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Electronic Supporting Information

Mechanochemical Synthesis, Luminescent and Magnetic Properties of Lanthanide Benzene-1,4-Dicarboxylate Coordination Polymers $(Ln_{0.5}Gd_{0.5})_2$ (1,4-BDC)$_3$$(H_2O)_4$; Ln = Sm, Eu, Tb

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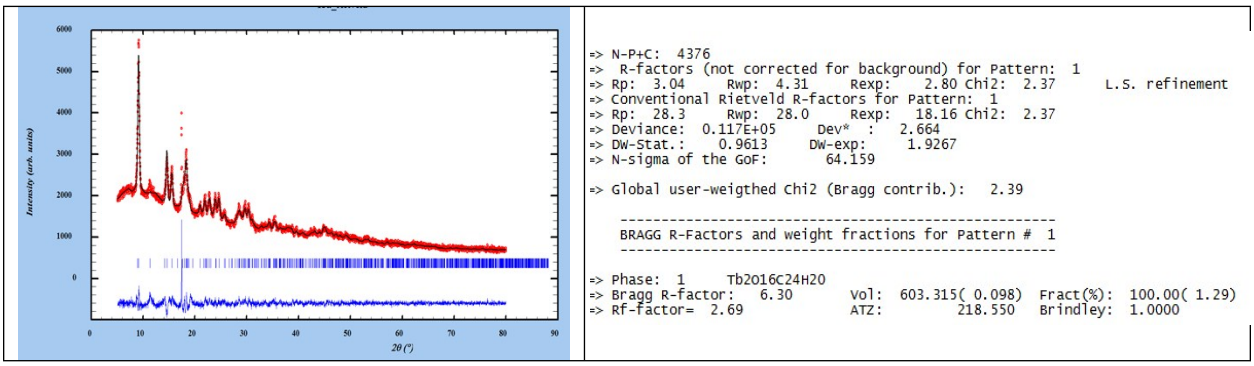
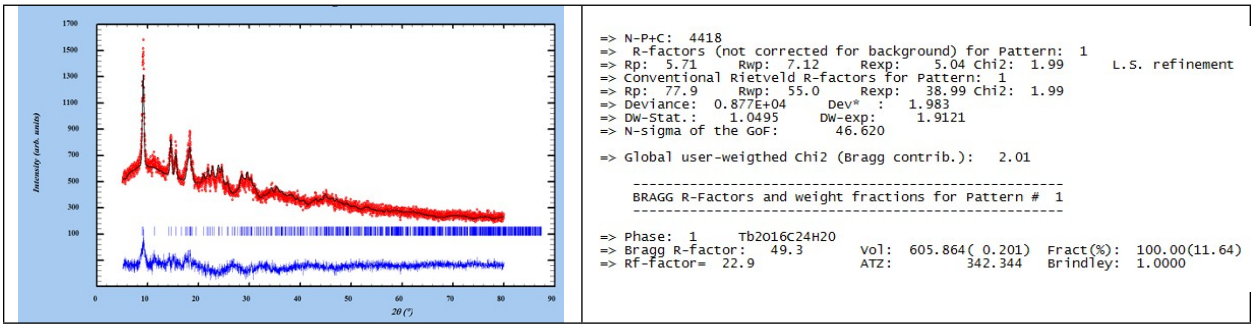
$(Tb_{0.5}Gd_{0.5})_2(BDC)_3(H_2O)_4$



$(Eu_{0.5}Gd_{0.5})_2(BDC)_3(H_2O)_4$



$(Sm_{0.5}Gd_{0.5})_2(BDC)_3(H_2O)_4$

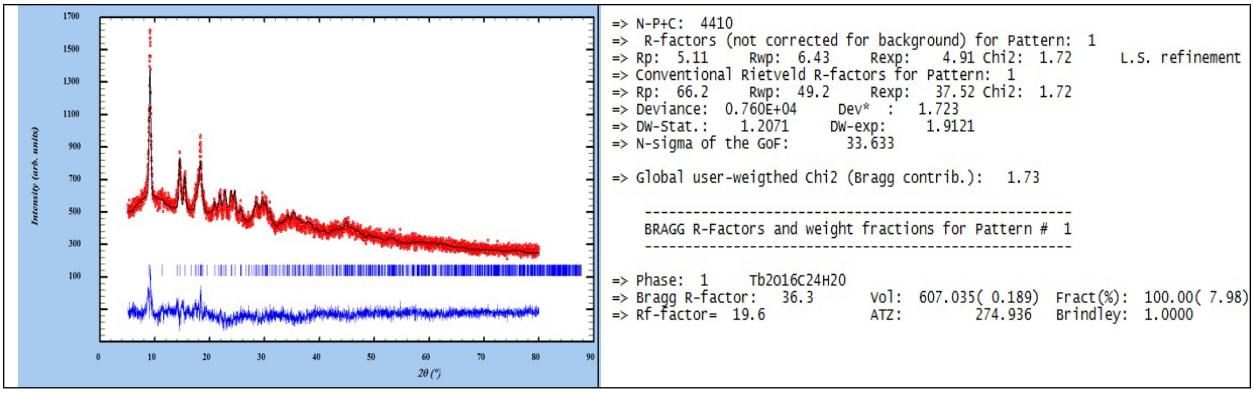


Figure S1. Experimental (red), fitted (black) and difference (blue) plots obtained from Rietveld refinement for $(Ln_{0.5}Gd_{0.5})_2(1,4\text{-}BDC)_3(H_2O)_4$ Ln=Eu, Tb, Sm samples, R factors and χ^2 values for the fit for each sample.

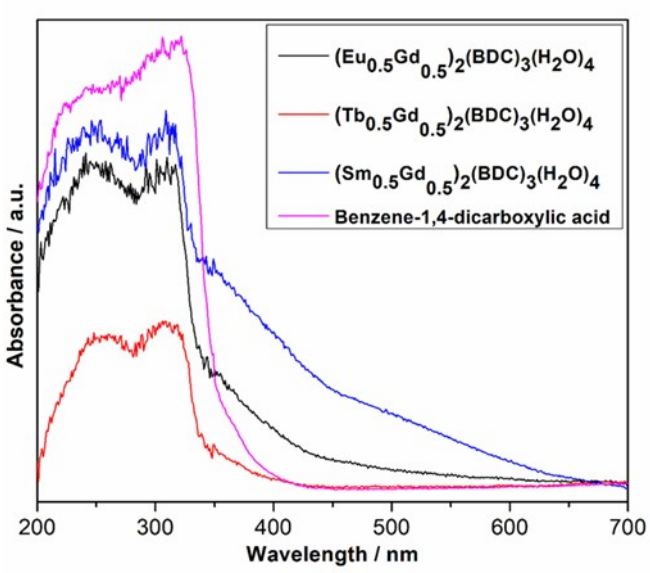


Figure S2. UV absorption spectra of $(Ln_{0.5}Gd_{0.5})_2(BDC)_3(H_2O)_4$ Ln = Eu, Tb, Sm and benzene-1,4 dicarboxylic acid.

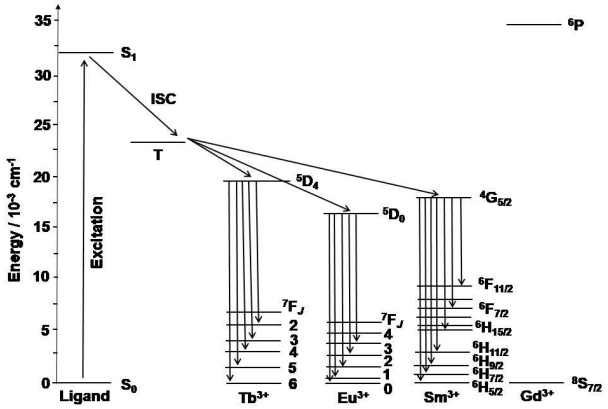


Figure S3. Schematic energy level diagram and intramolecular energy transfer process: S_0, singlet ground; S1, first excited singlet state; T, excited triplet state, ISC: intersystem crossing.

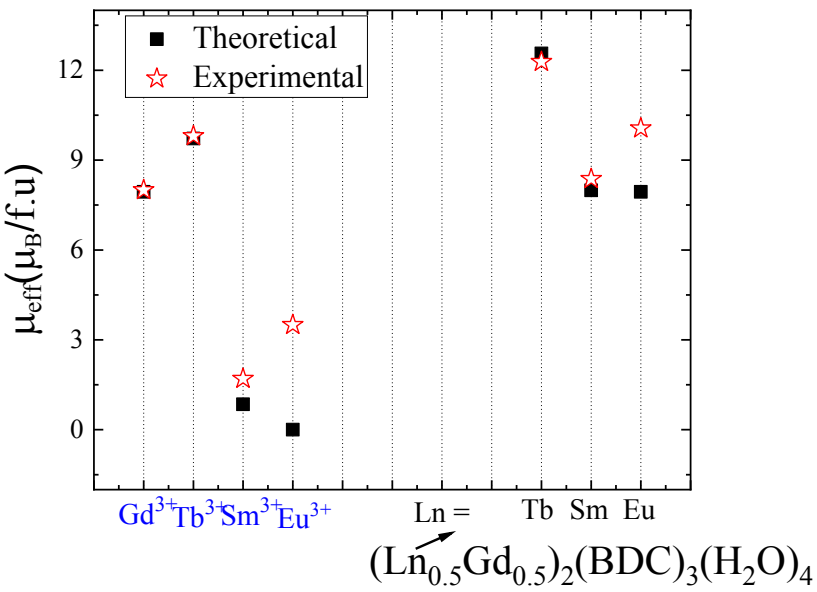


Figure S4. A comparison of experimental and theoretical values of effective paramagnetic moments showing larger discrepancies for Eu. (individual Ln atom values taken from "Rare Earth Magnetism: Structures and Excitations" by Jens Jensen and Allan R. Mackintosh, pp 57 Clarendon Press OXFORD 1991, and Ln3+ values taken from Carlin, Magnetochemistry, Springer, N.Y., 1986 Chapter 9.)