

# Synthesis, Spectroscopy and Structure of Diorganotin(IV) Schiff Base Complexes

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Three diorganotin(IV) chelates with a tetradentate Schiff base, H<sub>2</sub> Vanophen, [H<sub>2</sub> Vanophen = N,N'-1,2-phenylen-bis(3-methoxysalicylideneimine)] of the type R<sub>2</sub>Sn(Vanophen) (R = Ph: **1**; R = *n*-Bu: **2**; R = Me: **3**) have been synthesized by the reaction of R<sub>2</sub>SnCl<sub>2</sub> (R = Ph, *n*-Bu, Me) and H<sub>2</sub> Vanophen in the presence of triethylamine in benzene. The complexes have been characterised by IR and NMR spectroscopy and by elemental analysis. The  $\delta(^{119}\text{Sn})$  values for the complexes **1** - **3** are -543.0, -414.2 and -398.2 ppm respectively, indicating hexacoordinated Sn centers. These have been ascertained by X-ray crystal structure determinations of **1** and **3**. The distances between tin and the two axial carbon atoms in each complex differ not significantly [2.17(1) Å in **1**, and 2.100(3) and 2.115(3) Å in **3**]. The C-Sn-C angles for **1** and **3** are 165.9(4)<sup>o</sup> and 159.96(9)<sup>o</sup>, respectively. The solution NMR spectra (<sup>1</sup>H, <sup>13</sup>C, <sup>119</sup>Sn) show clearly that the solid state structures are retained in solution.

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