Electronic Supplementary Material (ESI) for Dalton Transactions

Supporting information

Title: **Temperature dependent luminescence and energy transfer properties of $Na_2SrMg(PO_4)_2$: Eu^{2+}, Mn^{2+} phosphors**

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Table S1. Structural parameters for NSMP determined by Rietveld refinement of powder XRD data at room temperature.[a]

Atom	Wyck	*x*	*y*	*z*	Occupancy	U_{iso} (Å^2)
Na1	4e	0.0647	0.2391	0.4112	1.0000	0.01833
Na2	4e	0.4137	0.2823	0.0894	1.0000	0.02255
Sr	4e	0.7557	0.2805	0.2489	1.0000	0.06394
Mg	4e	0.7429	0.2125	-0.0028	1.0000	0.02040
P1	4e	0.0927	0.2774	0.1317	1.0000	0.01783
P2	4e	0.3988	0.2544	0.3690	1.0000	0.01576
O1	4e	0.0588	0.7911	0.4209	1.0000	0.02398
O2	4e	0.0542	0.2674	0.2498	1.0000	0.01214
O3	4e	0.1403	0.5194	0.1020	1.0000	0.03146
O4	4e	0.2024	0.0464	0.0714	1.0000	0.03483
O5	4e	0.3040	-0.0218	0.4154	1.0000	0.01509
O6	4e	0.4208	0.1890	0.2411	1.0000	0.05029
O7	4e	0.5745	0.1805	0.3853	1.0000	0.09124
O8	4e	0.6306	-0.0687	0.0976	1.0000	0.05034

[a]Symmetry: monoclinic, space group: $P2_1/c$, $Z = 4$, $a = 9.1588$ Å, $b = 5.2667$ Å, $c = 13.4988$ Å, $V = 651.14$ Å^3, $\beta = 89.9853$ °, $R_p = 5.41\%$, $R_{wp} = 7.32\%$, $\chi^2 = 3.29$

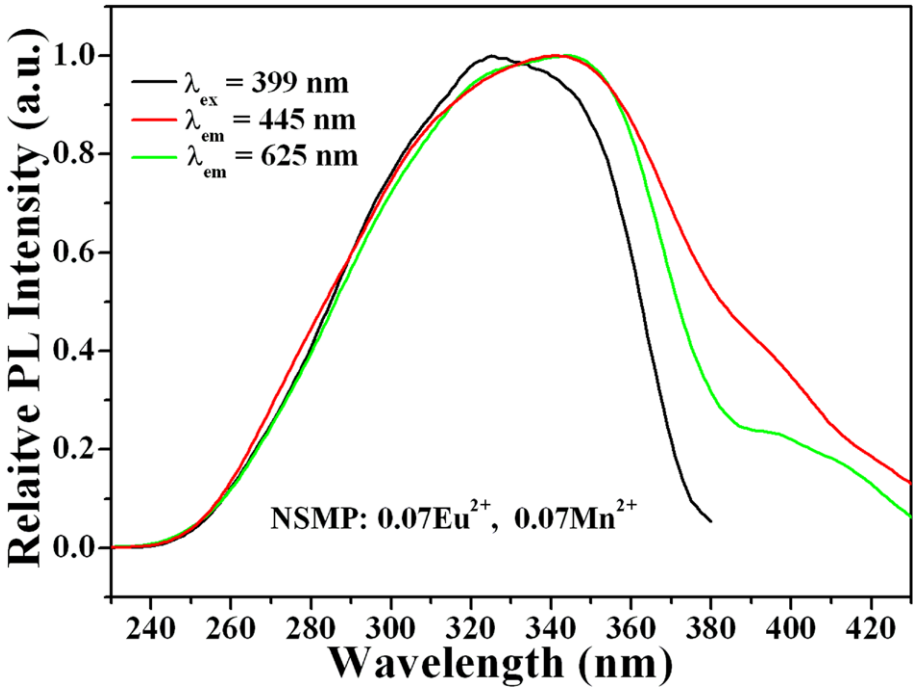

Figure S1. PLE spectra for NSMP: $0.07Eu^{2+}$, $0.07Mn^{2+}$ sample monitored at 399, 445 and 625 nm.

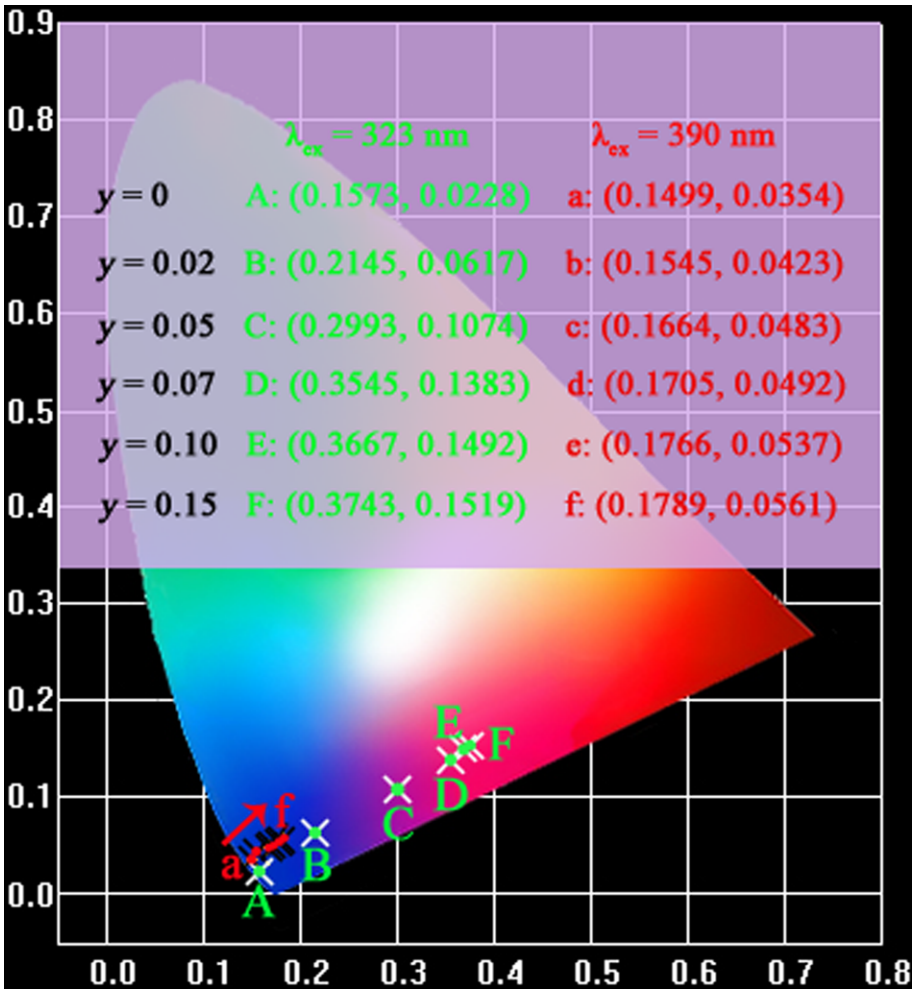

Figure S2. CIE chromaticity diagram for NSMP: $0.07Eu^{2+}$, yMn^{2+} samples under the excitation of 323 (A-F) and 390 nm UV (a-f).

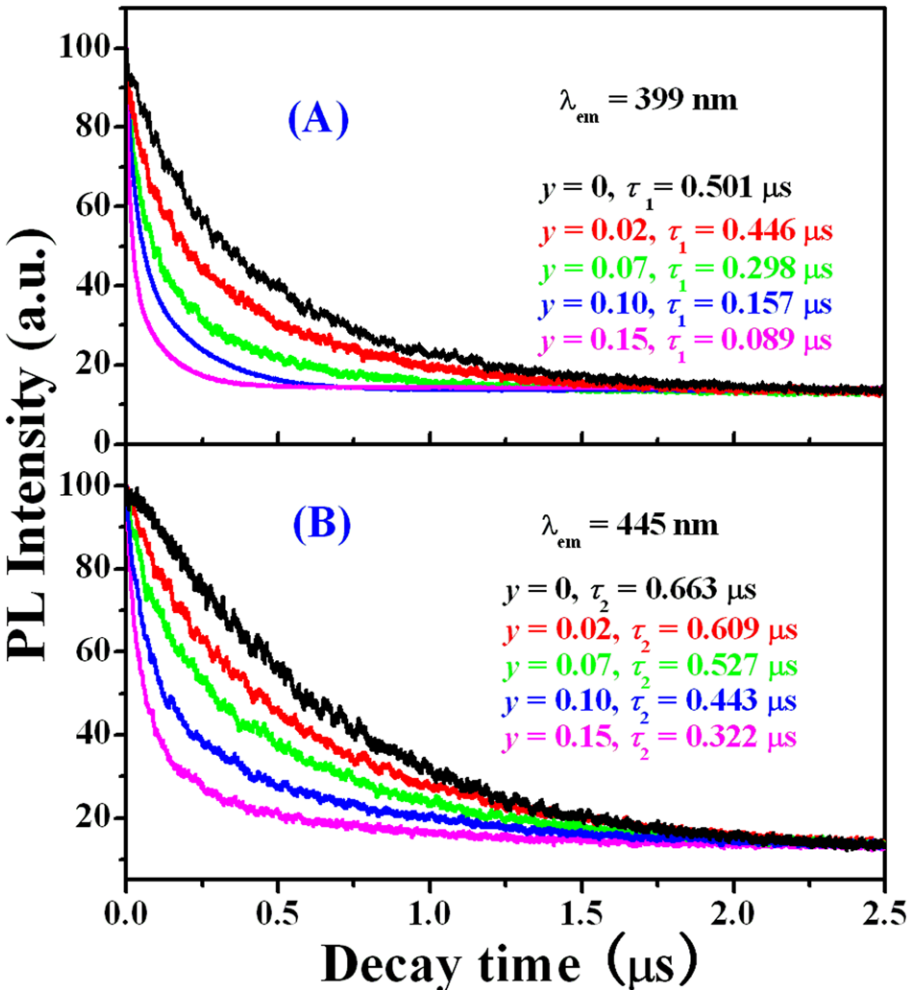

Figure S3. The luminescence decay curves of Eu^{2+} (I) (A) and Eu^{2+} (II) (B) in NSMP: $0.07Eu^{2+}$, yMn^{2+} (y = 0, 0.02, 0.05, 0.07 and 0.1). (λ_{ex} = 350 nm)