Im Rahmen der gemeinsamen Kolloquien der Fakultät für Chemie und Chemische Biologie der Technischen Universität Dortmung und des Projektens RAMSES hält

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einen Vortrag mit dem Thema

"Complex Simplicity: Synthesis of Mechanical Bonds"

The steric restrictions imposed on molecular strands by knotting can impart significant physical and chemical properties, including chirality, strong and selective ion binding, and catalytic activity. The strategies for the synthesis of some of the most complicated molecular knots known to date via metal and anion template synthesis will be presented and their potential applications will be discussed. In addition, potential future targets will be identified.

Mechanical bonds are not only found in knotted molecules. In rotaxanes and catenanes they can also be used for the molecular encapsulation of reactive species: the stability of polyyne chains is increased by rotaxane formation. Encapsulated polyynes in conjunction with masked alkyne equivalents (MAEs) might be used for the solution synthesis of encapsulated cyclocarbons (circular arrangements of sp-hybridized carbon atoms). Different photocleavable MAEs and their unmasking behavior will be presented, incorporation of MAEs into rotaxanes allows for the generation of extended polyyne rotaxanes. Such structures are important models for the synthesis of encapsulated cyclocarbons, which are current synthetic targets.

References

Zeit: Montag, 03.02.2020, 14:00Uhr
Ort: Campus Nord, Chemiegebäude, C2-03-528

Für die Dozenten der Chemie

Der Dekan

Betreuer: Prof. Clever (0231/755 8677)