DEVELOPMENT OF SN PRECURSORS FOR TIN OXIDE THIN FILMS VIA ATOMIC LAYER DEPOSITION

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Herein we reported that the synthesized bidentate aminoacoholic ligands, ***L1***H - ***L4***H, with $Sn(O^tBu)_4$ in a molar ratio of 2:1 produced heteroleptic complexes **1** – **4**, which were fully characterized by various spectroscopic methods and theoretical DFT studies. The solution-state nuclear magnetic resonance spectroscopy and X-ray crystallography revealed that the monomeric formation of $Sn\boldsymbol{L}_2$ was identical in the solution and solid phases. This was also evident in the mass analysis of each complex shown as the parent peaks. The molecular structures of **1** and **2** were confirmed that cis conformer whereas complexes **3** and **4** trans, which were in good agreement with the calculated DFT results. All complexes performed exceptionally well in thermogravimetric analysis and showed multistep weight loss profiles with residual mass below max. 36 %. In particular, 1 showed the lowest residual weight of 6.9 %.