Electronic Supplementary Material (ESI) for RSC Advances

Supplementary Information

Uniform square-like BaFBr:Eu^{2+} microplates: controlled synthesis and luminescent properties

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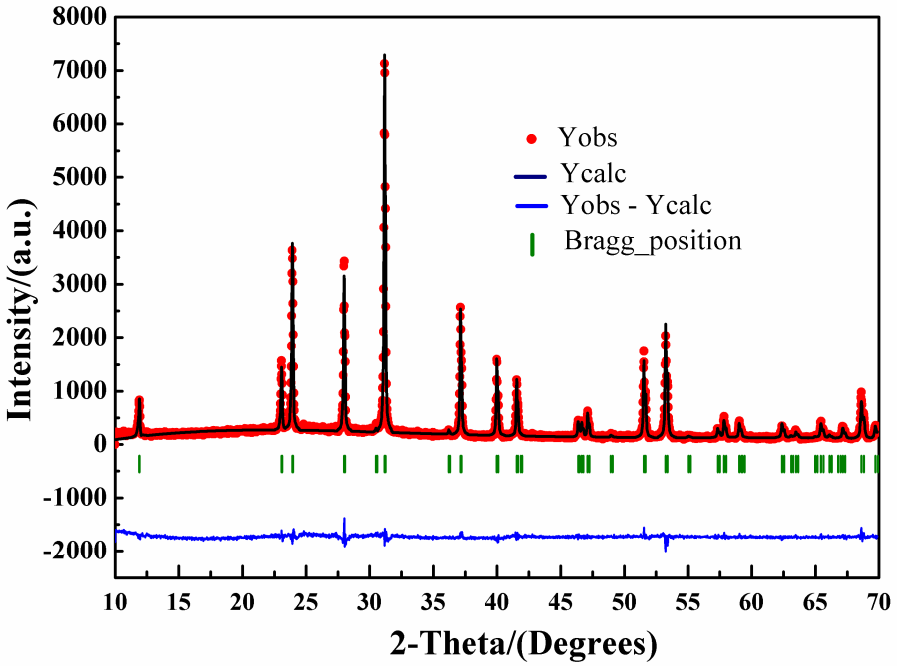


Fig.S1 Rietveld refinement of XRD pattern of the square-like BaFBr:Eu^{2+} microplates with experimental (red circles) and calculated pattern (black line). All allowed Bragg reflections are shown as green vertical bars. Difference between calculated and experimental pattern is shown as blue curve. Acceptable reliability factors are R_p = 6.35 %, R_{wp} = 8.52 %, R_{exp} = 5.45 %, R_{Bragg} = 7.12 % and R_F = 6.93 %.

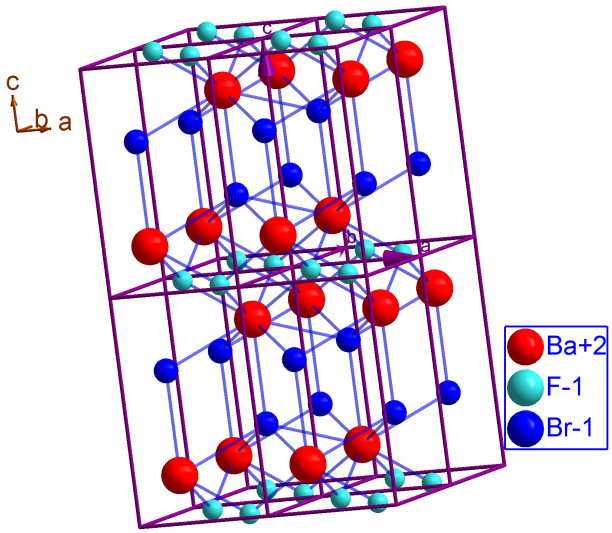
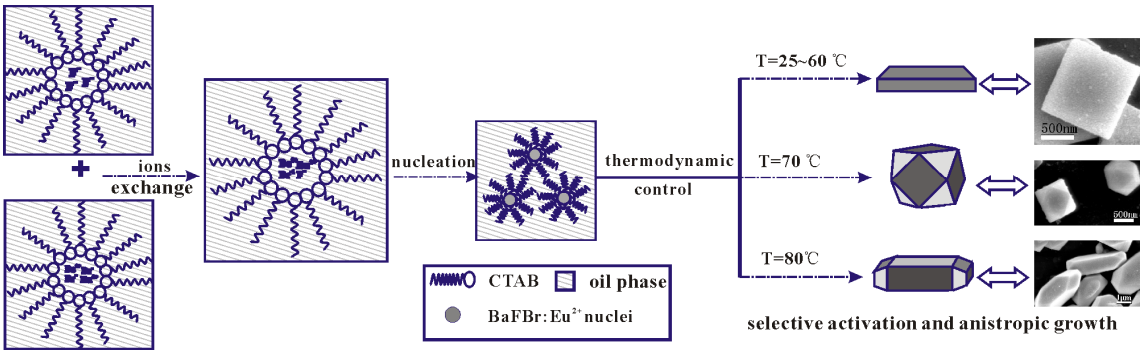


Fig.S2 The crystal structure of tetragonal BaFBr.

Table 1 Summary of the different conditions and the corresponding detailed experimental conditions together with their phase, morphology and calculative grain size [#].

Samples	Ratio[*]	*T*/℃	*t*/h	Phase	Morphology	Size/μm[&]
1	1:1	25	3	BaF_2, BaFBr	nanoparticles and plates	/
2	1:2	25	0.5	BaFBr	square pales	0.05 × 0.3
3	1:2	25	1	BaFBr	square pales	0.08 × 0.8
4	1:2	25	3	BaFBr	square pales	0.20 × 1.3
5	1:2	40	3	BaFBr	square pales	0.40 × 1.4
6	1:2	60	3	BaFBr	square pales	0.50 × 1.7
7	1:2	70	3	BaFBr	cuboctahedron	1.5~2.0
8	1:2	80	3	BaFBr	corner cut cuboid	1.2 × 1.2 × 4.0

[#] All reactions were carried out in the W/O emulsion of CTAB/n-octane/n-butanol/water. *Molar ratio of NH_4F and $BaBr_2$. [&]**The** average particle size was determined from SEM images.



Scheme 1 Schematic illustration for the formation evolution process of $BaFBr:Eu^{2+}$ with different morphologies.

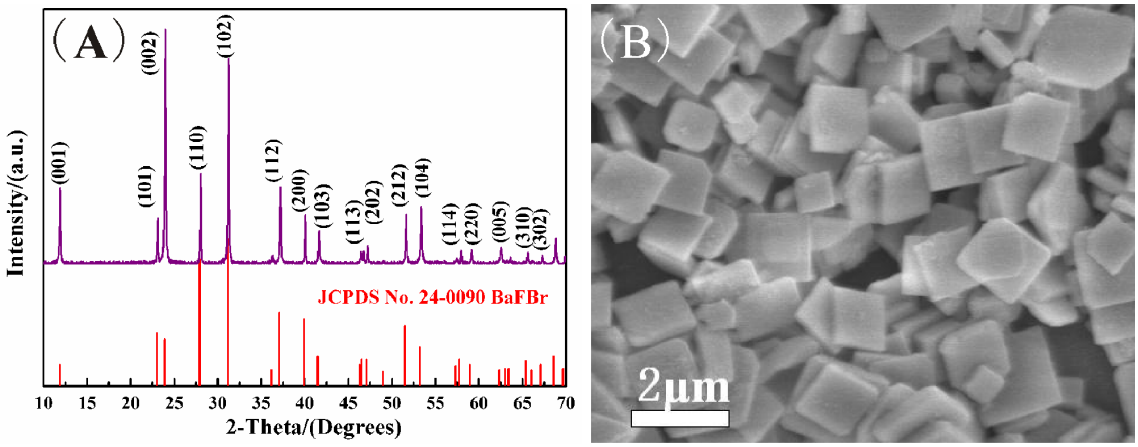


Fig.S3 XRD (A) and SEM image (B) of the sample S4 annealed at 300 ℃ for 0.5 h under reduced atmosphere.

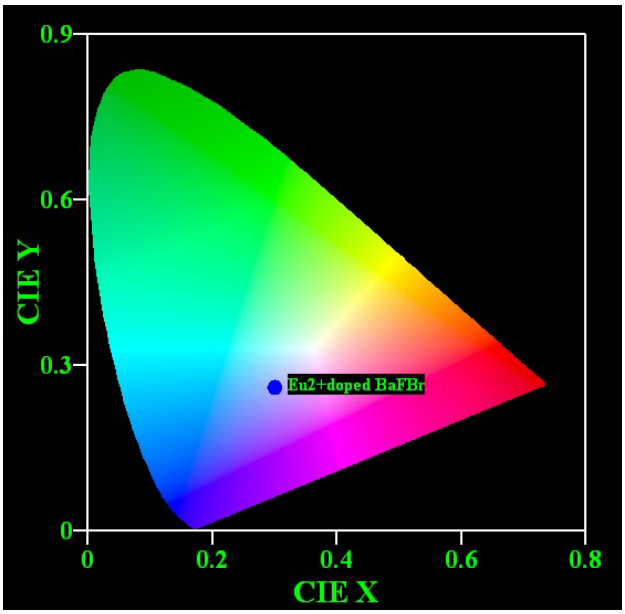


Fig.S4 The CIE chromaticity coordinate diagram and the color coordinates was determined to be (0.30, 0.26).