

SUPPORTING INFORMATION

Highly fluorescent, color tunable and magnetic quaternary Ag-In-Mn-Zn-S quantum dots

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Electronic Supplementary Information (ESI) available. See DOI: 10.1039/x0xx00000x

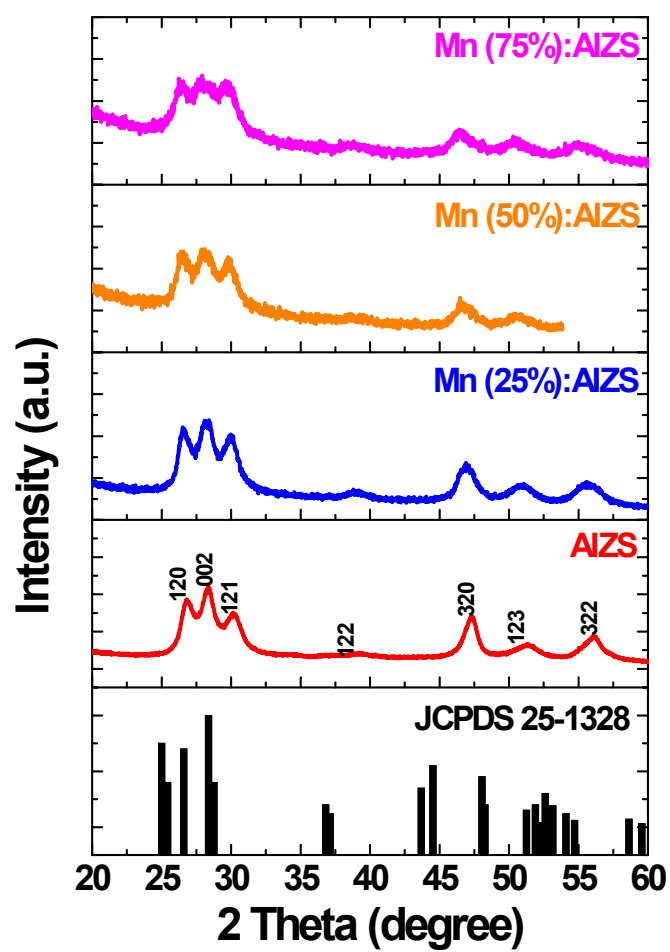


Fig. S1 XRD patterns of green-emitting AIZS and Mn:AIZS QDs when varying the Mn^{2+} loading.

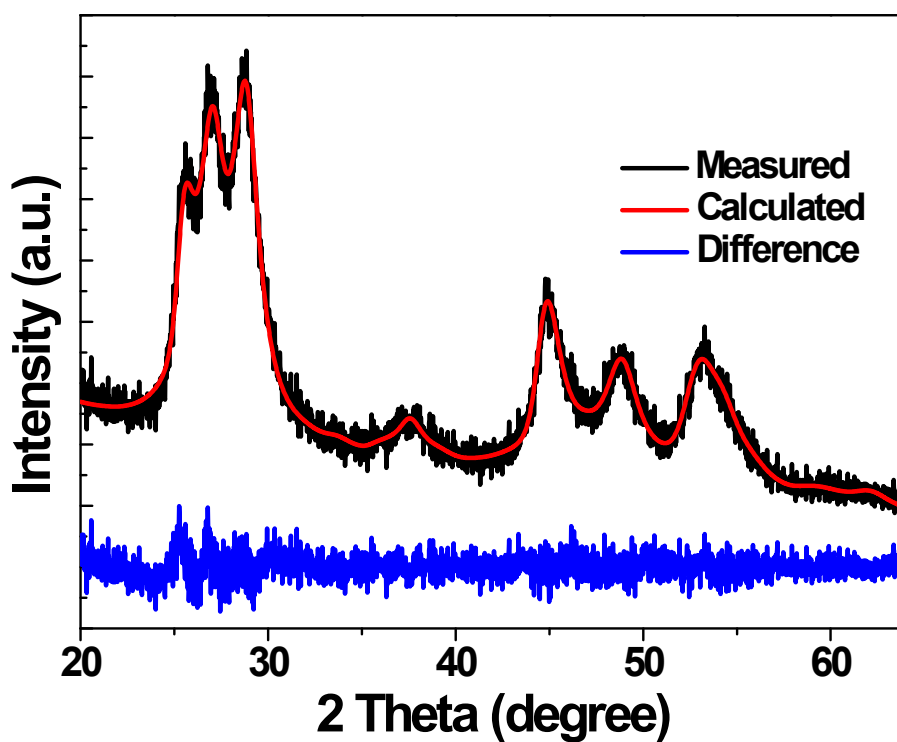


Fig. S2 Rietveld refinement result (red curve) of the powder XRD data of AlZS QDs (black curve) using the orthorhombic phase of AgInS_2 . The blue curve corresponds to the difference between the experimental data and the simulation. Data were obtained considering the lattice parameters $a = 0.7008$ nm, $b = 0.8162$ nm and $c = 0.6585$ nm and an average size of 5 nm for the QDs.

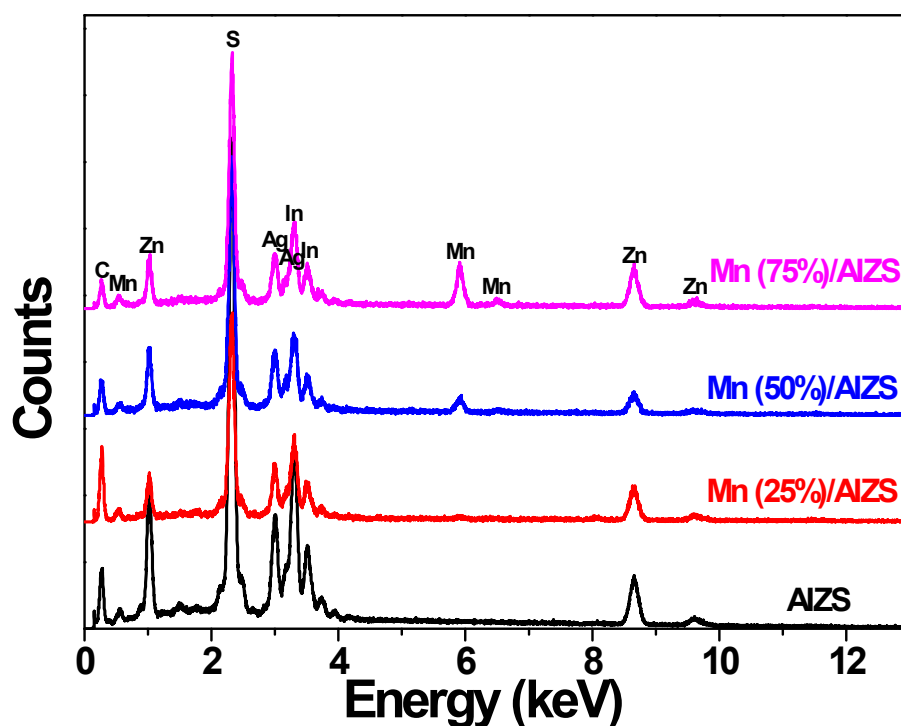


Fig. S3 EDX analyses of orange-emitting AIZS and of Mn:AIZS QDs loaded with 25, 50 and 75% Mn^{2+} , respectively.

Table S1 Atomic ratios in AIZS and Mn:AIZS QDs determined by EDX analyses

Element	Theoretical dopant percentage in Mn			
	0%	25%	50%	75%
Zn	20.57	20.82	19.51	19.62
Ag	11.41	10.54	9.62	8.24
In	17.64	16.43	15.63	12.18
S	50.04	50.39	49.85	48.07
Mn	-	1.82	5.37	11.89

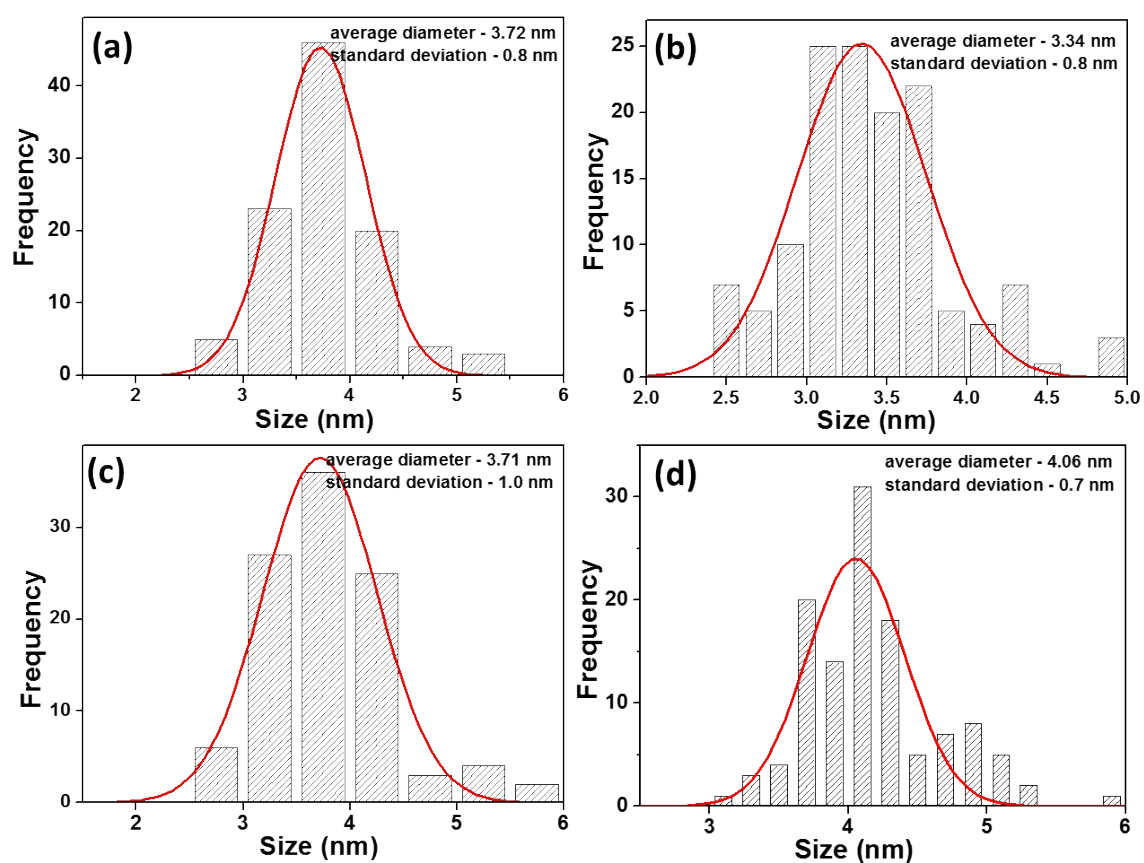


Fig. S4 Average sizes and standard deviations of (a) orange-emitting AIZS, (b) Mn (25%):AIZS, (c) Mn (50%):AIZS and (d) Mn (75%):ZAIS QDs.

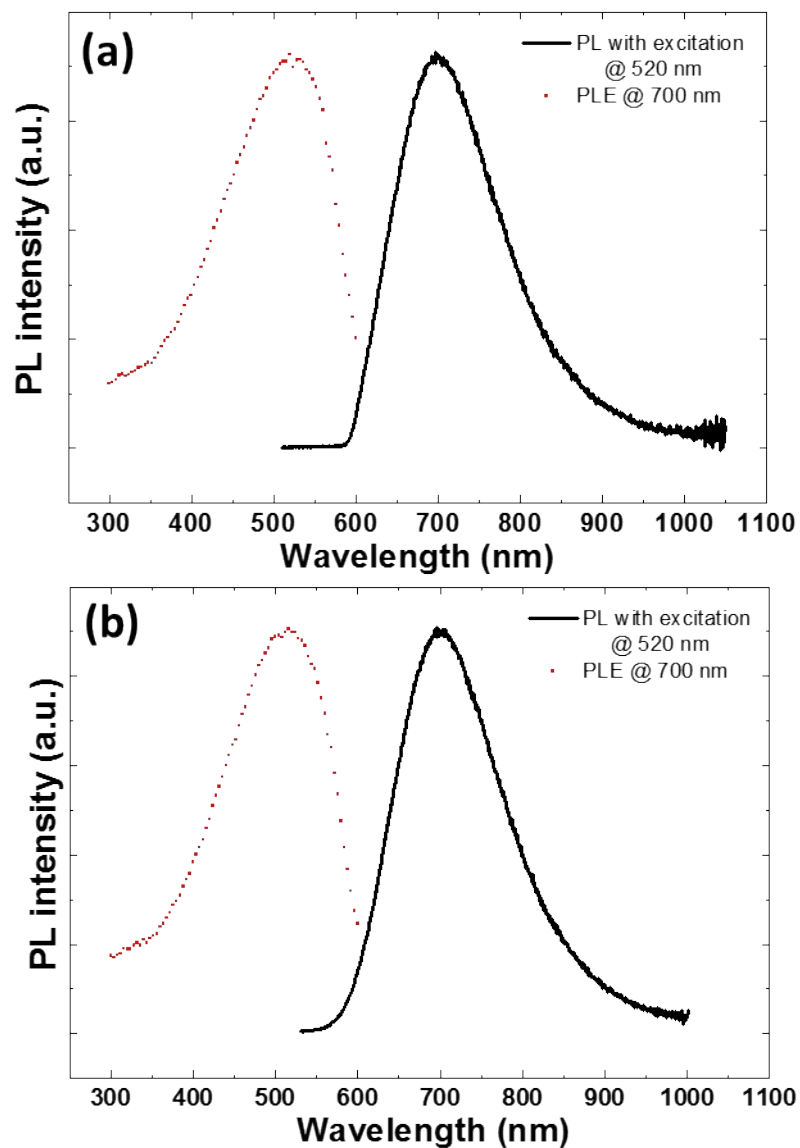


Fig. S5 PL excitation (dotted red lines) and PL emission (black lines) spectra of (a) AlZS and (b) Mn (25%):AlZS QDs in chloroform. Excitation spectra were monitored at the corresponding emission peak of each sample taken from Fig. 5b.