

**Structure and properties of 4,4'-bipyridine-2,2',6,6'-tetracarboxylic acid and its iron(II)
and cobalt(II) complexes.**

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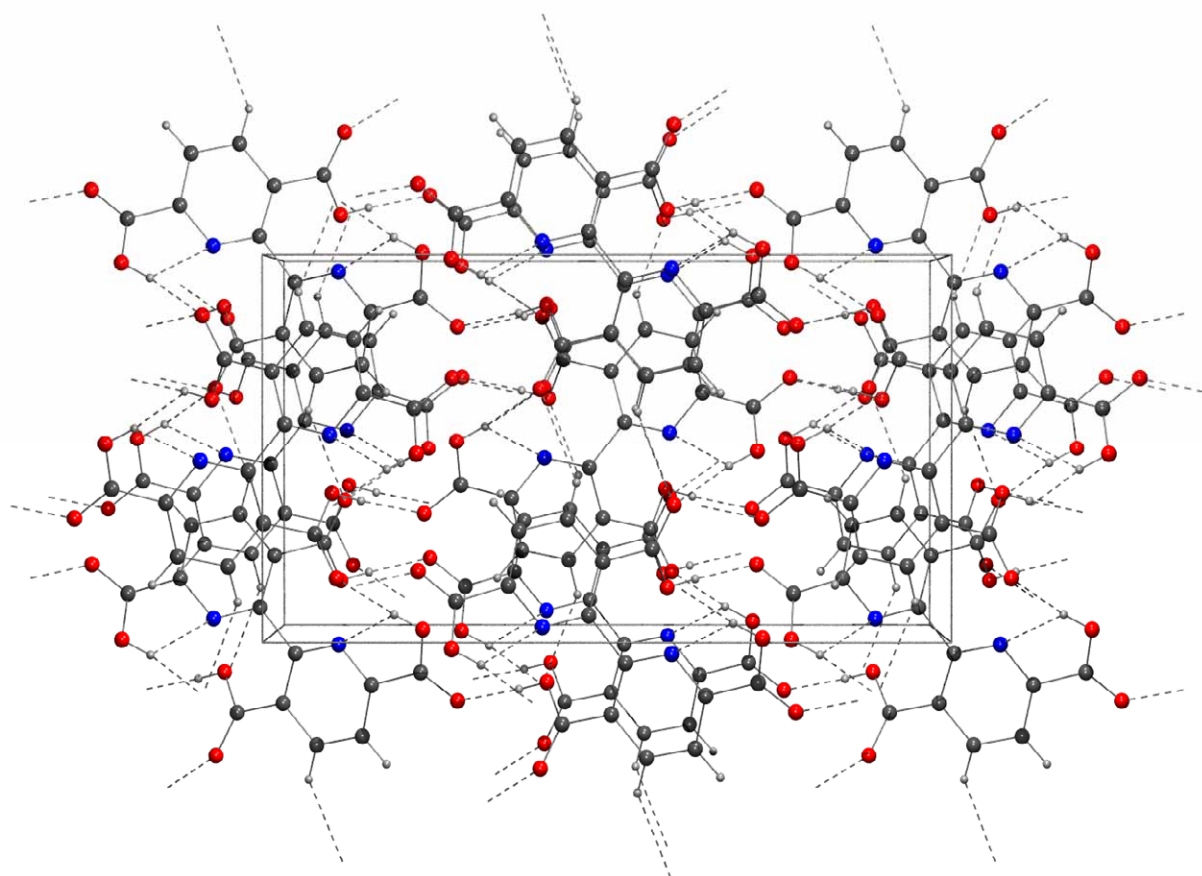


Figure 1. Packing diagram of the unit cell along the c direction for compound bptcH₄ (**1**).

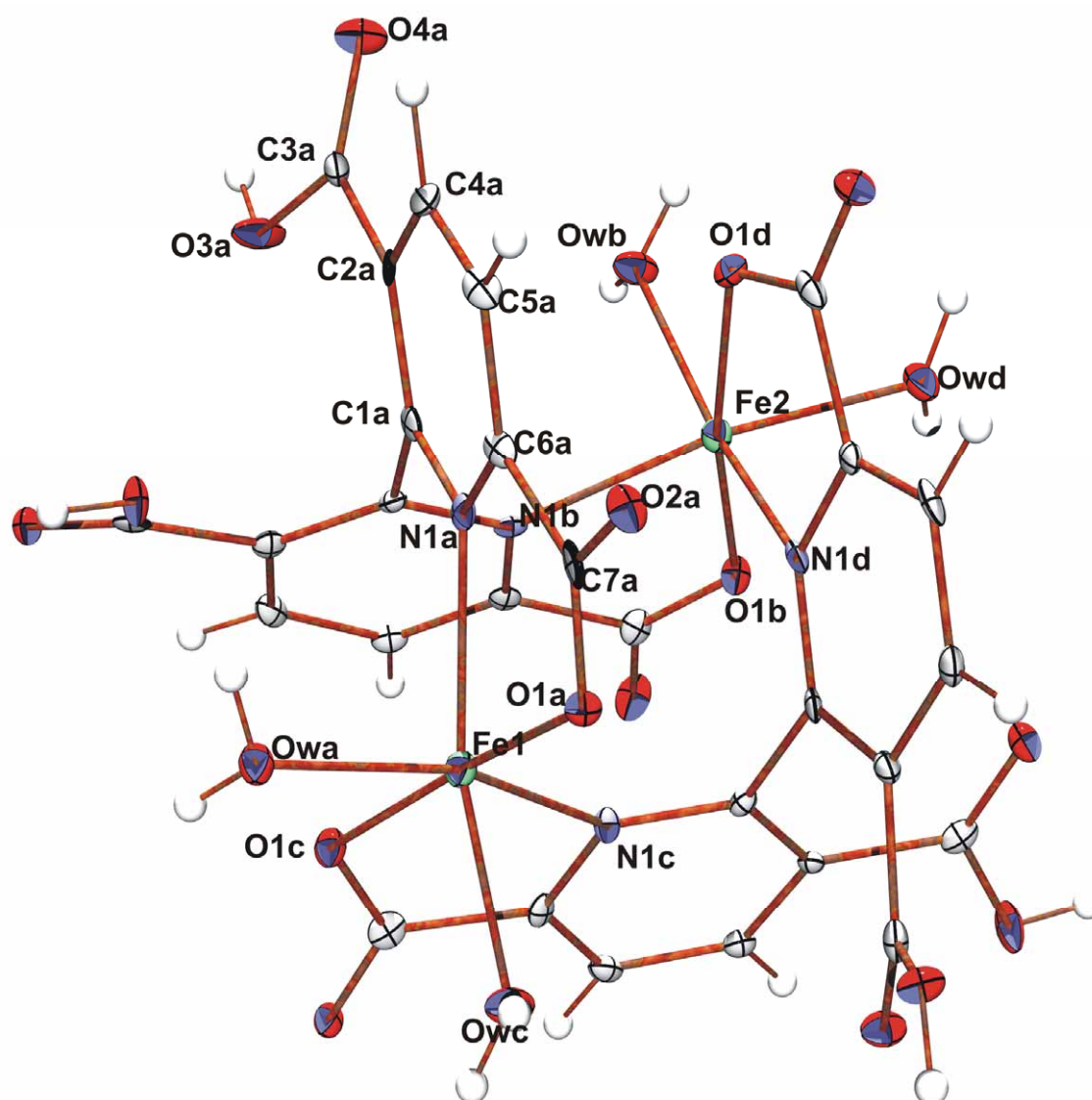


Figure 2. ORTEP representation of complex
 $[\text{Fe}_2(\text{C}_{10}\text{H}_4\text{N}_2(\text{COO})_2(\text{COOH})_2(\text{H}_2\text{O})_4)] \cdot 4.74\text{H}_2\text{O}$ (**2**);

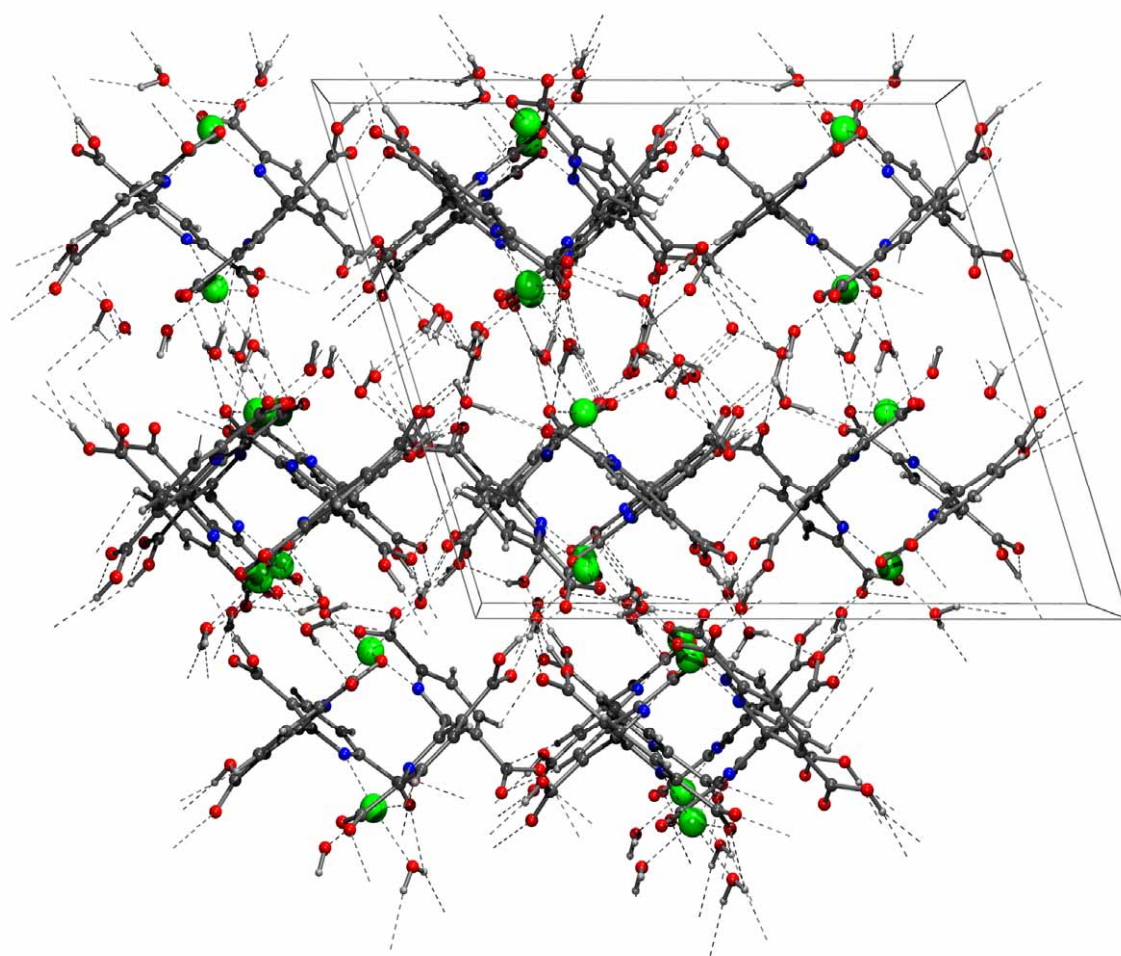


Figure 3. Packing diagram of the unit cell along the b direction showing hydrogen bonds for complex $[\text{Fe}_2(\text{C}_{10}\text{H}_4\text{N}_2(\text{COO})_2(\text{COOH})_2)_2(\text{H}_2\text{O})_4] \cdot 4.74\text{H}_2\text{O}$ (**2**) (Fe - green, N - blue, O - red, C - dark-grey, H - grey)

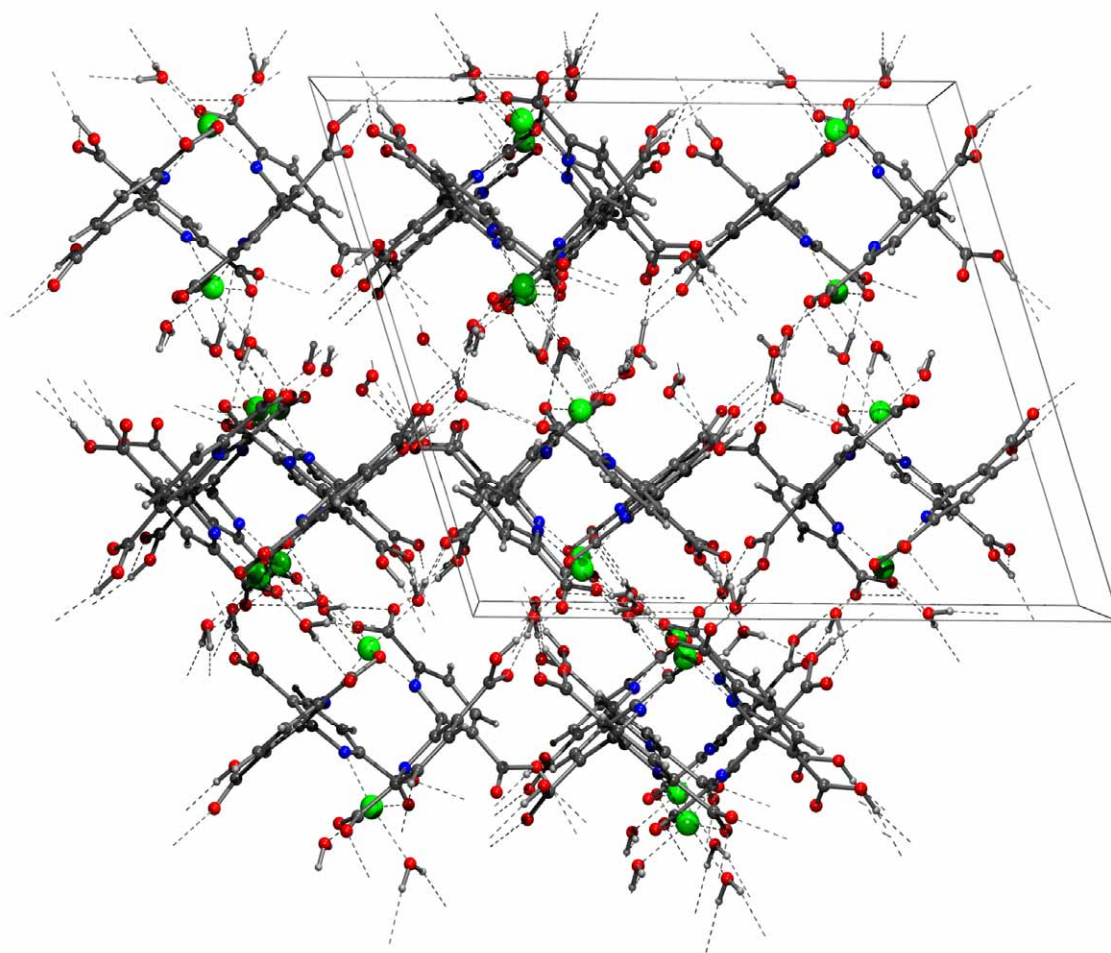


Figure 4. Packing diagram of the unit cell along the b direction showing hydrogen bonds for complex $[\text{Co}_2(\text{C}_{10}\text{H}_4\text{N}_2(\text{COO})_2(\text{COOH})_2)(\text{H}_2\text{O})_4] \cdot 4.5\text{H}_2\text{O}$ (**3**) (Co - green, N - blue, O - red, C - dark-grey, H - grey).

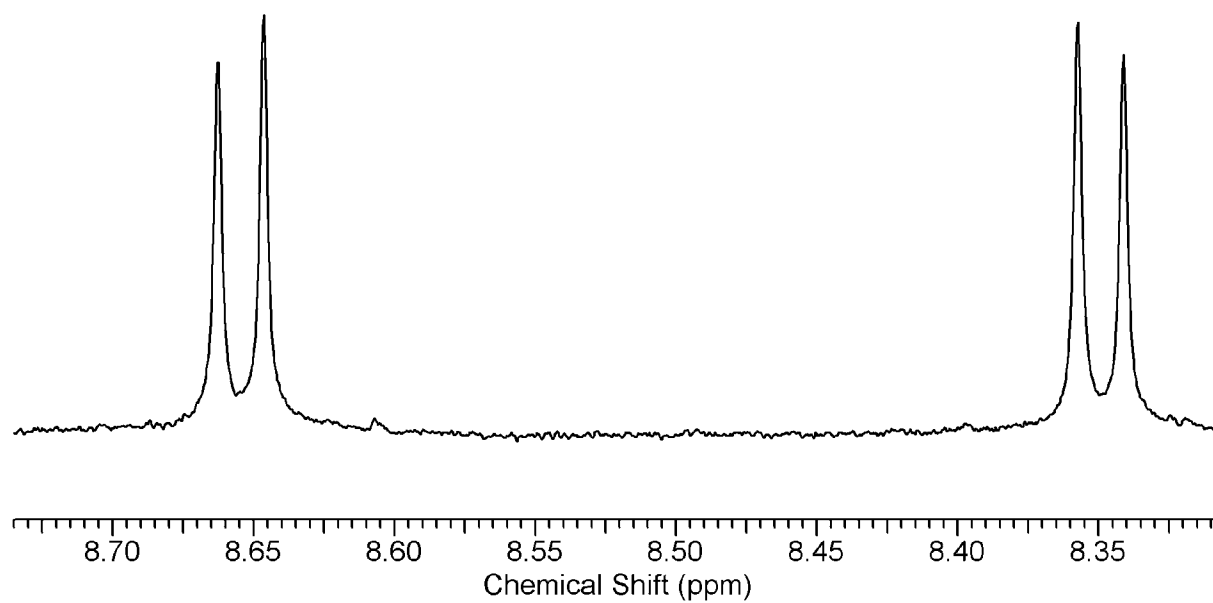


Figure 5. NMR spectrum of bptcH₄ (**1**) in D₂O.

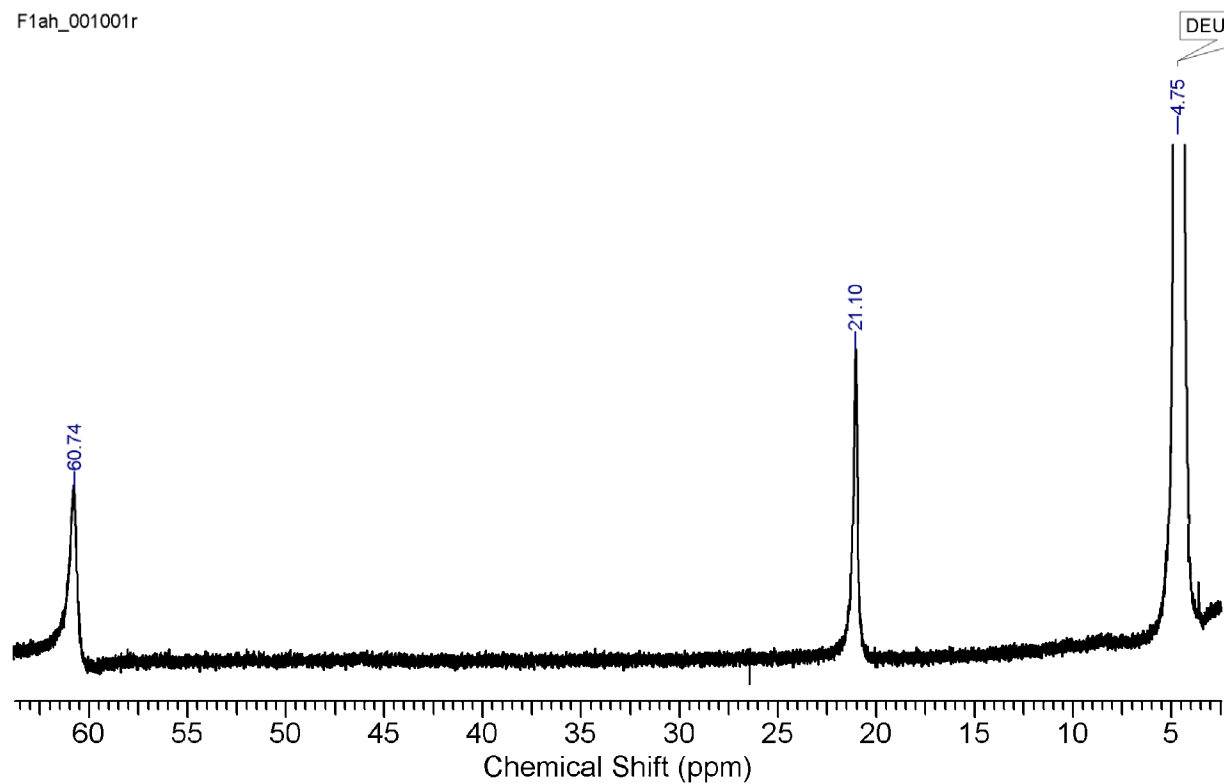


Figure 6. NMR spectrum of [Fe₂(C₁₀H₄N₂(COO)₂(COOH)₂)₂(H₂O)₄]·4.74H₂O (**2**) in D₂O.

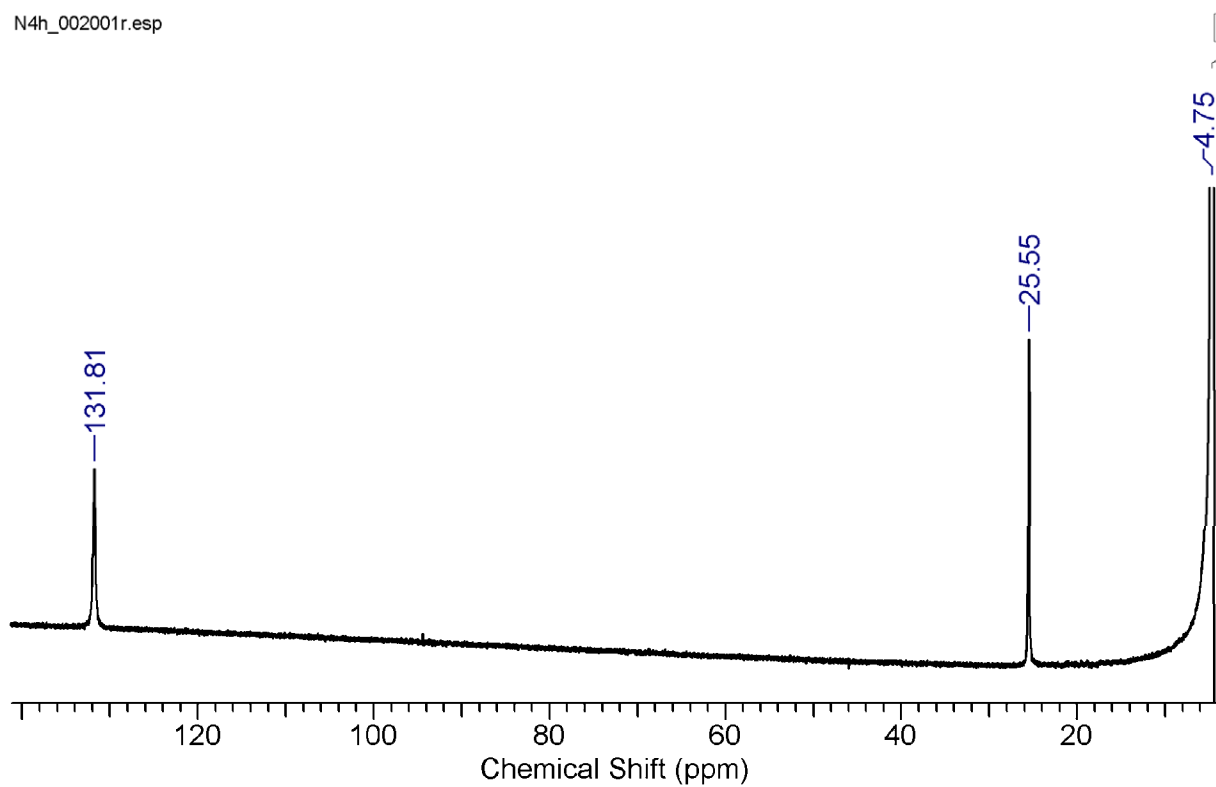


Figure 7. NMR spectrum of $[\text{Co}_2(\text{C}_{10}\text{H}_4\text{N}_2(\text{COO})_2(\text{COOH})_2)_2(\text{H}_2\text{O})_4] \cdot 4.5\text{H}_2\text{O}$ (**3**) in D_2O .

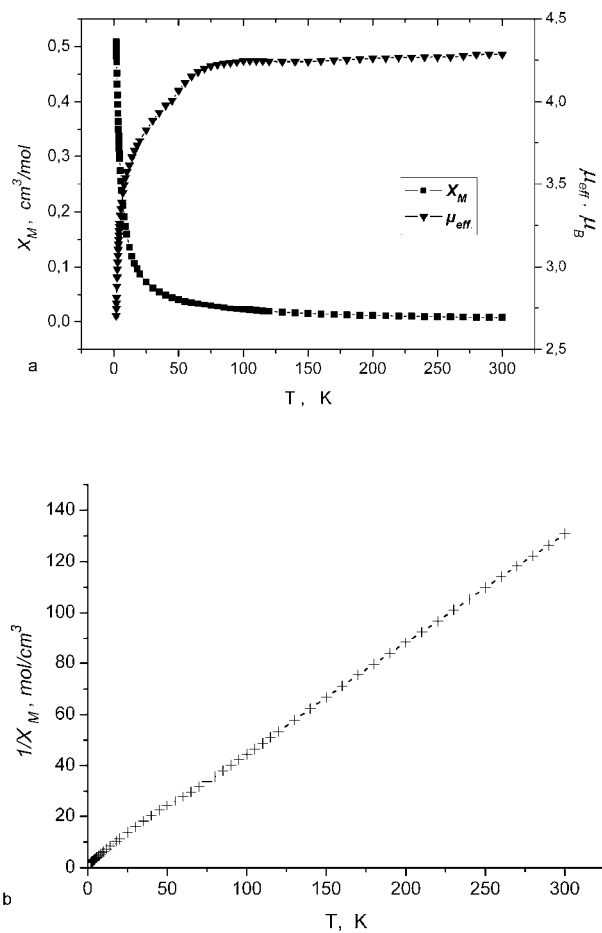


Figure 8. Dependences of magnetic susceptibility and magnetic moment per cobalt atom (a) and $1/\chi_M$ (b) on temperature for complex $[\text{Co}_2(\text{C}_{10}\text{H}_4\text{N}_2(\text{COO})_2(\text{COOH})_2)_2(\text{H}_2\text{O})_4] \cdot 4.5\text{H}_2\text{O}$ (3).