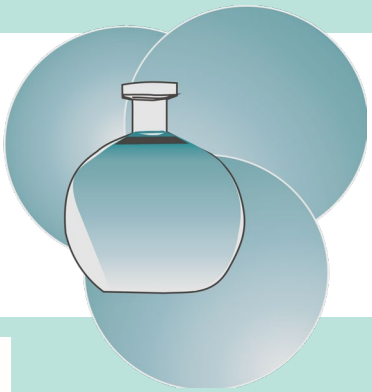
Fakultät für Naturwissenschaften

Institut für Chemie



lädt ein

gemeinsam mit der Gesellschaft Deutscher Chemiker zum

Vortrag

von Frau

Prof. Stefanie Dehnen

Institut für Nanotechnologie (INT)
Karlsruher Institut für Technologie (KIT)

GDCh
GESELLSCHAFT DEUTSCHER CHEMIKER

"Multinary Clusters: Atomically Precise Materials with Uncommon Properties"

am: 26. Oktober 2023

um: 16:00 Uhr

wo: im Raum 1/232

Die kleine Kaffeerunde vor dem Vortrag beginnt um 15:30 Uhr im Raum 1/232.
Das Mitbringen von eigenen Trinkgefäßen ist erwünscht.

Gäste sind herzlich willkommen!

TECHNISCHE UNIVERSITÄT
IN DER KULTURHAUPTSTADT EUROPAS
CHEMNITZ

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Fakultät für Naturwissenschaften

Institut für Chemie

Prof. Stefanie Dehnen

Institut für Nanotechnologie (INT)
Karlsruher Institut für Technologie (KIT)

GDCh Gesellschaft Deutscher Chemiker

"Multinary Clusters: Atomically Precise Materials with Uncommon Properties"

Research in the field of multinary cluster compounds has attracted worldwide interest in recent times. The most obvious feature is the wide variety of different cluster compositions and architectures, but the resulting materials do also show unexpected functionalities that are promising in terms of practical application.[1-4] While there are many different approaches to multinary clusters, our access makes use of binary precursor units of p-block elements in a coordination-chemical manner, with or without rearrangement of such units during cluster formation. Depending on the elemental composition, the products belong to the family of metallide clusters with metal atoms adopting negative charges,[3] or form metalate architectures with metal atoms in positive oxidation states,[4] which fundamentally affects the chemical and physical properties of the compounds. Unsubstituted multinary clusters like [Th@Bi12]3– [5] or [K2Zn20Bi16]6− serve to study structural variations and to gain new insights into cluster formation and bonding. Cluster aggregation[7] or organic substituents, as in [{Ru(cod)}4Bi18]4–,[8] [{CpRu}3Bi6]–,[9] or [Sn10O4S16(SBu)4]4–,[10] modify solubility and reactivity and can also cause extreme nonlinear optical properties, rendering compounds like [(StySn)4S6][11] or [{(CoMo)3S4Sn}(PhSn)3S6][12] potentially useful, innovative materials.

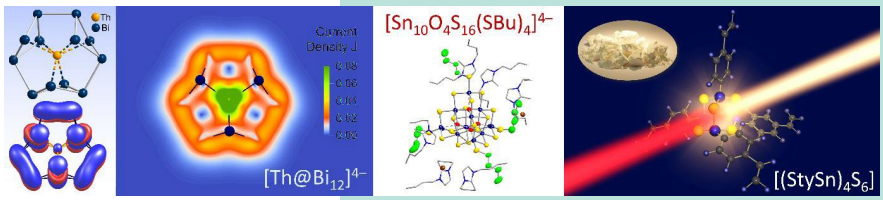

Figure: Multinary cluster molecules.

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