



INDIAN INSTITUTE OF TECHNOLOGY GUWAHATI
SHORT ABSTRACT OF THESIS

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Programme of Study : Ph.D.

Thesis Title: **Identification of Factors Governing Chiral Resolution of 1-Phenylethylamine and Few Amino alcohols Using Metallo-Organic Host**

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SHORT ABSTRACT

Chiral recognition, specially using non-covalent interactions, frequently occurs in biological systems. Separations of chiral amines and related compounds, many of which functions as neurotransmitter or used as drug, are industrially important. While the industrial separation is achieved through fractional crystallization and various form of chromatography, the understanding of the recognition process in the molecular level often limited to molecular modeling and related theoretical studies. Structural information on exact nature of host-guest interactions, either in commercial chiral selectors or biological system is hard to come by. Earlier, our group reported effective chiral separation of two simple amino alcohols using a binuclear Ni(II) complex as host. In this thesis, we have attempted to isolate and estimate the contribution of individual factors responsible for chiral recognition within that host by systematic changes in both the host and guest. In the process, we have not only unraveled the relative contribution of crystallization, solution equilibrium and the diastereomer solubility but also been successful in effective separation of several biogenic amino alcohols.