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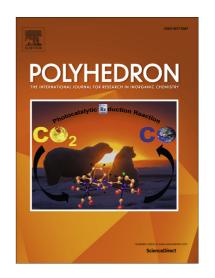
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## ACCEPTED MANUSCRIPT

#### "REVISED"

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-2yl)methylimino)methyl)phenol **(1)**; (HL), namely  $[Zn_2L_2Cl_2]$  $[Zn_2L_2Br_2]$ **(2)**; [ZnL(SCN)(MeOH)] (3) and [Zn<sub>2</sub>L(OAc)<sub>3</sub>(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 4nitrophenylphosphate 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.

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