## Molecularly Designed Functional Materials; can we really control their Supramolecularity?

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Supramolecular chemistry can be simply defined as the chemistry of multicomponent molecular assemblies in which the component structural units are typically held together by a variety of weaker (noncovalent) interactions (chemistry beyond molecules). A specific example of such supramolecules is inclusion compounds. Inclusion Compounds are formed by the noncovalent insertion of *guest* molecules into the *host* lattice during the crystallization process.

Supramolecules present great potential industrial applications in separation of isomers, purification of solvents, drug delivery, catalysis, molecular recognition and many other fields. Recently, we have been working on design and synthesis of new host molecules such as V-shape diquinolines and arene derivatives and investigating their self assembly as well as their potential applications. Although the chemical modifications of the molecular structures are very reliable and accessible, prediction of the supramolecular behavior is not always easy and in some cases can be very complex.

In this paper, examples of these new hosts will be presented as well as their design and synthesis procedures. Furthermore, the crystal structures of some of these new inclusion compounds will be described in detail.

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