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Title:	Synthesis, spectroscopic and structural characterization of Co(II), Ni(II) and Cu(II) complexes of substituted 2-pyridyl amine based [N,N] chelating ligand
Authors:	Prashanth, B. (/jspui/browse?type=author&value=Prashanth%2C+B.) Karanam, M. (/jspui/browse?type=author&value=Karanam%2C+M.) Choudhury, A.R. (/jspui/browse?type=author&value=Choudhury%2C+A.R.) Singh, Sanjay (/jspui/browse?type=author&value=Singh%2C+Sanjay)
Keywords:	Cobalt complex Copper complex Hydrogen bonding
Issue Date:	2012
Publisher:	Elsevier B.V.
Citation:	Polyhedron, 47 (1), pp. 112-117.
Abstract:	The reaction of N-benzylaminopyridine with the imidoylchloride of N-(2,6-iPr ₂ C ₆ H ₃)acetamide in the presence of Et ₃ N affords a new neutral [N,N] chelating ligand, (PhCH ₂)N(2-pyridyl)C((Me)(N-2,6-iPr ₂ C ₆ H ₃)) (L). The reaction of equimolar quantities of L with Cu(NO ₃) ₂ , CuCl ₂ and NiBr ₂ , respectively, in DCM, acetonitrile and DME yields the corresponding mononuclear complexes L·Cu(NO ₃) ₂ (1), L·CuCl ₂ (2) and L·NiBr ₂ (3). Whereas, the reaction of L with CoCl ₂ ·6H ₂ O leads to the formation of [HL·CoCl ₃] (4) with pyridine nitrogen coordinated to cobalt. Solid state structure of L and compounds 1-4 have been investigated by single crystal X-ray structural analysis. The ligand L shows the E-anti arrangement in the solid state and its mononuclear complex 1 shows six coordinated Cu in a quasi square planar geometry with two long distanced donors; complexes 2 and 3 show distorted tetrahedral arrangement of the substituents around metal ions. Interestingly, the solid state structure of complex 4 reveals C-H...Cl intra-molecular hydrogen bonding and N-H...Cl and C-H...Cl inter-molecular hydrogen bonds. These hydrogen bonding interactions in complex 4 facilitate the formation of an extended 2D network structure.
URI:	http://www.sciencedirect.com/science/article/pii/S0277538712005931 (http://www.sciencedirect.com/science/article/pii/S0277538712005931) http://dx.doi.org/10.1016/j.poly.2012.08.019 (http://dx.doi.org/10.1016/j.poly.2012.08.019)
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