

Conferencia: Chemistry inside and Applications of Molecular Containers

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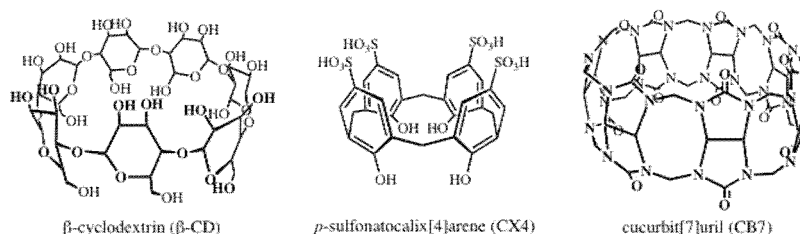
Chemistry inside and Applications of Molecular Containers

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Molecular container compounds of the calixarene, cyclodextrin, and cucurbituril type have been extensively employed in two main areas in the solution phase: supramolecular catalysis and molecular recognition. The former is of prominent interest for mimicking biocatalysis by carrying out chemical reactions in confined nanospace,¹ while the latter bears enormous potential for practical applications, namely sensing and separation technologies.²



We will describe our own work in both areas. In catalysis, we will elaborate on examples involving the use of macrocycles, in particular cucurbiturils, in metal ion and proton-assisted (photo)reactions.^{3,4} Recently, we have been able to realize chemical reactions inside molecular containers in the gas phase.⁵ In molecular recognition, we will describe new strategies for exploiting the rather unselective binding^{6,7} of molecular containers, calixarenes and cucurbiturils, in combination with fluorescent dyes, for sensitively and specifically monitoring biochemical processes in complex systems.⁸⁻¹⁴

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