GESELLSCHAFT DEUTSCHER CHEMIKER
ORTSVERBAND SIEGEN

Ankündigung

Am Montag, **08. Mai 2023**, spricht um **16:30 Uhr**
im Hörsaal AR-F 002 des Departments Chemie und Biologie

Prof. Dr. Stefanie Dehnen

Karlsruher Institut für Technologie (KIT)

über das Thema

„ Multinary Clusters: Atomically Precise Materials with Uncommon Properties “

Kaffeerunde ab 16 Uhr in Raum AR – H 100,
organisiert durch das
JungChemikerForum Siegen

Alle interessierten Kolleginnen und Kollegen, Mitarbeiterinnen und Mitarbeiter und Studierende sind zu diesem Vortrag herzlich eingeladen.
Gäste sind herzlich willkommen.

Der Ortsverbandsvorsitzende
PD Dr. Jörn Schmedt auf der Günne
Tel. 0271 740-4219

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"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 $[Th@Bi_{12}]^{3-}$ [5] or $[K_2Zn_{20}Bi_{16}]^{6-}$ [6] serve to study structural variations and to gain new insights into cluster formation and bonding. Cluster aggregation[7] or organic substituents, as in $[\{Ru(cod)\}_4Bi_{18}]^{4-}$,[8] $[\{CpRu\}_3Bi_6]^-$,[9] or $[Sn_{10}O_4S_{16}(SBu)_4]^{4-}$,[10] modify solubility and reactivity and can also cause extreme nonlinear optical properties, rendering compounds like $[(StySn)_4S_6]$[11] or $[\{(CoMo)_3S_4Sn\}(PhSn)_3S_6]$[12] potentially useful, innovative materials.

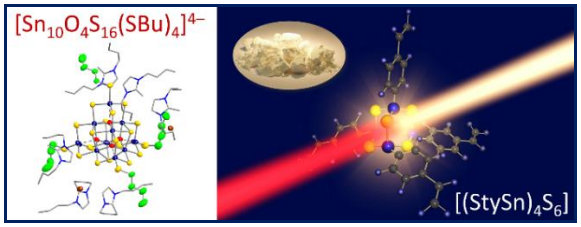

Figure: Inorganic-organic hybrid clusters based on group 14/16 cluster cores.

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