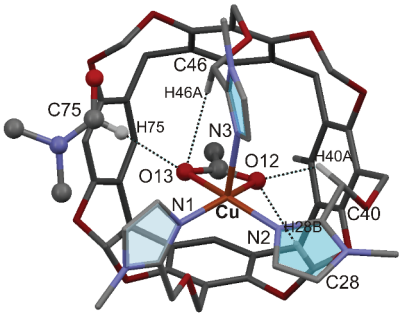

Figure 1. Structure of $[RIm_3Cu(II)CH_3COO]ClO_4$, top view

Keywords: resorcinarene, biomimetic, zinc, copper, X-ray single crystal diffraction, IR, NMR, EPR

MS30-P23 Through the looking glass: anomalies and packing

Alice Brink[1]

1. University of the Free State, Chemistry Department, P.O. Box 339, Bloemfontein, 9301, South Africa

email: alice.brink@gmail.com

The formation and substitution of mono-, bi- and tridentate ligand substituted organometallic complexes to tailor the reactivity and biological activity of potential radiopharmaceuticals is filled with unexpected developments. X-ray crystallography grants undeniable advantages to "peer through the looking glass" in understanding the chemical trends in Group 7 (I) tricarbonyl complexes.

Our interest in the variation induced by ligand systems on *fac*-$[M(CO)_3]^+$ complexes allows for interesting solid state as well as solution mechanistic studies utilising a range of spectroscopic techniques in addition to crystallography. The mixed ligand concept supports the platform of labelling the bioactive molecules to the transition metal complex utilising various bifunctional chelators. The solid state behaviour and the kinetic rate of substitution are widely influenced by the charge of the coordinated ligand system and the effects of the substituted monodentate incoming ligand. Isostructural and polymorphic crystallization effects will be described in addition to the substitution effects caused by incoming ligands with various acid/ base characteristics.

Keywords: Radiopharmaceutical design, substitution kinetics