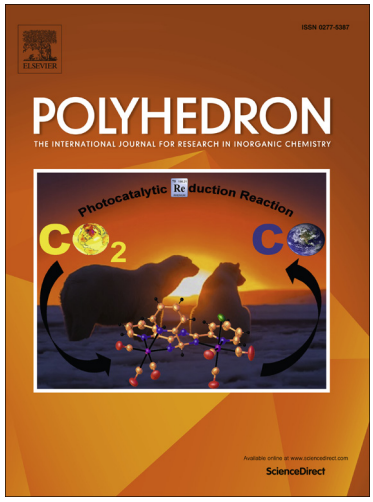

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Influence of co-ligands in synthesis, photoluminescence behavior and catalytic activities of zinc complexes of 2-((E)-((pyridin-2-yl)methylimino)methyl)phenol

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ABSTRACT

Four new zinc(II) complexes of a tridentate Schiff base ligand 2-((E)-((pyridin-2-yl)methylimino)methyl)phenol (HL), namely $[Zn_2L_2Cl_2]$ (**1**); $[Zn_2L_2Br_2]$ (**2**); [ZnL(SCN)(MeOH)] (**3**) and $[Zn_2L(OAc)_3(MeOH)]$ (**4**) have been synthesized with the view to investigate the role of co-ligands in controlling the structural diversity, photoluminescence property and catalytic activities. The complexes have been characterized through common physicochemical techniques as well as by X-ray single crystal structural analysis. All of them display interesting co-ligands mediated photoluminescence property the origin of which may be attributed due to ligand to metal charge transfer (LMCT) and the order of photoluminescence efficiency is **3>4>1~2**. Catecholase and phosphatase activities of the complexes have been investigated in DMF medium using 3,5-di-*tert*-butylcatechol (3,5-DTBC) and 4-nitrophenylphosphate as substrates respectively. Co-ligands have prominent role on phosphatase activity of the complexes where the order of activity in terms of k_{cat} value is **4>1>2>3**.