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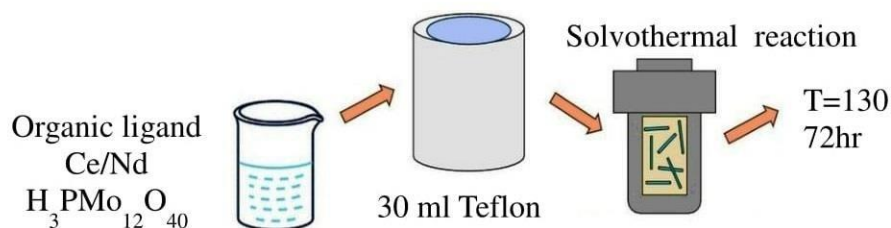
## Hydrothermal syntheses of two inorganic–organic hybrids based on highly preorganized 2,9-bis(hydroxymethyl)-1,10-phenanthroline ligand and Keggin type polyoxometalates

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### ABSTRACT

Polyoxometalates (POMs) as an important inorganic ligands are polynuclear metal–oxygen clusters with excellent electronic versatility and structural diversity. Keggin type POMs are one of the most fascinating groups because of their distinctive structures and applications in numerous fields such as catalysis, magnetism, materials science and medicine. It is well known that combination of POMs with metal–organic complexes provides novel multifunctional inorganic–organic hybrids that combine the features of both substructures. For attaining novel hybrids, 2,9-bis(hydroxymethyl)-1,10-phenanthroline (PDALC) is a good choice as an organic ligand. Because of its highly preorganized property that does not change its conformation upon complexation to a metal ion. This work reports hydrothermally syntheses of two hybrid compounds containing lanthanoids, phosphomolybdate,  $[\text{PMo}_{12}\text{O}_{40}]^{3-}$ , anions and PDALD ligand with 1: 0.5: 1 molar ratios. The hybrids were characterized by physico-chemical approaches such as elemental analysis (CHN), FTIR spectroscopy and electron diffraction spectroscopy (EDS).



**Keywords:** Polyoxometalates, Keggin, Preorganized ligands.

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