Two new coordination compounds of Co^{II} built upon pyrazine-2,3-dicarboxylic acid: Syntheses, characterizations, and crystal structures

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Two new coordination compounds of Co^{II} based on pyrazin-2,3-dicarboxylic acid formulated as $(Base)_2[Co^{II}(pyzdc)_2(H_2O)_2]\cdot 6H_2O$, (where Base = 2-amino-4-methyl pyridinium (**1**); 2-amino-4-methyl pyrimidin-3-ium (**2**); and $pyzdcH_2$ = pyrazin-2,3-dicarboxylic acid), have been synthesized and structurally characterized by elemental analyses, IR spectroscopy and single crystal X-ray diffraction. These two title compounds are iso-structure. In **1** and **2**, the metal center have distorted octahedral coordination geometries and chelated by two N atoms of the pyrazine ring, two monodentate carboxylate O atoms, and two O atoms from two coordinated water molecules, forming a distorted octahedral N_2CoO_4. Through hydrogen bonding (such as O−H···O and N−H···O) and/or slipped or offset π-π stacking interactions, 3D supramolecular networks are constructed in these complexes. So the hydrogen bond interactions play an important role in sustaining of the supramolecular solid-state architectures in compound **1** and **2**.

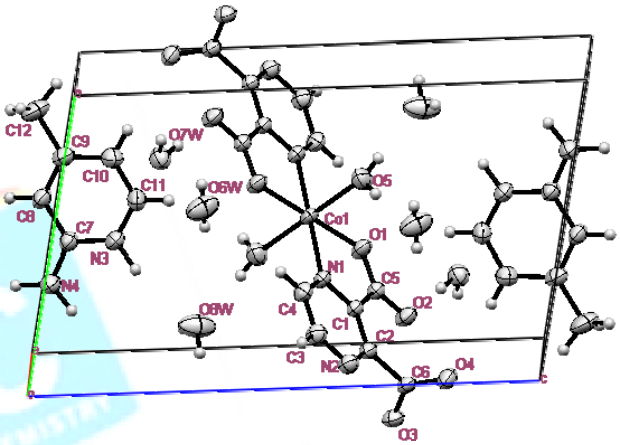

Fig. 1. The molecular structure of **1** and atom-labeling scheme for **1** in unit cell, with displacement ellipsoids drawn at the 50% probability level.