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Synthesis and spectroscopic studies of some new organometallic chelates derived from bidentate ligands

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Abstract: A series of organosilicon(IV) and organotin(IV) complexes having the formulae $R_2MCl(L^1)$, $R_2MCl(L^2)$, $R_2MCl(L^3)$, $R_2MCl(L^4)$, $R_2M(L^1)_2$, $R_2M(L^2)_2$, $R_2M(L^3)_2$, and $R_2M(L^4)_2$, where $M = Si$ and Sn , and $R = CH_3$, were synthesized with Schiff bases 5-mercapto-4-(pyridine-2-carboxalideneamino)-s-triazole (HL^1), 4-(furfuralideneamino)-5mercapto-s-triazole (HL^2), 4-(2-chlorobenzylideneamino)-5-mercapto-s-triazole (HL^3), and 4-(4-flourobenzylideneamino)-5-mercapto-s-triazole (HL^4). These complexes were characterized by elemental analysis, molar conductance, and spectroscopic studies, including UV, IR, 1H , ^{13}C , ^{29}Si , and ^{119}Sn NMR spectroscopy. On the basis of these studies, the resulting complexes are proposed to have trigonal bipyramidal and octahedral geometries.

Key Words: 4-Amino-5-mercapto-s-triazole, Schiff bases, silicon complexes, tin complexes, spectroscopy

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