

W0035

From Molecular Function To Supramolecular Assembly. Christer B. Aakeröy, John Desper, Brock Levin, Janie Salmon, Nate Schultheiss, Ben Scott, Michelle Smith, Joaquin Urbina, Dept. of Chemistry, Kansas State Univ., Manhattan, KS. 66506.

Chemistry is the science of communication and change, and these interrelated processes are primarily initiated and controlled by reversible interactions between molecules. Our ability to design and synthesize discrete molecular species has been developed and refined for over a century, and today we are capable of making extraordinary molecules that rival some of Nature's best efforts when it comes to structural complexity and chemical reactivity. However, the synthesis of supramolecular assemblies composed of many different molecular fragments held together by non-covalent forces, is far less advanced, and our understanding of how groups of molecules communicate, bind, organize, and function, is still incomplete.

This presentation is intended to demonstrate how the use of suitable supramolecular reagents can allow for directed assembly of small molecules into architectures of considerable complexity. The general synthetic approach is based upon a hierarchical view of intermolecular forces that allows for a modular high-yielding assembly process of ternary and quaternary (see below) co-crystals.

