Electronic Supplementary Material (ESI) for RSC Advances.

Supporting information

Orange- to green- emitting $Li(Sr, Ca)_4(BO_3)_3$: Eu^{2+} phosphor: emission-tunable properties and white light emitting diodes application

Hua Yu[1], Degang Deng[2*], Youjie Hua[2], Chenxia Li[2], Shiqing Xu[2*]

Table S1 The excitation, emission, Stokes shift, crystal field splitting and FWHM for $LiSr_{3.98-x}Ca_x(BO_3)_3$: $0.02Eu^{2+}$

Sample	Excitation maximum (nm)	Emission maximum (nm)	Stocks shift (cm^{-1})	CFS (cm^{-1})	FWHM (nm)
x=0	385	618	10 134	1 939	106
x=0.2	385	607	9 841	1 939	111
x=0.4	390	600	9 649	1 603	126
x=0.6	364	587	9 280	3 434	157
x=0.8	352	520	7 085	4 371	106
x=1.0	350	515	6 898	4 371	95
x=1.2	349	507	6 591	4 615	91
x=1.5	348	501	6 357	4 697	80

Table S2 The emission peak value and the normalized intensity of two sub emission bands

Sample	Gaussian Peak (1)		Gaussian Peak (2)	
	Peak Value (nm)	Normalized Intensity	Peak Value (nm)	Normalized Intensity
x=0	524	0.10	612	0.99
x=0.2	520	0.13	610	0.97
x=0.4	518	0.16	604	0.95
x=0.6	516	0.47	585	0.89
x=0.8	514	0.56	575	0.45

x=1.0	510	0.63	566	0.33
x=1.2	503	0.77	548	0.43
x=1.5	493	0.80	528	0.51

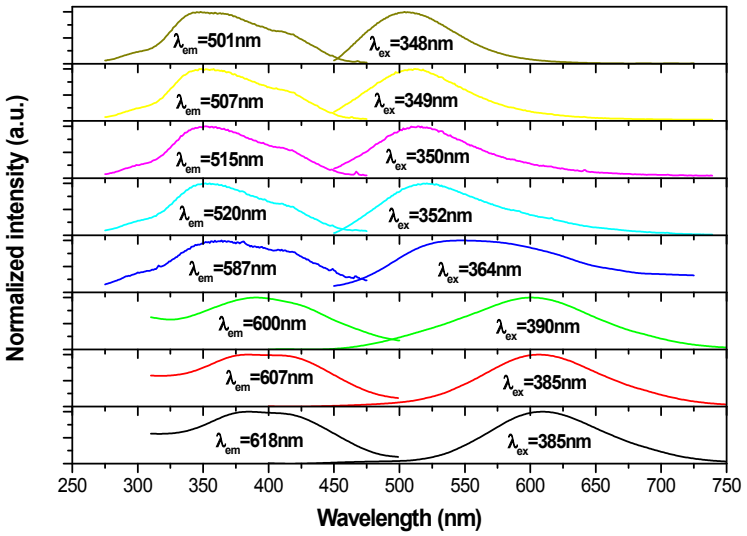

Figure S1 Normalized excitation (left) and emission (right) spectra of $LiSr_{3.98-x}Ca_x(BO_3)_3$:0.02$Eu^{2+}$

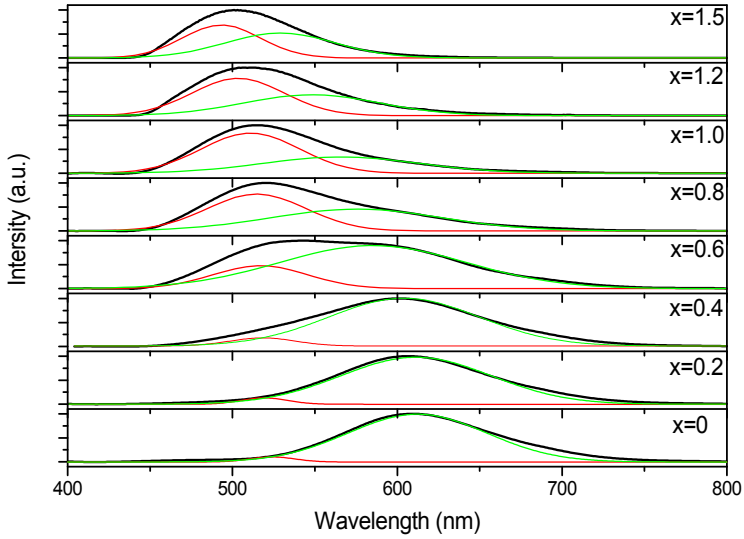

Figure S2 Normalized emission spectra of $LiSr_{3.98-x}Ca_x(BO_3)_3$:0.02$Eu^{2+}$ phosphors (λ_{ex}=360 nm), and deconvoluted Gaussian components (red and green solid lines)