

Abstract

In this study, facile solvothermal synthesis of four organic-inorganic hybrids was executed using different O and N-donating ligands and transition & alkaline earth metals-based nodes. The crystalline coordination products were obtained efficiently in a short reaction time of 4 hours followed by slow cooling of reaction mixture for another 6 hours. The synthesized compounds were characterized by FTIR, Elemental analysis and X-Ray Diffraction spectroscopy. The characterization data supported the synthesis of organic-inorganic hybrid materials. The hypothetical structures of the synthesized compounds were also devised using Chemdraw which found to be in well accordance with the elemental analysis results. The photocatalytic degradation of compounds was also evaluated against methylene blue dye. The findings revealed that compounds ZM-1 to 4 showed good to average photocatalytic activity ranging from 73% to 41% degradation of methylene blue. This photocatalytic degradation of dye was recorded in sunlight without the assistance of any external oxidant that further enhanced the practicability of these compounds.