

Molecular engineering through serendipity

Davide Bonifazi

Namur Research College (NARC) and Department of Chemistry, University of Namur, Rue de Bruxelles 61, 5000, Namur, Belgium

Email: davide.bonifazi@unamur.be

Organic architectures are considered amongst the most promising candidates for engineering molecular-based devices. It is however necessary to develop systems that can form at interfaces organized molecular assemblies featuring addressable and controllable arrangements. In this respect, the hierarchical self-assembly of organic molecules featuring complementary non-covalent recognition sites allowing the simultaneous assembly of several units and long-range order is one of the most promising approaches.

In this talk, I will describe our approaches to engineer multidimensional structures through the exploitation of weak interactions established by programmed organic-based molecules. Quoting a letter (dated 28 January 1754) from Horace Walpole to Horace Mann, he said he formed it from the Persian fairy tale "*The Three Princes of Serendip*", whose heroes "were always making discoveries, by accidents and sagacity, of things they were not in quest of". Therefore, specific serendipitous examples will be discussed with the attempt to answer to the question of whether and how the supramolecular approach can bridge organic chemistry with molecular organization and to which extent we can achieve macroscopic functions solely through molecular engineering.

