Poster

In “Au” Over Metallophilic Interactions

C. van Staden[1], D.V. Kama[1], R.E. Kroon[1], C. Matthews[1], M. Schutte-Smith[1], L. Moskaleva[1], H.G. Visser[1]

[1]*University of the Free State, Bloemfontein, Free State, South Africa*

christovanstaden00@gmail.com

Metallophilic interactions occur between two metal atoms when they are between 2.5Å to 3.5Å apart. It has attracted recent interest because of its enhancement of the various properties to expand the application potential [1]. The most popular interactions are observed between coinage metals namely gold, silver and copper. These interactions occur in three conformations namely: fully supported with two bridging ligands forming a cyclic backbone, semi supported with only one bridging ligand or unsupported where the only entity holding the metals together is the interaction [2]. Metallophilic interactions between gold atoms (aurophillic interactions) have attracted the most interest due to the enhanced luminescent properties associated with the interaction and the potential applications that stem thereof [3]. The predetermined manipulation potential of the phosphine-based ligand system used in the study (bis(diphenylphopshino)amine (PNP) ligand) lies in the variation of the size of the amine substituent. Through varying this component, the ligand showed variation in the catalytic selectivity [4-8]. Furthermore phosphine ligand systems proved to stabilise gold atoms upon coordination [9]. Herein we investigate the structural properties through the utilisation of PNP ligands and the potential manipulation of the metalophillic interactions in fully supported dimeric complexes. The investigation is supported by SC-XRD data of a range of complexes with a variety of N-substituents as illustrated in Fig. 1.

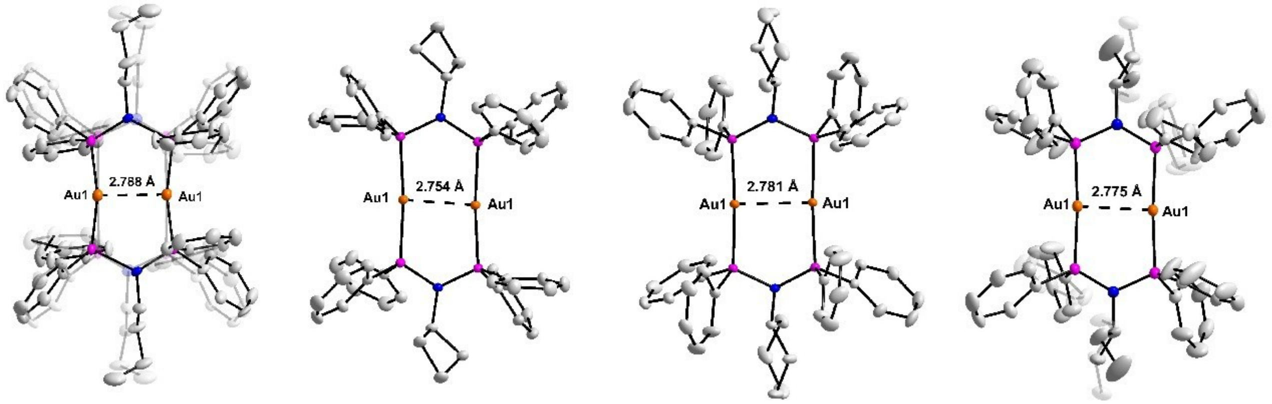

Figure 1. The illustration of selected crystal structures investigated in this study. Hydrogen atoms, counterions and solvent molecules were omitted for clarity.

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