

Full Paper

Synthesis, Thermal, Electrical and Catalytic Studies of Some Transition Metal Polychelates of Bis-bidentate Schiff Base

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摘要 Polychelates of Mn(II), Fe(II), Co(II), Ni(II), Cu(II), Zn(II) and Cd(II) with the bis salen-type ligand derived from 4,4'-bis(salicylaldehyde-5)azo]biphenyl and 1,4-diaminobutane have been synthesized. All the polychelates have been characterized by elemental analysis, magnetic susceptibility measurements, IR, electronic spectra and thermogravimetric studies. All the complexes isolated in solid state are dark coloured and insoluble in water and common organic solvents. The ligand behaves as a bis-bidentate molecule coordinating through the phe-nolic oxygen and azomethine nitrogen atoms. The thermal decomposition of these metal complexes was investi-gated by thermogravimetric analysis and data have been analyzed for kinetic parameters using Broido equation. The solid-state electrical conductivity of the ligand and its polychelates in the form of compressed pellet was studied in the temperature range from 313 to 413 K. All the polychelates were found to show semiconducting nature. The Mn(II), Fe(II), Co(II) and Ni(II) polychelates have been assessed for the catalytic epoxidation of styrene.

关键词 [Schiff base](#) [polychelate](#) [TGA](#) [solid-state conductivity](#) [catalytic activity](#)

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