

# COBALT CATALYZED CO<sub>2</sub> INCORPORATION INTO CYCLIC CARBONATES

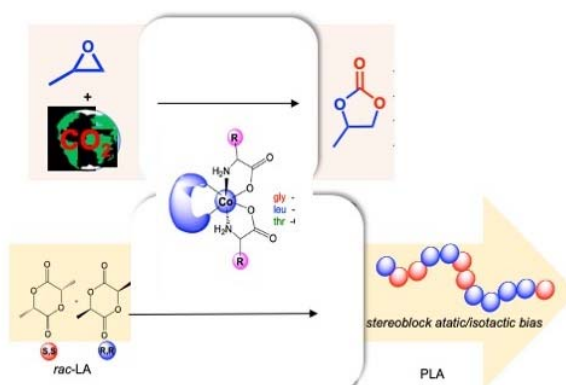
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A series of complexes of the type *trans* (*N*)-[Co(III/II)(aa)<sub>2</sub>(bipy)]Cl proved capable catalysts in ring opening polymerization synthesis of polylactic acid, and gave an outstanding performance for the coupling reaction of epoxides and CO<sub>2</sub> [1, 2].

The catalysts demonstrated cooperative effects where the metal center and the complex outer coordination sphere properties assists to improve the catalytic activity of the system. Temperature, cocatalyst, CO<sub>2</sub> pressure, and catalyst loading effects were explored. Finally preliminary substrate scope was explored.

The system showed interesting properties associated with the metal oxidation state and selectivity towards types of reactions occurring. A facile synthetic route yielded the desired compounds in good yields. The complexes crystallize with the Co center in a pseudo-octahedral geometry, and with the N-atoms of the amino acid ligands in a *trans* position.



The synthesis of the complexes, their catalytic abilities and product properties will be discussed.

[1] A. Castro-Ruiz, L. Grefe, E. Mejía, S.G. Suman, Dalton Transactions, 52 (2023) 4186-4199.

[2] A. Castro Ruiz, K.K. Damodaran, S.G. Suman, RSC Advances, 11 (2021) 16326-16338.