

Electronic Supplementary Information

Fine Structural and Morphological Control of Rare Earth Fluorides REF₃ (RE = La-Lu, Y) Nano/Microcrystals: Microwave-Assisted Ionic Liquid Synthesis, Magnetic and Luminescent Properties

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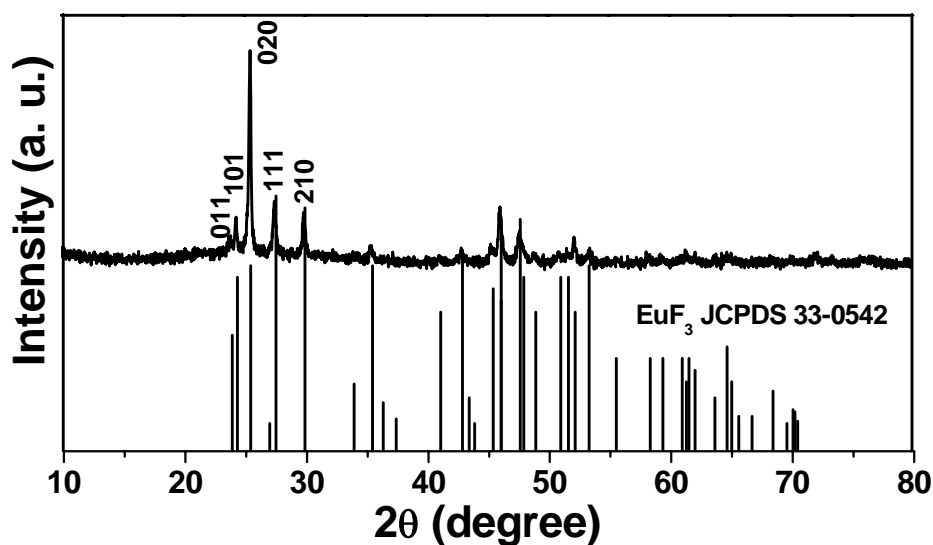


Fig. S1 XRD pattern of as-obtained EuF₃ and its standard card (JCPDS 33-0542).

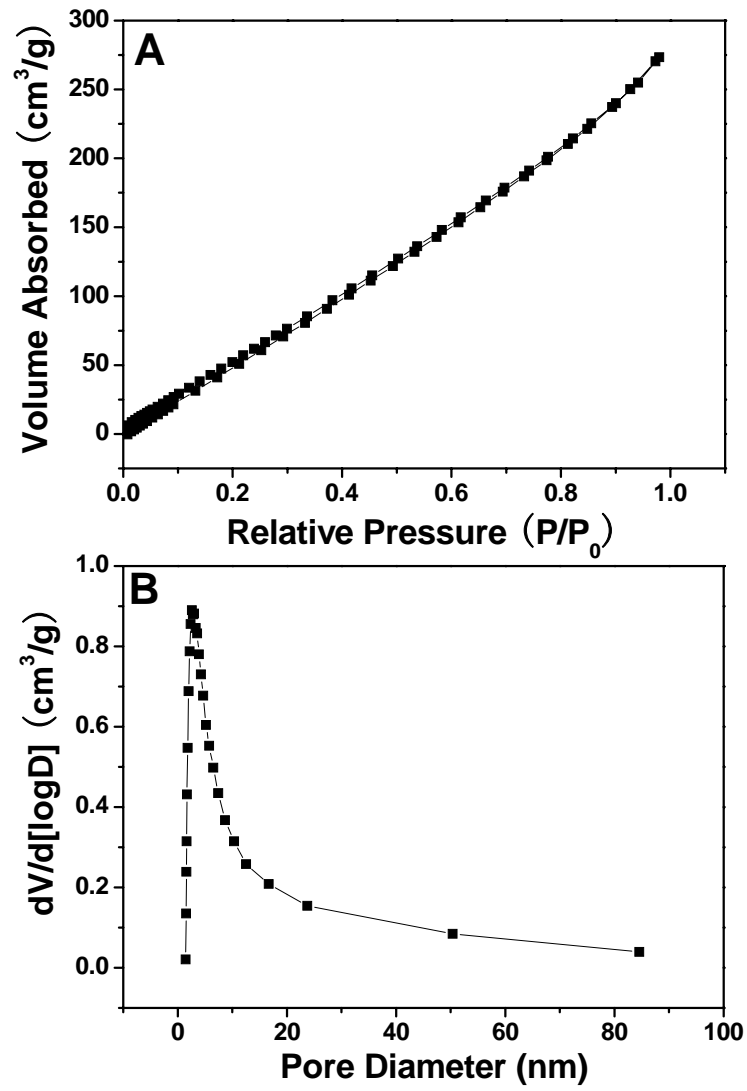


Fig. S2 Nitrogen adsorption/desorption isotherm and corresponding pore size distribution of LaF₃ sample.

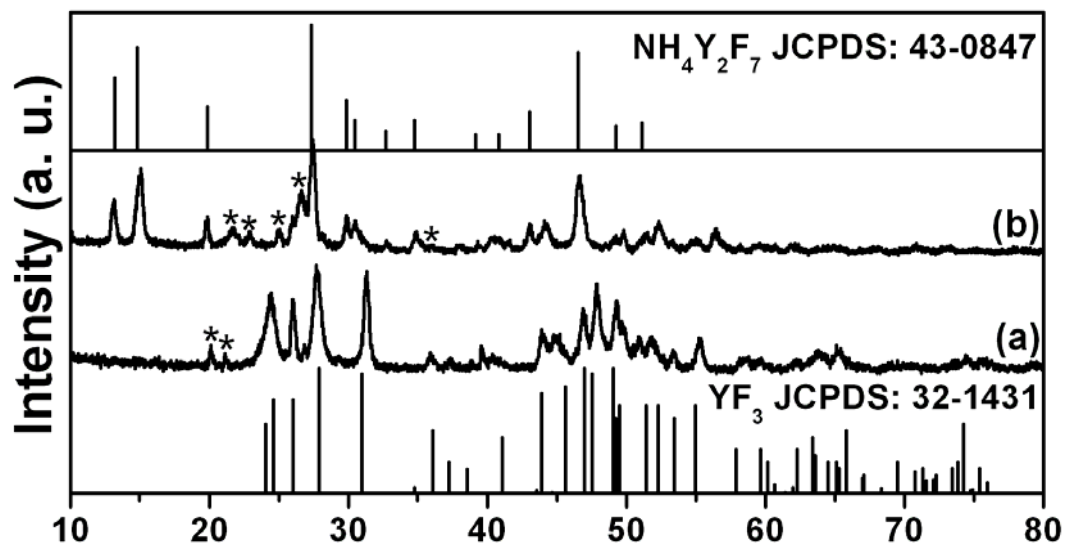


Fig. S3 XRD patterns of the as-prepared products using NaBF_4 (a) and NH_4F (b) as F^- source (* denoted as impurity). The standard data of $\text{NH}_4\text{Y}_2\text{F}_7$ (JCPDS 43-0847) and YF_3 (JCPDS 32-1431) were given as references.

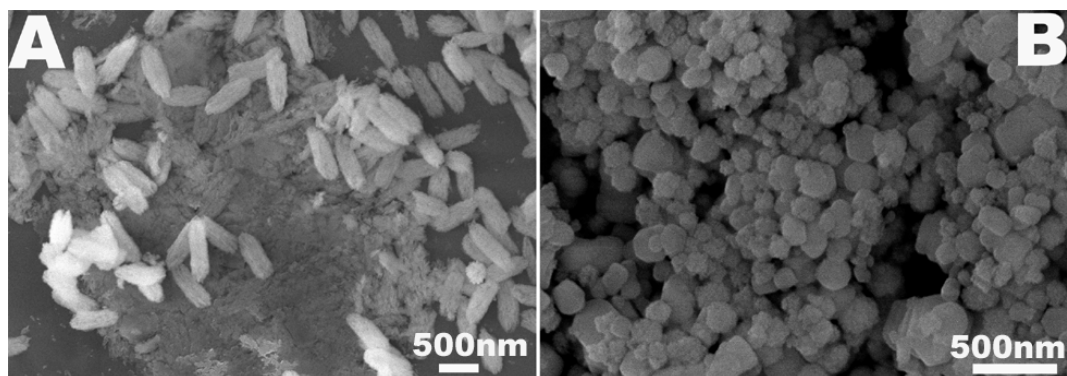


Fig. S4 SEM images of the as-prepared products using NaBF_4 (A) and NH_4F (B) as F^- source.

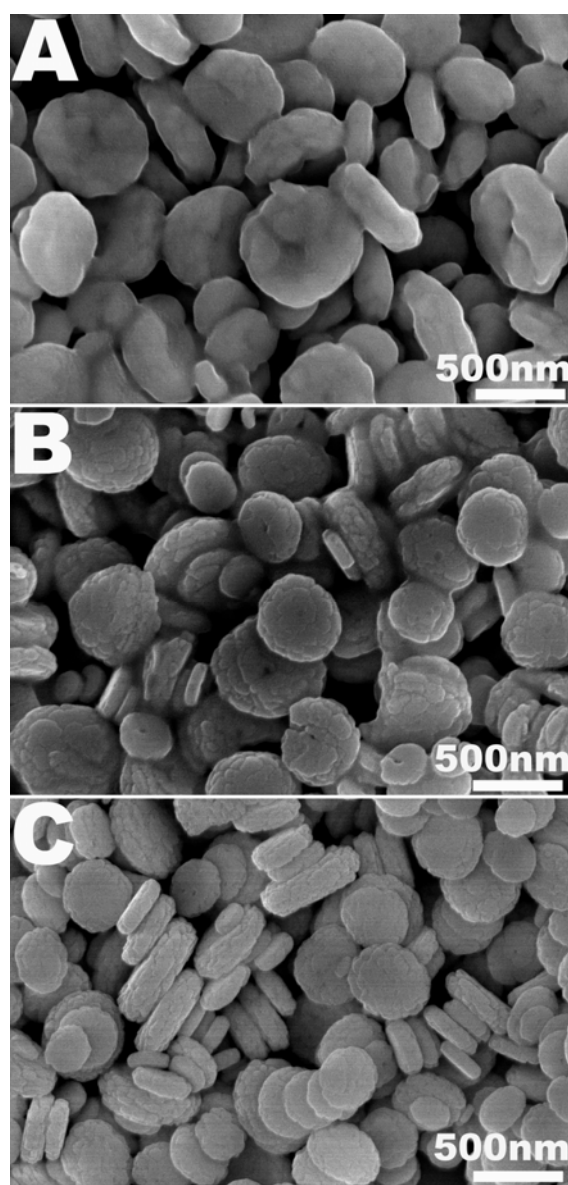


Fig. S5 SEM images of EuF_3 obtained under microwave irradiation for different time intervals of (A) 1 min, (B) 10 min, (C) 20 min.

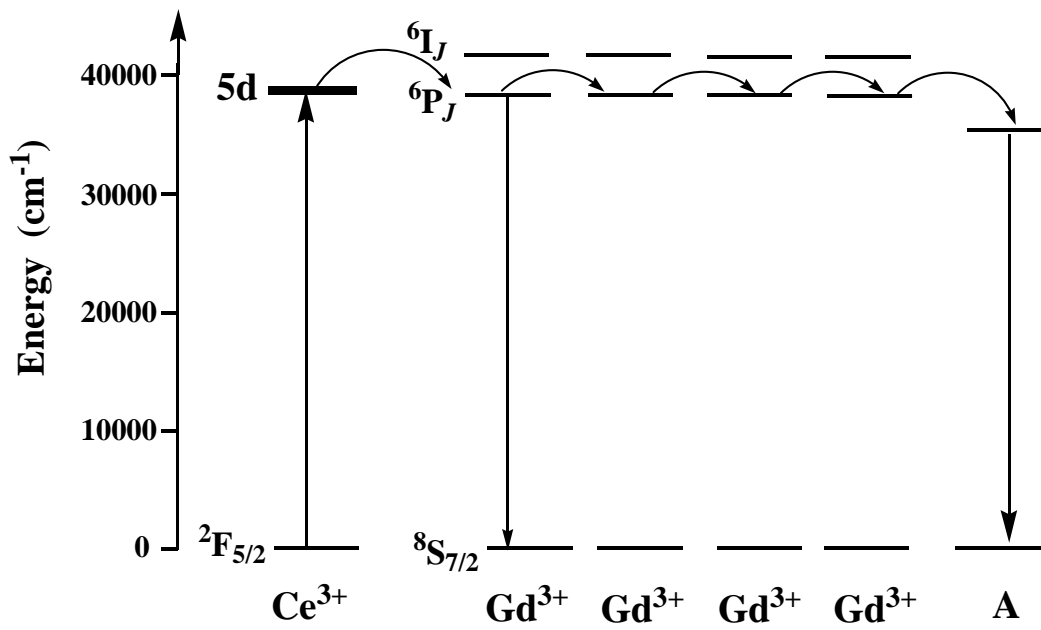


Fig. S6 Schematic energy level diagram showing luminescence mechanism in the $GdF_3:Ce^{3+}/Ln^{3+}$. A represents the activator ion (Tb, Eu, or Dy).

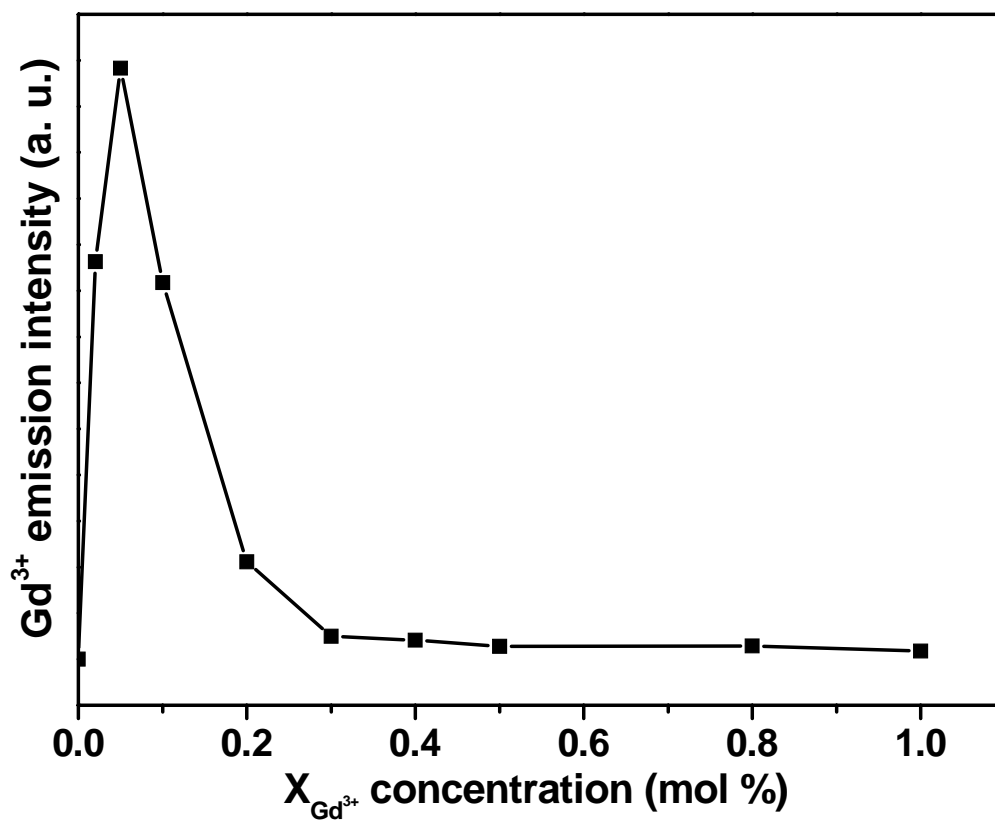


Fig. S7 Relative emission intensity of Gd³⁺ versus Gd³⁺ concentration (x) in Y_{1-x}Gd_xCe_{0.01}Dy_{0.01}F₃.