SYNTHESIS AND X-RAY CHARACTERISATION OF A NEW MIXED-VALENCE TRINUCLEAR IRON CLUSTER

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Abstract. This paper reports on the synthesis of a new trinuclear homometallic mixed-valence iron carboxylate cluster with furan-2-carboxylic acid. The complex with the formula [Fe_{III}Fe_{II}O(C_4H_4OOCOO)_6(H_2O)_3]·0.5CH_3CN·2.25H_2O was characterized by X-ray analysis that revealed that the compound crystalizes in the triclinic centrosymmetric group P-1, with the following unit cell parameters: a = 10.2758(6) Å, b = 11.5991(9) Å, c = 19.7349(15) Å, α = 105.060(7)°, β = 94.216(6)°, γ = 101.662(6)°.

Keywords: iron cluster, mixed valence, X-ray analysis, µ_3-oxo, crystal structure, hydrogen bond.

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