Amino Acid Derivatives and Potential Organic Ligand – Modified R2SnCl2 : Preparation and Spectroscopic Characterization

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The chemistry of organic-inorganic hybrid complexes of organotin(IV) has received considerable attention due to their technological applications and biological relevance. The synthetic, structural and biological aspects of these hybrid complexes have been extensively investigated. These complexes have interesting structural features and possess potential biological activities. The use of two potential organic ligands in the design of organic-inorganic hybrid complexes of organotin(IV) is an interesting area of research. Some of these complexes have been reported to possess antineoplastic activity. In order to synthesize organic-inorganic hybrid complexes of organotin(IV), the reactions of R2SnCl2 with sodium salt of amino acid derivatives and sodium salt of potential organic ligand were carried out in 1:1:1 molar ratio in refluxing dry THF. Plausible structures of these complexes were suggested on the basis of physico-chemical and spectroscopic studies. These complexes possess Sn←N bond which is important for biological activity. 119Sn NMR chemical shift values reveal the presence of penta-coordinated tin centre in these complexes. Hence, a trigonal bipyramidal geometry may be suggested for these organic-inorganic hybrid complexes of organotin(IV).

Thrust area- Organometallics and Material Chemistry

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