

Use of the calix[4]arene platform: formation of metallic clusters and nanoscale cages

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Multimetallic nanocontainers or cages attract significant attention due to their unique structure and potential applications. Octahedral cages can be formed by combining calixarene metallic complexes, connected with each other via linear or triangular connectors. Such type of compounds presents symmetry, well-defined and large cavities (diameter between $> 12 \text{ \AA}$) and also stability in solution and also in the solid state. Moreover, there is a possibility for cages to exhibit outstanding chemical and physical behavior due to presence of metallic centers within their structure, like porosity or catalytic properties. Moreover, presence in the cage structure of chiral species opens possibilities for enantiomers separation and asymmetric catalysis.

In this presentation, new type of multimetallic cages are targeted using sulfonatothiacalix[4]arene and different metallo-organic connectors, like Co(III)-dipyrin or porphyrin based connectors. Their gas adsorption properties are also discussed.