

Fig S1. Rietveld refinement of host LSSON



Fig S2. XRD patterns of LSSON : $xEu^{2+}(0.01 \le x \le 0.04)$

Table 1. Crystallographic data of LSSON

Formula Li ₂ SrSiON ₂							
Crystal system : Trigonal	Space group : P3121 (152)						
a = 5.0131(0) Å,	b = 5.0131(0)Å,						
c = 12.4270(1)Å							
$\alpha = 90^0 \qquad \beta = 90^0$	$V = 270.46 \text{ Å}^3$ $Z = 3$						
$\gamma = 120^{\circ}$	$x^2 = 3.291$						
$R_p = 0.1082, R_w = 0.0821$							

Atom	Wyck	x	У	Ζ	Occ	U _{iso}
Li	6c	0.386(4)	0.005(5)	0.0659(12)	1	0.017(5)
Sr	3a	0	0.4178(4)	1/6	1	0.0005(4)
Si	3b	0.7101(12)	0.7101(12)	0	1	0.0173(21)
01	6c	0.564(5)	0.468(4)	0.1286(12)	0.3333	0.014(8)
02	6c	0.735(4)	-0.0253(33)	-0.0059(25)	0.3333	0.042(6)
N1	6c	0.5408(30)	0.5469(32)	0.0956(5)	0.6667	0.0177(3)
N2	6c	0.7609(25)	0.0832(26)	-0.0026(27)	0.6667	0.0896

Table 2. Structure data of LSSON



Fig S3. Decay curve of LSSON :0.02Eu²⁺ excited at 450 nm and monitored at 586 nm



Fig S4. (a) dependence of peak position and emission intensity on Eu^{2+} ion concentration. (b)

 $\log(I/x)$ dependence of $\log(x)$, ($x \ge 0.02$)



Fig S5. Activation energy of LSSON :0.02Eu $^{2+}$ and YAG:Ce $^{3+}$.