

## X-ray structure and magnetic and fluorescence characteristics of new Cu(II) complexes with Schiff bases derived from 2-(2-aminoethyl)pyridine and 2-hydroxy-1-naphthaldehyde : morphology and fluorescence of their thin films.

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Cu(II) complexes with tridentate Schiff bases derived from 2-(2-aminoethyl)pyridine and 2-hydroxy-1-naphthaldehyde and  $\text{COO}^-$ ,  $\text{Cl}^-$  and  $\text{NO}_3^-$  as ligands were obtained and characterized by crystal and molecular, spectroscopic (UV-Vis, fluorescence, IR, and EPR), magnetic and thermal methods. The X-ray crystal structure analysis revealed a distorted square planar geometry for  $[\text{Cu(II)(PEMN)CH}_3\text{COO}]\text{CHCl}_3$ , **1**, and  $[\text{Cu(II)(PEMN)Cl}]$ , **2**, and a distorted square-pyramidal geometry for  $[\text{Cu(II)(PEMN)NO}_3]$ , **3**, corresponding to the values of EPR  $g$ -matrix diagonal components. The copper(II) complexes exhibited fluorescence in solution in the range of 370–410 nm. Thin layers of the studied copper(II) complexes were deposited on Si(111) by a spin coating method and studied by scanning electron microscopy (SEM/EDS), atomic force microscopy (AFM) and fluorescence spectroscopy. For copper(II) layers (**2**/Si), the most intense fluorescence band from an intraligand and a d–d transition between 490 and 550 nm was observed.

### Adres publiczny

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### Strona internetowa wydawcy

<https://www.rsc.org/>

