



Synthesis and reactivity of functionalized binary and ternary thiometallate complexes $[(RT)_4S_6]$, $[(RSn)_3S_4]^{2-}$, $[(RT)_2(CuPPh_3)_6S_6]$, and $[(RSn)_6(OMe)_6Cu_2S_6]^{4-}$ (R = C_2H_4COOH , CMe_2CH_2COMe ; T = Ge, Sn).

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Streszczenie

A series of compounds comprising functionalized thiometallate cages $[(RT)_4S_6]$ (R terminated by COO(H) or COR groups), based on adamantane (T=Ge) or double-decker (T=Sn) type structures or $[(RSn)_3S_4]^{2-}$ anionic defect heterocubanes were synthesized and their reactions with 1) transition-metal compounds and 2) hydrazine derivatives were explored. Hence it was possible to generate functionalized ternary CuSnS or CuGeS clusters and to transfer COR ligands into CR(N-NH₂) or CR(N-NHPh) terminal groups, respectively. The report provides the proof-of-principle for a directed functionalization and derivatization of chalcogenidometallate cages with respect to the formation of chalcogenidometallate-organic hybrid compounds containing M/E semiconductor nodes, as an alternative to the so far most prominent M/O combination in metal-organic frameworks. DFT investigations deliver further insight in the peculiarities of Ge/S versus Sn/S precursors and their products.

Słowa kluczowe

chalcogens, cluster compounds, Density functional calculations, germanium, structure elucidation, tin

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