Synthesis and Reactivity of Novel Bis(stannyl)silanes

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Dedicated to Prof. Dr. H. Oehme on the occasion of his 60th birthday

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Stannylsilanes, Rearrangement, Reactions with Alkynes, X-Ray Data

Bis(stannyl)silanes of types $R_3Sn\text{-}SiR'_2\text{-}SnR_3$ and $R_2(H)Sn\text{-}SiR'_2\text{-}Sn(H)R_2$ with R' being methyl, phenyl, *iso*-propyl or *tert*-butyl have been synthesized by treatment of difunctionalized diorganosilanes with alkali stannides (R = Me, ^{t}Bu; R' = Me, ^{i}Pr; **1** - **6**, **8**) or with triphenyltin chloride and magnesium (R = Ph; R' = Me, Ph, ^{i}Pr; **7**, **9**). $Me_3Sn\text{-}Si^tBu_2\text{-}SnMe_3$ **4**, was halogenated using $SnCl_4$, to yield the bis(chlorostannyl)silane **11**.

The reaction of bis(stannyl)diorganosilanes $R_3SnSiR'_2SnR_3$ with catalytic amounts of $Pd(PPh_3)_4$ resulted in unexpected rearrangements under formation of the silyldistannanes $R_3SnSnR_2SiR'R_2$. These compounds undergo addition reactions with alkynes. All compounds have been identified by NMR, IR, MS and elemental analysis. Compounds **5**, **6** and **7** have also been characterized by X-ray crystallography.