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Synthesis of coordination polymers for photochemistry reactions

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Topochemistry proposes principles and postulates for cycloaddition reactions, summarizing that these reactions are favored when olefinic groups are located in antiparallel positions between 3.8 and 4.2 Å [1]. Although studies on organic crystals are widespread, research on coordination polymers is lacking. This work involves the synthesis of multimetallic templates using first-row transition metals (manganese, copper, cobalt, nickel, zinc) and the organic ligand trans-1,2-bis(4-pyridyl)ethylene, also known as bpe, and different multicarboxylate ligands with different flexibility. The bpe is the photo-ligand, whereas the carboxylate acid is responsible for the polymeric expansion. These reactions are the transformations from single crystal to single-crystal in the system by exposure to multiple light sources [2]. This is a reactive stimulus phenomenon and can be reverted. These crystals can be availed in an array of areas such as electrical conductivity, catalysis, adsorption, and sensors.

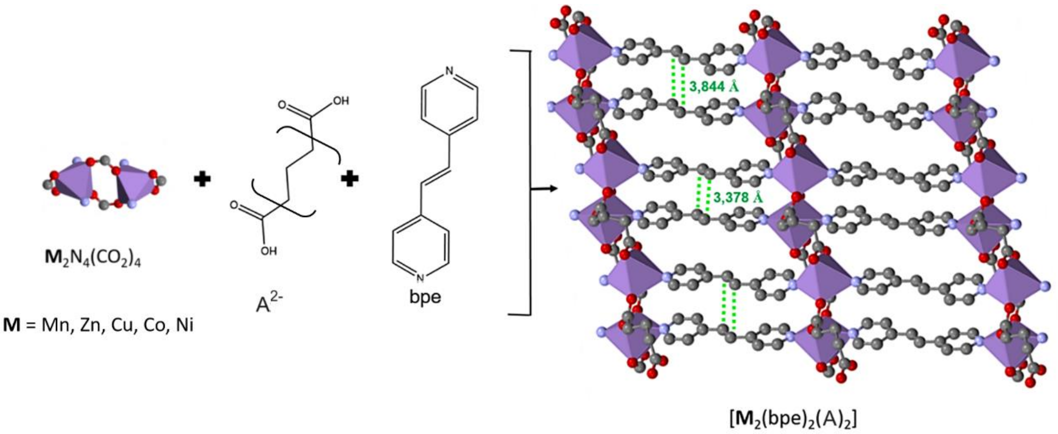

Figure: Schematic representation of the synthesis of templates.

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