<sup>3</sup>*X-ray Science Division, APS, Argonne, IL, United States*

Spin crossover is a phenomenon which has been studied extensively in mononuclear iron(II) species. Here we aim to investigate the cooperative nature of the spin transition through linking the metal centres in dinuclear and polynuclear materials [1-3]. A di(2-pyridyl)amine type ligand has been incorporated into a series of 1-D polymeric species where inter- and intramolecular effects play a large role in the observed magnetic behavior. Single crystal and synchrotron powder diffraction techniques have been used to follow the thermally induced spin crossover.

- (1) K.S. Murray, C. J. Kepert, *Top Curr Chem*, 2004, 233.
- (2) G. J. Halder, C. J. Kepert, B. Moubaraki, K. S. Murray, *Science*, 2002.
- (3) J. J. Amore, C. J. Kepert, B. Moubaraki, S. M. Neville, J. D. Cashion, K.S. Murray, *Chem - Eur. J.* 2006.