

Table 1S. Main bond lengths (Å) of compounds

Lu ₃ MgAl ₃ SiO ₁₂ :Ce			
(Lu/Ce)—O	2.390 (4)	(Al1/Si1)—O ⁱⁱ	1.741 (4)
(Lu/Ce)—O ⁱ	2.291 (4)	(Al2/Mg2)—O	1.980 (4)
Lu ₂ YMgAl ₃ SiO ₁₂ :Ce			
(Lu/Ce)—O	2.414 (4)	(Al1/Si1)—O ⁱⁱ	1.727 (4)
(Lu/Ce)—O ⁱ	2.304 (4)	(Al2/Mg2)—O	1.990 (4)
LuY ₂ MgAl ₃ SiO ₁₂ :Ce			
(Lu/Ce)—O	2.432 (4)	(Al1/Si1)—O ⁱⁱ	1.729 (3)
(Lu/Ce)—O ⁱ	2.315 (3)	(Al2/Mg2)—O	1.984 (3)
Y ₃ MgAl ₃ SiO ₁₂ :Ce			
(Lu/Ce)—O	2.446 (3)	(Al1/Si1)—O ⁱⁱ	1.726 (3)
(Lu/Ce)—O ⁱ	2.313 (3)	(Al2/Mg2)—O	1.996 (3)

Symmetry codes: (i) -y, -z+1/2, x; (ii) -y, z, x+1/2.

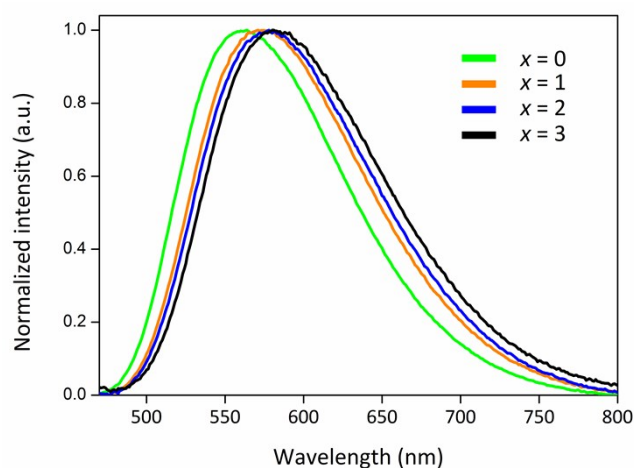


Figure S1 Normalized emission spectra of the Lu_{3-x}Y_xMgAl₃SiO₁₂:Ce³⁺ ($x = 0, 1, 2, 3$) phosphors under $\lambda_{\text{ex}} = 450$ nm.