Supporting Information

Room-Temperature and One-Minute Synthesis of Alcohol-Soluble and Ultra-Small Eu-Doped $CaMoO_4$ Nanoparticles

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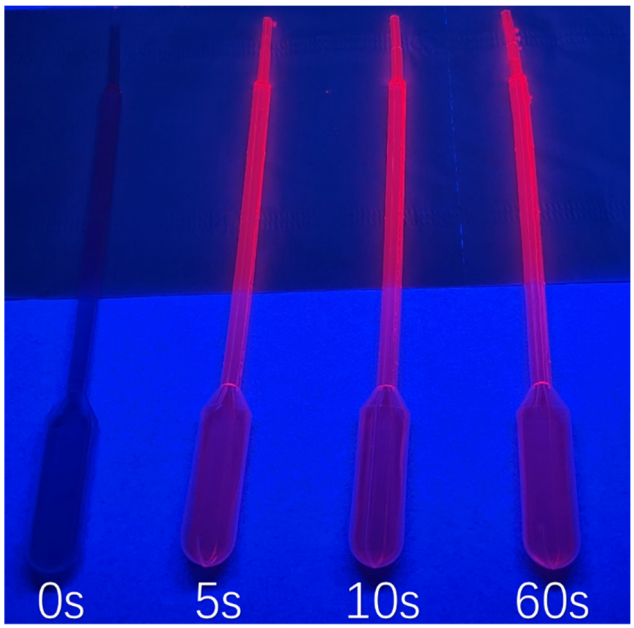

Figure S1. Digital photographs of Eu^{3+}-doped $CaMoO_4$ nanocrystal crude solutions synthesized at room temperature with reaction times of 0 s, 5 s, 10 s, and 60 s, respectively.

Table S1. Detailed PLQY values of Eu^{3+}-doped $CaMoO_4$ nanocrystals in different batches.

	Eu^{3+} mol%	λex (nm)	PLQY (%)
Group1	1	280	9.74
	5		25.72
	10		36.95
	15		45.28
	20		42.61
	25		41.9
Group2	1	280	9.02
	5		28.3
	10		39.96
	15		46.12
	20		44.59
	25		40.73
Group3	1	280	10.07
	5		31.68
	10		40.84
	15		46.59
	20		43.61
	25		41.97

Table S2. Summaries of Eu^{3+}-doped $CaMoO_4$ nanocrystals of two room-temperature synthesis methods.

Synthesis conditions	Particle size (nm)	PLQY (%)	Solvent compatibility	Ref.
Butyric acid and butylamine ethanol/water	3.4	85.3	chloroform	1
Propionic acid and propylamine ethanol/methanol	3.4	46.12	ethanol	This work

Table S3. Comparisons of Eu^{3+}-doped $CaMoO_4$ phosphors prepared with different synthetic methods.

Synthesis method	T (°C)	Synthesis time	PLQY (%)	Ref.
Solid-state method	800	4 h	86.80	1
Nitrate-citrate gel combustion method	700	3 h	45.17	2
Propionic acid/propylamine-assisted method	25	1 min	46.12	This work

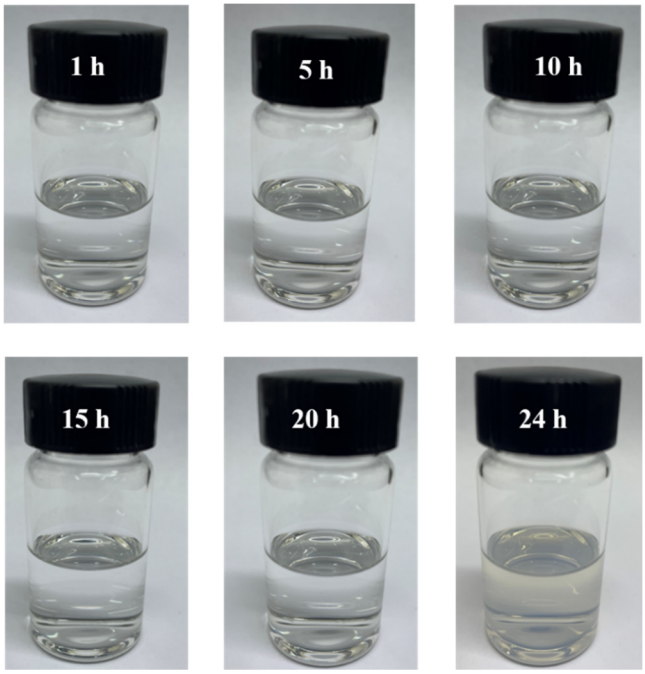

Figure S2. Photographs taken at different period of time for $Ca_{0.85}MoO_4:Eu^{3+}_{0.15}$ nanocrystal solutions (10 mg/mL).

References

1. M. Liu, X. Shi, Q. Cao, B. Li, Z. Ni, C. Lu, D. Pan and B. Zou, *Small*, 2023, **19**, 202301680.
2. A. Tyagi, D. Mandal, M. Rakshita, D. Haranath and C. Shivakumara, *J. Lumines.*, 2026, **289**,121609.