

Transition Metal Complexes Supported by Tetrakis(imino)pyracene Ligands: Exploiting Redox Noninnocence for Materials Applications

It is well-established that the bis(arylimino)acenaphthene (BIAN) ligand engenders properties such as electronic delocalization, intramolecular charge redistribution, single-electron transfer, and valence tautomerism in complexes of early transition metals. In an effort to expand and exploit this electronic behavior, homo- and heterobimetallic complexes of early transition metals supported by the bifunctional analogue of the BIAN ligand, tetrakis(imino)pyracene (TIP), have been synthesized. These TIP complexes, similar to their BIAN counterparts, display electronic delocalization between metal sites. In this presentation, the characteristics of Group 3-6 homo- and heterobimetallic complexes supported by the TIP ligand will be discussed and ongoing efforts to capitalize on this behavior for novel electronic and magnetic materials.