

**MS33-1-3 The dicyanoaurate supramolecular chemistry: a plethora of opportunities**  
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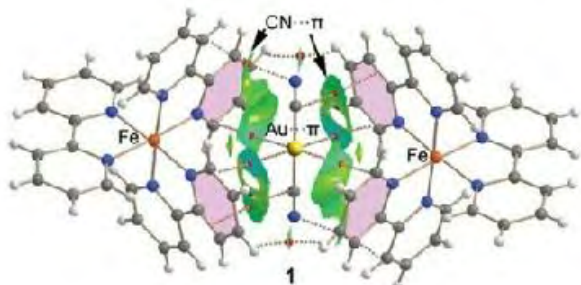
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**Abstract**

The supramolecular chemistry of dicyanoaurate anion have shown an explosion, with the discovery of materials with impressive properties like vapochromism,[1] strong luminescence[2] and non-classical response to pression and temperature.[3] Most of the previous work has been focalized on the construction and engineering of materials through the coordination ability of the terminal cyanides and on the incredibly strong Au(I)...Au(I) aurophilic interactions that this complex can show. In more recent years, it has been more and more clear that a series of other energetic components of the crystal packing that are not necessarily weaker than the previous ones have not yet been considered. One of these contributions is the coinage bonding, very different in nature from aurophilic interaction, but also more exotic metallophilic interactions have been rarely studied. In this contribution, we will speak about the results on some more exotic interaction, like Au(I) ...Cu(II),[4] Au(I) ... $\pi$ [5] and Au(I) ...Ag(I), that we analyzed in a series of bimetallic crystalline compounds through QTAIM theory, NCI plots and NBO computational tools, demonstrating their strength and defining their nature.

**References**

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 Au... $\pi$  interaction


## Au...Cu coinage bonding

