

***Tris*(catecholato)silicates of nickel: Synthesis, characterization and first observation of inter-ion ligand transfer**

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Catecholato complexes of transition metals have evoked interest for long and have also been the subject of recent studies due to their importance as useful model compounds for the study of microbial uptake and transport of iron. With regard to the constitutional and structural issues of nickel catecholates, many contradictory reports have appeared in literature. Only in 1998, Reymond *et al* have clarified through X-ray crystallographic studies, some of the compositions and behaviour of nickel catecholates.

Recently, hypervalent silicates namely *tris*(catecholato)silicates (SICAT) with different organic counter ions $(R^+)_2[Si(cat)_3]$, have been made in our laboratory. These show potential to incorporate transition metal ions in place of organic counter ion by a facile ion-exchange process. Using this strategy, we have now obtained different nickel containing *tris*(catecholato) silicates, viz. $[Ni(H_2O)_6][Si(cat)_3]$, $[Ni(NH_3)_6][Si(cat)_3]$, $[Ni(en)_3][Si(cat)_3]$, $[Ni(dien)_2][Si(cat)_3]$ etc. and have characterized them by analytical and spectroscopic methods.

Contrary to expected behaviour, some of these compounds are found to undergo a slow but definite colour change in the solid state at room temperature. By probing this, we find that through a ligand exchange process, the catechol moiety of the hypervalent anion has moved to the nickel centre signifying the preference of the 1,2-dihydroxybenzene moiety for the transition metal centre.