

Table S1 The bond length of Sr1-O with the increase of x .

x	O1	O2	O3	O4	O6	O7	O8	O8
0	2.079(4)	2.897(3)	2.541(4)	2.736(3)	2.491(4)	2.821(3)	2.296(3)	2.563(4)
0.09	2.787(4)	2.918(3)	2.814(4)	2.405(4)	2.532(5)	2.424(3)	2.993(3)	2.615(4)
0.18	2.748(4)	3.049(3)	2.773(4)	2.369(3)	2.528(4)	2.585(3)	2.649(3)	2.586(4)
0.27	2.913(3)	3.037(3)	2.852(3)	2.427(3)	2.472(4)	2.595(2)	2.652(3)	2.697(4)
0.36	2.971(4)	3.219(3)	2.827(4)	2.397(4)	2.446(4)	2.642(3)	2.479(3)	2.425(4)
0.45	2.496(4)	3.136(3)	2.838(3)	2.080(3)	2.662(4)	2.967(3)	2.705(3)	2.620(3)
0.54	2.815(4)	3.117(3)	3.023(4)	2.419(4)	2.537(4)	2.857(4)	2.584(4)	2.615(4)
0.63	2.628(5)	3.188(4)	3.022(4)	2.031(4)	2.460(6)	2.777(5)	2.464(4)	2.574(4)

Table S2 The bond length of Sr2-O with the increase of x .

x	O3	O4	O4	O5	O6	O8	O9
0	2.731(4)	2.268(3)	2.916(3)	3.167(3)	2.350(4)	2.418(4)	2.501(3)
0.09	2.599(4)	2.499(3)	2.704(4)	2.976(4)	2.489(5)	2.297(4)	2.615(3)
0.18	2.600(3)	2.372(3)	2.906(3)	3.431(3)	2.533(4)	2.466(4)	2.522(3)
0.27	2.488(3)	2.367(3)	2.779(3)	3.499(3)	2.491(4)	2.409(4)	2.422(3)
0.36	2.609(3)	2.601(3)	2.571(4)	3.508(3)	2.544(4)	2.832(4)	2.320(3)
0.45	2.629(3)	2.872(3)	2.649(3)	3.074(3)	2.751(4)	2.445(3)	2.403(4)
0.54	2.485(4)	2.332(4)	2.804(4)	3.297(4)	2.477(4)	2.422(4)	2.432(4)
0.63	2.767(4)	3.010(4)	2.737(4)	3.336(5)	2.318(6)	2.752(4)	2.311(4)

Table S3 The bond length of Sr3-O with the increase of x .

x	O1	O1	O3	O3	O9	O9
0	2.359(4)	2.359(4)	2.421(3)	2.421(3)	2.317(3)	2.317(3)
0.09	2.106(4)	2.106(4)	2.290(3)	2.290(3)	2.237(4)	2.237(4)
0.18	2.055(3)	2.055(3)	2.311(3)	2.311(3)	2.206(3)	2.206(3)
0.27	1.960(3)	1.960(3)	2.255(3)	2.255(3)	2.272(2)	2.272(2)
0.36	2.044(3)	2.044(3)	2.253(3)	2.253(3)	2.266(3)	2.266(3)
0.45	2.222(3)	2.222(3)	2.296(4)	2.296(4)	2.382(3)	2.382(3)
0.54	1.976(3)	1.976(3)	2.222(4)	2.222(4)	2.412(4)	2.412(4)
0.63	2.029(4)	2.029(4)	2.447(4)	2.447(4)	2.636(4)	2.636(4)

Table S4 CIE chromaticity coordinates for SGSO:0.03Eu, x Mn ($x = 0-0.63$) phosphors excited by 350, 313 and 274 nm light.

SGSO:Eu ²⁺ , x Mn ²⁺ ($x = 0-0.63$)	CIE(X, Y) $\lambda_{\text{ex}} = 350 \text{ nm}$	CIE(X, Y) $\lambda_{\text{ex}} = 313 \text{ nm}$	CIE(X, Y) $\lambda_{\text{ex}} = 274 \text{ nm}$
$x = 0$	0.204, 0.269	0.243, 0.278	0.323, 0.297
$x = 0.09$	0.226, 0.282	0.287, 0.326	0.348, 0.337
$x = 0.18$	0.237, 0.306	0.299, 0.381	0.314, 0.345
$x = 0.27$	0.256, 0.343	0.310, 0.394	0.310, 0.364
$x = 0.36$	0.275, 0.371	0.324, 0.407	0.317, 0.354
$x = 0.45$	0.289, 0.395	0.335, 0.416	0.329, 0.366
$x = 0.54$	0.306, 0.414	0.345, 0.427	0.333, 0.375
$x = 0.63$	0.319, 0.415	0.347, 0.433	0.329, 0.367

Table S5 Chromaticity shift of SGSO:0.03Eu, 0.09Mn ($\lambda_{\text{ex}} = 274$ nm) as a function of temperature.

T(K)	323	348	373	398	423	448	473
$\Delta C (\times 10^{-2})$	0.0112	0.0892	0.379	0.746	1.168	1.594	1.997

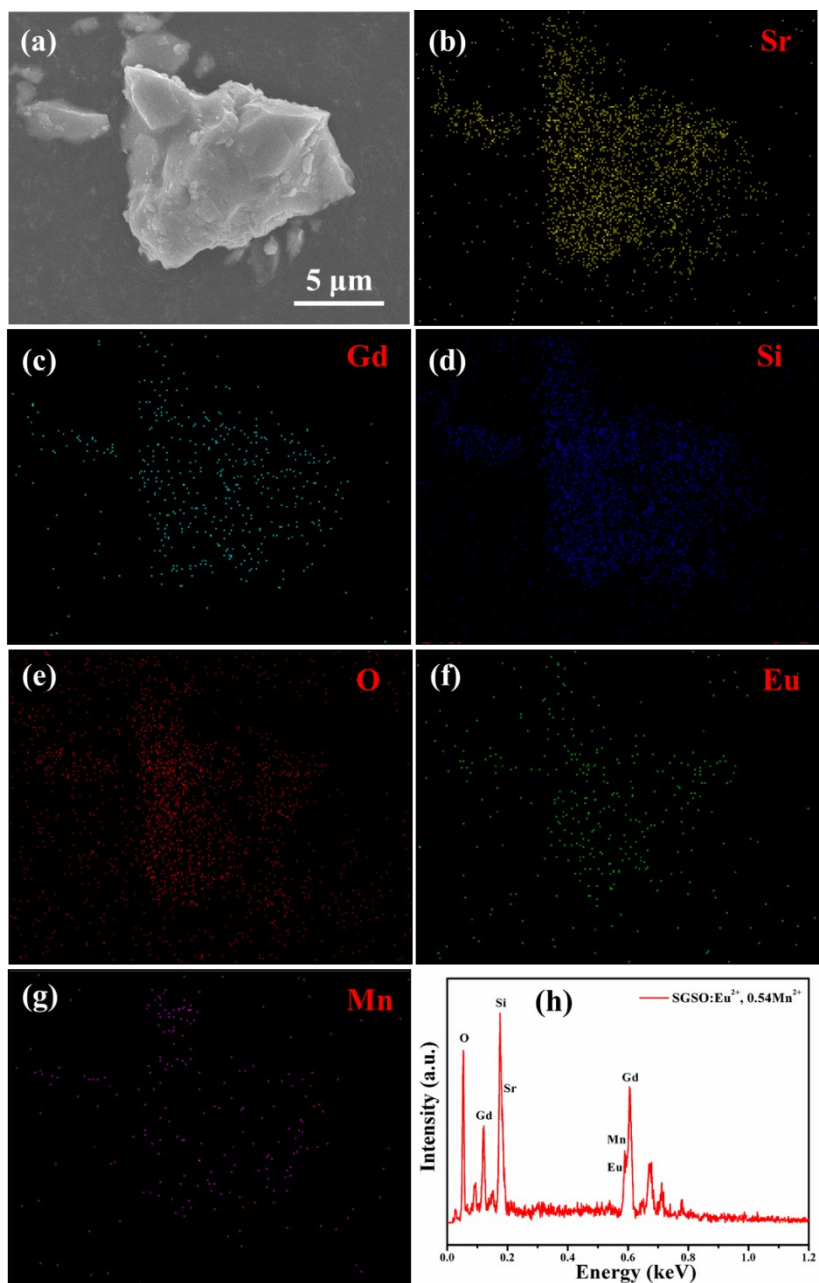


Fig. S1 (a) SEM elemental mapping, (b) and the EDS spectra of the sample SGSO:0.03Eu, 0.54Mn.

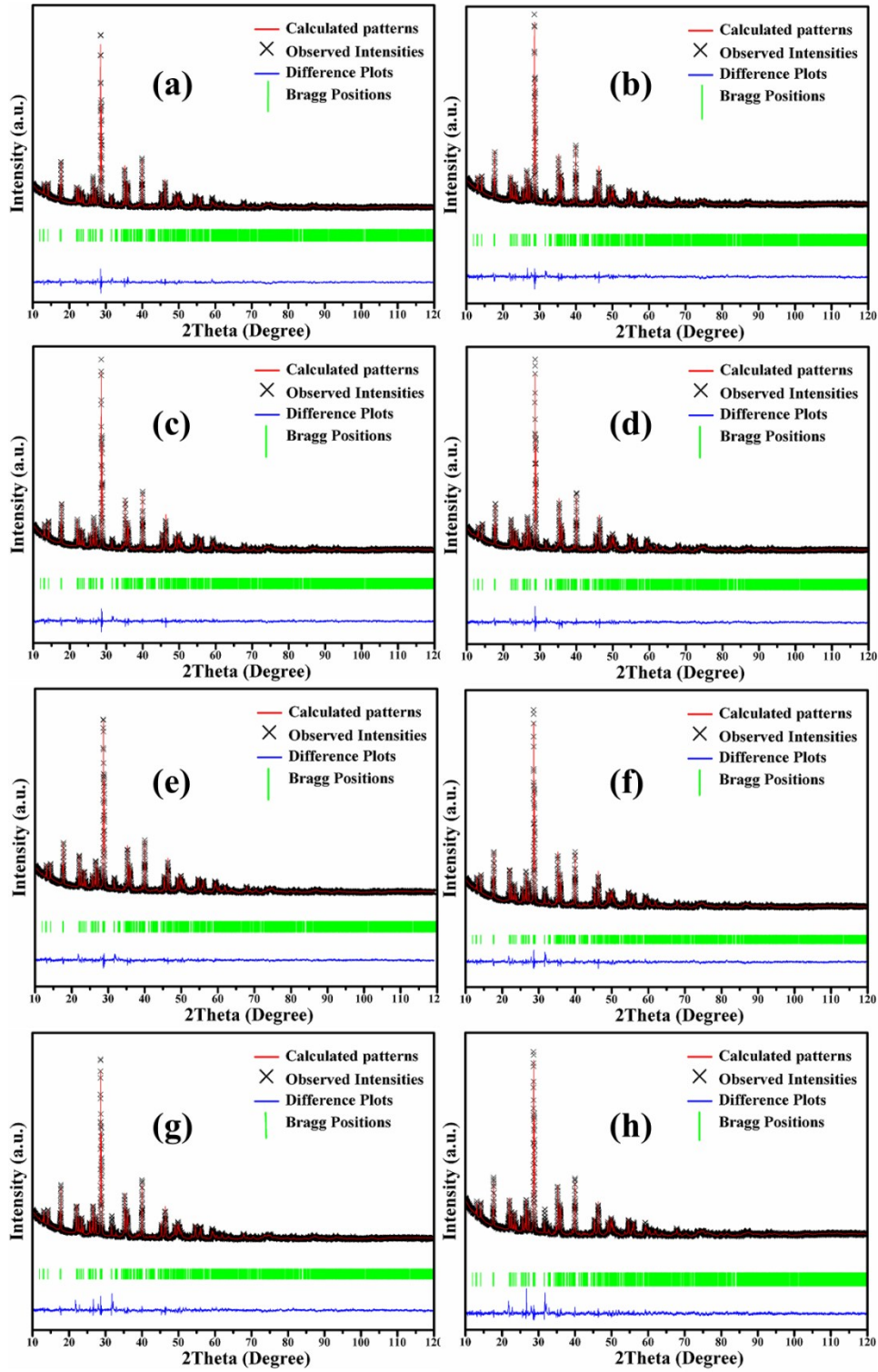


Fig. S2 (a)-(h) XRD Rietveld refinement of SGSO:0.03Eu, xMn ($x = 0-0.63$) with the data and the fit represented by points and the line, respectively.

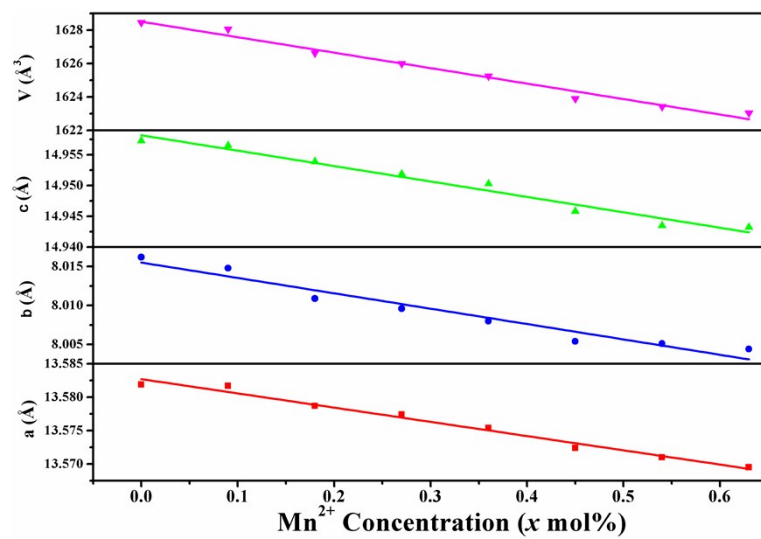


Fig. S3 Cell parameters a , b , c and volume V as a function of Mn doping concentration x .

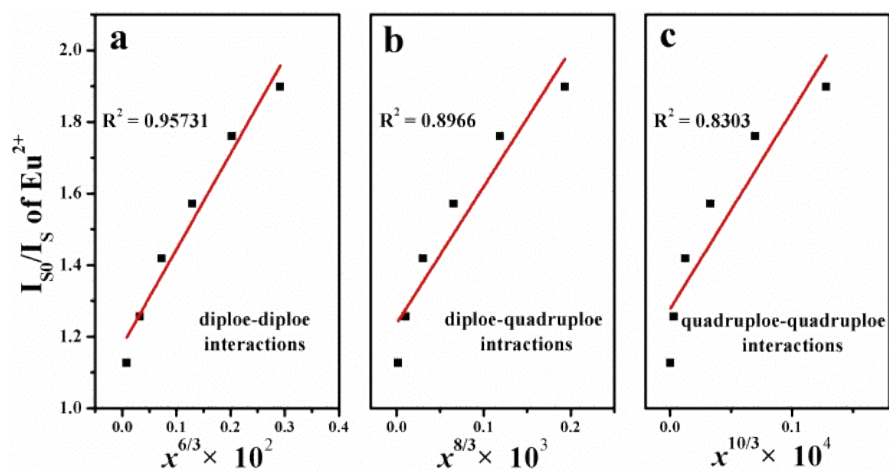


Fig. S4 Dependence of I_{S0}/I_S of Eu^{2+} on (a) $x^{6/3}$, (b) $x^{8/3}$ and (c) $x^{10/3}$.