

[Cu(H₂btec)(bipy)]_n: A novel metal organic framework (MOF) as heterogeneous catalyst for the oxidation of olefins

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A new extended metal-organic framework [Cu(H₂btec)(bipy)]_n (1) (H₂btec= 1,2,4,5-benzenetetracarboxylic acid; bipy= 2,2'-bipyridine) has been hydrothermally synthesized. Violet crystals are formed in a monoclinic system with a space group C2/c; a = 10.1810(18) Å, b = 14.4360(18) Å, c = 12.894(3) Å, β = 112.94(3)°. In the title compound 1 each Cu(II) centre has a distorted square planar environment, completed by two N atoms from one bipy ligand and two O atoms belonging to two dihydrogen benzene-1,2,4,5-tetracarboxylate anions (H₂btec²⁻). The {Cu(bipy)}₂₊ moieties are bridged by H₂btec²⁻ anions to form an infinite one-dimensional coordination polymer with a zig-zag chain structure along the c axis. A double-chain structure is formed by hydrogen bonds between adjacent zig-zag chains. There are also π-π stacking interactions between the bipy ligands, with an average distance of 3.62 Å resulting in a two-