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## Synthesis, characterization and application of Chitosan based Schiff base-transition metal complexes (Mn,Cu,Co,Ni)

C. S. Thatte<sup>1</sup>, M. V. Rathnam<sup>1\*</sup> and M. S.S. Kumar<sup>2</sup>

1. Chemistry Research Laboratory, B.N.Bandodkar college of Science, Thane, Maharashtra, **INDIA**

2. Zulal Bhilajirao Patil College, Deopur-Dhule-424002, Maharashtra, **INDIA**

Email: [mvrathnam58@rediffmail.com](mailto:mvrathnam58@rediffmail.com), [dr.msskumar@rediffmail.com](mailto:dr.msskumar@rediffmail.com)

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### ABSTRACT\*

*Chitosan-triazene-eda-salen based Schiff base was prepared and complexed with manganese, copper, cobalt, nickel to form four new Schiff base metal complexes. These were used as heterogeneous catalysts for the mukaiyama epoxidation. Characterization of these catalysts was based on XRD, FT-IR, <sup>1</sup>HNMR elemental analysis and TGA. The metal loading on four catalysts was determined by ICP-AES. The catalytic activity of each prepared catalyst was studied on L-Carvone in the Mukaiyama epoxidation involving isobutyraldehyde as co-reagent. Substrates like  $\alpha$ -terpineol, trans/cis-stilbene,  $\alpha$ -methyl styrene, Limonene were also used for the epoxidation. Conversion and Selectivity for L-Carvone using each prepared catalyst were studied using gas chromatography. The effect of catalyst loading, solvent, temperature and co-reagent concentration was also investigated.*

**Keywords:** Aerobic oxidation, L-Carvone, Chitosan-triazene-ethylenediamine-salen-Co, Isobutyraldehyde.

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