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Synthesis and Spectral Characterization of Unsymmetric Organotin(IV) Derivatives

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Abstract: Unsymmetric Organotin(IV) compounds of general formula $R_{4-n}SnR'_n$ have been synthesized by the reaction of corresponding organotin(IV) chlorides with n-hexyl magnesium bromide prepared in dry ether in situ, where $R = CH_3, n-C_4H_9, C_6H_5, C_6H_5CH_2$ and $R' = n-C_6H_{13}$. The reactions were carried out in dry toluene, refluxed for 6 h and the final products were purified through vacuum distillation. These compounds were characterized by multinuclear NMR ($^1H, ^{13}C, ^{119}Sn$), IR spectroscopy and mass spectrometry to predict their structures. All spectroscopic results support the four-coordination and tetrahedral geometry of the compounds.

Key Words: Unsymmetric organotin(IV) compounds, multinuclear NMR, tetrahedral organotin(IV) compounds.

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