Germanium
I 4700

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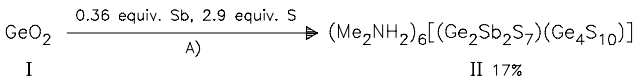
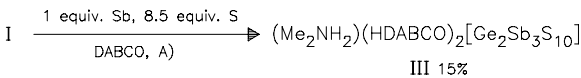
42- 014

A Series of Novel Organically Templated Germanium Antimony Sulfides. — The structures of the novel title compound (II) (triclinic, space group P1, Z = 2), (III) (monoclinic, C2, Z = 2) and (V) and (VII) (orthorhombic, Pbca, Z = 8) are determined by single crystal XRD. (II) features two distinct tetranuclear $[Ge_2Sb_2S_7]^{2-}$ and $[Ge_4S_{10}]^{4-}$ isolated clusters. Compound (III) contains one-dimensional $[Ge_2Sb_3S_{10}^{3-}]_n$ ribbons formed by two $[GeSbS_5^{3-}]_n$ chains which are bridged by an Sb^{3+} ion in ψ-SbS_4 configuration. The isotypic compounds (V) and (VII) feature the unique two-dimensional grid layer structures of $[GeSb_2S_6^{2-}]_n$. All the compounds are wide bandgap semiconductors. — (FENG, M.-L.; XIONG, W.-W.; YE, D.; LI, J.-R.; HUANG*, X.-Y.; Chem. Asian J. 5 (2010) 8, 1817-1823, DOI:10.1002/asia.201000104 ; State Key Lab. Struct. Chem., Fujian Inst. Res. Struct. Matter, Chin. Acad. Sci., Fujian, Fuzhou 350002, Peop. Rep. China; Eng.) — Schramke

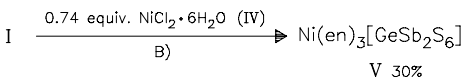


I II 17%

A): Me_2N-CHO, 160°C, [autoclave, 7 d]

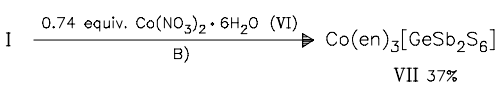


III 15%



V 30%

B): 1.24 equiv. Sb, 5.6 equiv. S, en, 160°C, [autoclave, 7 d]



VII 37%