Synthesis, crystal structure and magnetic properties of cyanide bridged 2D coordination polymers $[Mn(salen)]_2[Fe(CN)_5NO]$ and $[Mn(salen)]_2[Ni(CN)_4]$.

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The synthesis, crystal structure and magnetic properties of cyanide bridged 2D coordination complexes [Mn(salen)]2[Fe(CN)5NO] 1 and [Mn(salen)]2[Ni(CN)4] 2 are reported. Complex 1 crystallizes in the orthorhombic space group Ccca(a = 20.715 (4) Å, b = 20.718 (4) Å, c= 17.131 (3) Å, α = β = γ = 90°, Z = 8). Its structure displays an extended 2D neutral network formed by cyclic tetrameric [-Mn-NC-Fe-CN-]4 units. Complex 2 also crystallizes in the orthorhombic space group Ccca (a = 20.390 (4) Å, b = 20.701 (4) Å, c = 16.779 (3) Å, α = β = γ = 90°, Z = 8) and shows an extended 2D neutral network formed by cyclic tetrameric [-Mn-NC-Ni-CN-] 4 units. The variable temperature magnetic susceptibility studies for both the complexes have been carried out in the temperature range 2-300 K which shows very weak antiferromagnetic interaction mediated by diamagnetic [Fe(CN)5NO]2- and Ni(CN)42- ions.