MS32-P12 | EXAMINATION OF THE INTERMOLECULAR AUROPHILIC INTERACTIONS IN THE CRYSTALS OF THE (ARCOC=C)(PEt_3)AU AND [(ARCOC=C)2AU]-[AU(PEt_3)$_2$]+ COMPLEXES.

Pawledzio, Sylwia (Biological and Chemical Research Centre, Department of Chemistry, University of Warsaw, Warsaw, POL); Makal, Anna (Biological and Chemical Research Centre, Department of Chemistry, University of Warsaw, Warsaw, POL); Wozniak, Krzysztof (Biological and Chemical Research Centre, Department of Chemistry, University of Warsaw, Warsaw, POL)

Due to their specific luminescence [1] or catalytical [2] properties, the chemistry of gold(I) complexes is of great research interest. Apart from that, in some of their supramolecular architectures, aurophilic interactions [3] could be found. The occurrence of these interactions is, among others, strongly related to the relativistic effects and the strength of these interactions is comparable to the strength of hydrogen bonds. Therefore, these interactions compete with other secondary interactions in the crystal packing and could be easily overruled by steric effects [4].

Recently, Głodek *et al*. [1] reported the synthesis of a new type of title complexes. The structures were determined by the X-ray diffraction and their luminescence properties were described.

Herein, we would like to extend the characterization of these complexes and examine the ligand-scrambling influence on their supramolecular architectures. It appears that the steric effects play a decisive role in the crystal packing and aurophilic interactions were only found in the crystal structure of $[(ArCOC{\equiv}C)_2Au]^-[Au(PEt_3)_2]^+$. Therefore, in this study we would like to present a comprehensive comparison of the supramolecular architecture, intermolecular interactions and energy band gaps in these complexes.

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