

From Metal-Metal Multiple Bonds to Helical Metal Strings

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The study of metal string complexes with 1-D transition metal frameworks (Fig.1) began in the early 1990s. Since these complexes provide great insight into multiple metal-metal bonds, and may have potential applications as molecular wires (Fig.2), this field of research has grown in the past 20 years. As such, the electronic structure of the simplest trinuclear complexes, the supporting ligand systems, and single molecular conductance of metal string complexes are discussed. This review will introduce the development of this field and summarize some important results in the newly designed heteronuclear metal string complexes (HMSCs). These molecules may be of great interest in studying the nature of heterometallic electronic effects and molecular electronic applications.

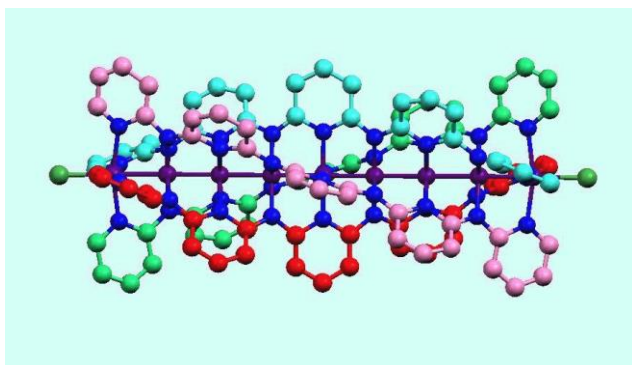


Figure 1: Molecular Model of Metal String Complex with Quadruple Ligands

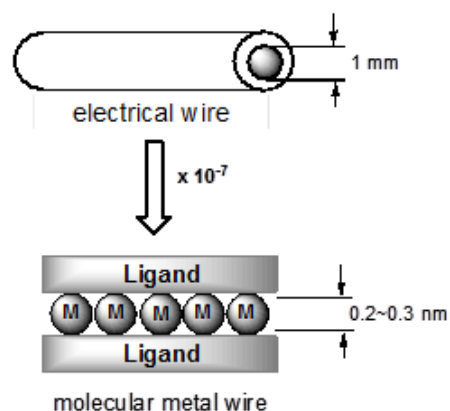


Figure 2: An Electric Wire and a Miniature Molecular Metal Wire

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