MS18-P06 | SYNTHESIS AND CRYSTAL CHARACTERIZATION OF A NEW LAYERED ACIDIC DIPHOSPHATE METALLATE

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The hydrated hydrazinium hemicobalt hydrogenodiphosphate $[(H_2O)_2Co_2(N_2H_5)_2(HP_2O_7)_2]$ has been synthesized using wet chemistry. The structure was obtained by single crystal X-ray diffraction. It crystallizes in the triclinic system (S.G: P-1). The crystal packing consists in a three dimensional network made by layers parallel to bc plane of CoO6/CoN2O4 octahedra sharing four vertices with HP_2O_7 double tetrahedra. The protonated hydrazine molecules interact with the inorganic moiety via covalent bonding and also through establishing hydrogen bonds on N atoms. The diphosphate group shows bent eclipsed conformation which was confirmed by infrared spectroscopy. The dehydrogenation of the crystal structure takes place into one step corresponding to the departure of hydrazine ligands and water molecules.