INDIAN INSTITUTE OF TECHNOLOGY GUWAHATI
SHORT ABSTRACT OF THESIS

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Thesis Title: Studies on reactivities of amino acid Schiff bases and formation of Cu(II) multinuclear complexes

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SHORT ABSTRACT

The thesis is about the studies on reactivity of amino acid Schiff bases and formation of Cu(II) multinuclear complexes. The reactivities which are observed with the amino acid Schiff base ligands are racemization, C-C cleavage and nucleophilic addition. Racemization is observed in salicylidene-L-alaninate and salicylidene-L-serinate Schiff base ligands. C-C cleavage is observed in salicylidene-L-threoninate Schifff base ligand. C-C bond formation through nucleophilic addition is observed between the salicylideneglycinate Schiff base ligands. Along with the observed reactivities alanine and serine Schiff base ligands forms a meso-chiral Cu(II) hexanuclear cage upon complexation with Cu(II) salt. Cu(II) hexanuclear cage of glycine Schiff base ligand is obtained from the C-C cleavage of threonine side arm upon complexation with Cu(II). Nucleophilic addition between the salicylideneglycinate Schiff base ligands give a new organic molecule in insitu which forms a Cu(II) complex within the reaction conditions. Both Solid (structural) and solution state evidences for the observed reactivities are presented.