



Preparation and crystal structure of a mixed metal assembly $[\text{Ni}(\text{phen})_3][\text{Cu}(\text{H}_{-1}\text{pap})]_2(\text{NO}_3) \cdot 8\text{H}_2\text{O}$ featuring octohedral cationic and square-planar anionic modules.

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The new mixed metal assembly $[\text{Ni}(\text{phen})_3][\text{Cu}(\text{H}_{-1}\text{pap})]_2(\text{NO}_3) \cdot 8\text{H}_2\text{O}$ ($\text{H}_2\text{pap} = \text{CH}_3\text{-C(=NOH)-C(O-)-NH-(CH}_2\text{)}_3\text{-NH-C(O-)-C(=NOH)-CH}_3$) was obtained by co-crystallisation of $[\text{Li}(\text{H}_2\text{O})_4][\text{Cu}(\text{H}_{-1}\text{pap})] \cdot 2\text{H}_2\text{O}$ (1) and tris(1,10-phenanthroline)nickel(II) nitrate and studied by means of X-ray crystallography (triclinic, space group P1, $a = 13.471(3)$, $b = 13.641(3)$, $c = 15.401(3)$ Å, $\alpha = 108.21(3)$, $\beta = 97.73(3)$, $\gamma = 107.74(3)^\circ$, $V = 2476.6(9)$ Å³, $Z = 2$, $R_1 = 0.0677$ for 4672 unique reflections with $I > 2\sigma(I)$). The assembly indicates a network structure and consists of isolated cationic and anionic modules (octahedral $[\text{Ni}(\text{phen})_3]^{2+}$ and square-planar $[\text{Cu}(\text{H}_{-1}\text{pap})]^-$), non-coordinated nitrate anions and solvating water molecules. The elements of the crystal structure are linked by interactions of different types: by an extended system of H bonds, stacking interactions between aromatic rings, long apical Cu-N contacts and specific π - π interaction between a deprotonated oxime group of the complex anion and a phenanthroline ligand: Oximes; Phenanthroline

Adres publiczny

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