

Electronic Supplementary Information

Structure and Luminescence Behavior of As-Synthesized, Calcined, and Restored MgAlEu-LDH with High Crystallinity

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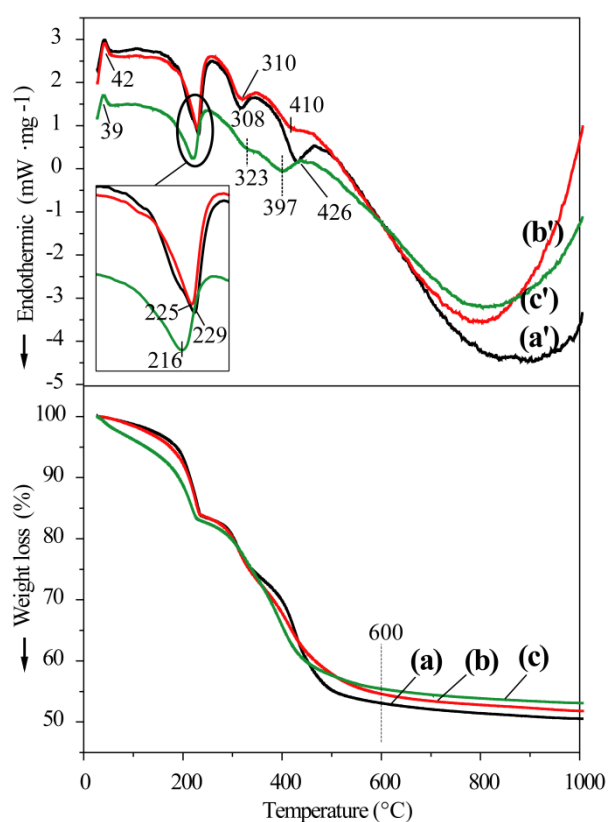


Fig. S1 Thermal gravimetric (TG) and differential scanning calorimeter (DSC) curves of the Eu0 (a/a'), Eu1 (b/b') and Eu5 (c/c') samples.

The TG/DSC data were collected in a TGA/DSC1/1100SF (METTLER TOLEDO) thermal analyzer, with alumina crucible and heating rate, 10 °C /min.

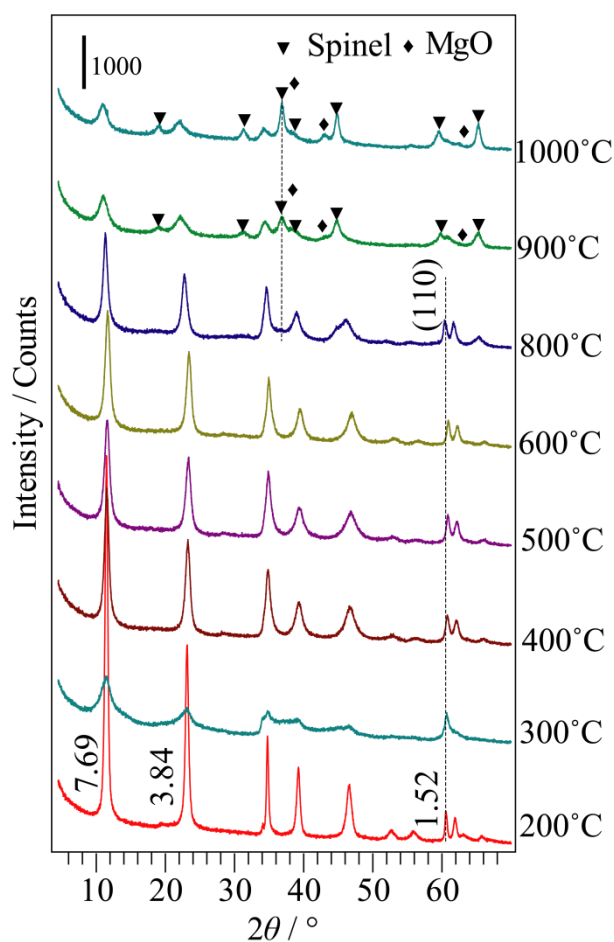


Fig. S2 XRD patterns of the restored R-Eu1-temperature samples.

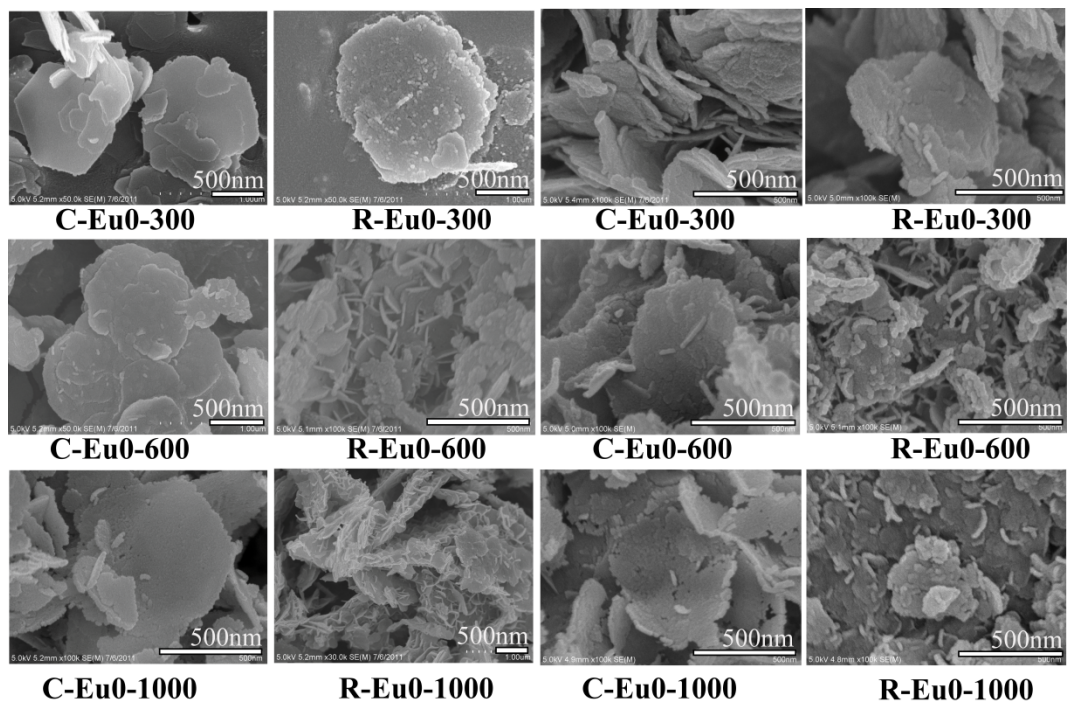


Fig. S3 SEM images of C-Eu1 (a-c) and R-Eu1 (a'-c'), C-Eu5 (e-f) and R-Eu5 (e'-f) samples at different calcined temperatures.

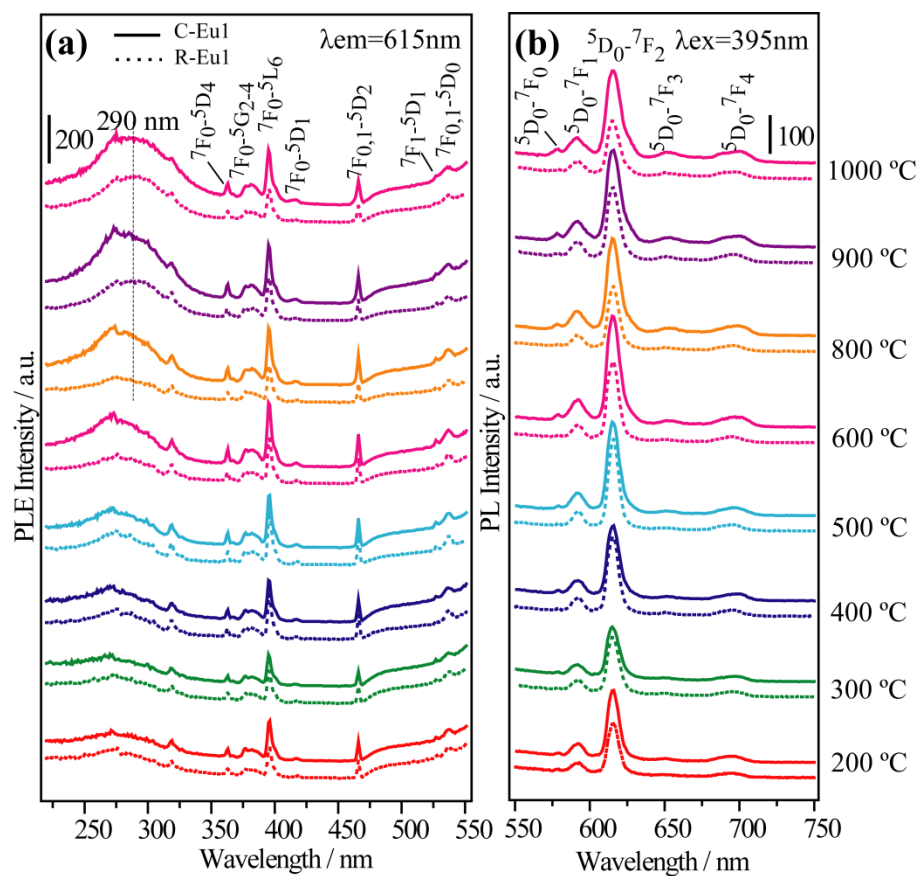


Fig. S4 PLE (a) and PL (b) spectrum of C-Eu1 and the restored R-Eu1 samples at series of calcined temperatures. The PL spectra are measured under intra- $4f^6$ electronic transition of Eu^{3+} at 395 nm.

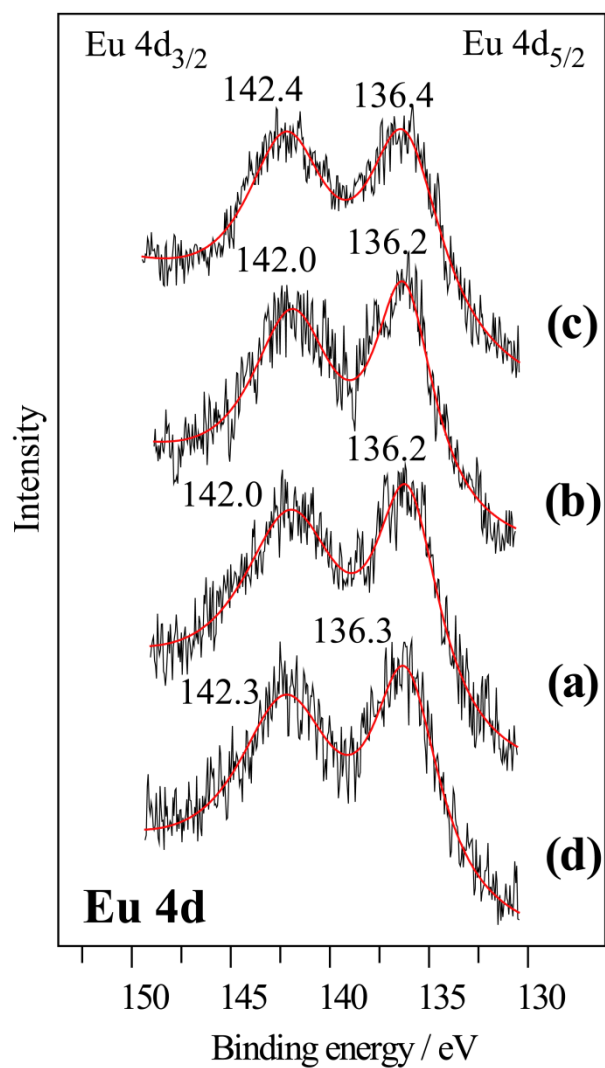


Fig. S5 XPS spectra of Eu 4d binding energy regions as a function of Eu5 (a), C-Eu5-300 (b), C-Eu5-1000 (c) and R-Eu5-600 (d).

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Table S1. Quantum yields and lifetimes of the Eu5, C-Eu5-200, -600, -1000 and the corresponding R-Eu5 samples

Samples	Eu5	C-Eu5-200	R-Eu5-200	C-Eu5-600	R-Eu5-600	C-Eu5-1000	R-Eu5-1000
quantum yields (%)	82.9	67.8	35.0	95.0	66.2	35.8	12.4
lifetimes (μs)	398.9	380.5	385.6	422.6	395.6	368.9	463.9

Quantum yields of samples were recorded on horiba fluoromax 4 with a calibrated intergrating sphere system.