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, while the latter bears enormous potential for practical applications, namely sensing and separation technologies.

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. Recently, we have been able to realize chemical reactions inside molecular containers in the gas phase.

In molecular recognition, we will describe new strategies for exploiting the rather unselective binding of molecular containers, calixarenes and cucurbiturils, in combination with fluorescent dyes, for sensitively and specifically monitoring biochemical processes in complex systems.

References


CBC SEMINAR ANNOUNCEMENT

Professor Werner Nau
Jacobs University Bremen

Chemistry inside and Applications of Molecular Containers

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, while the latter bears enormous potential for practical applications, namely sensing and separation technologies.

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. Recently, we have been able to realize chemical reactions inside molecular containers in the gas phase. In molecular recognition, we will describe new strategies for exploiting the rather unselective binding of molecular containers, calixarenes and cucurbiturils, in combination with fluorescent dyes, for sensitively and specifically monitoring biochemical processes in complex systems.

Date: 15th November 2013 (Friday)
Time: 11:00am – 12:30pm
Venue: NTU SPMS CBC Building Level 2, Conference Room
Host: Asst Professor Zhao Yanli