Supplementary Information

Developing Mn-doped lead sulfide quantum dots for MRI labels

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SI1. Morphological characterization of Mn-doped QDs

Morphological properties of colloidal Mn-doped QDs were characterized using atomic force microscopy (AFM), transmission electron microscopy (TEM), energy dispersive x-ray spectroscopy (EDX) and dynamic light scattering (DLS) techniques. Typical TEM and HR TEM images are shown in Figure S1a. EDX analysis (Figure S1b) confirms the incorporation of Mn into the PbS nanocrystal and is used to quantify the amount of Mn. TEM and AFM analysis confirm that nanoparticles retain high crystallinity and have and average diameter d_{QD} = 4.5±1.2 nm. Dynamic light scattering measurements reveal a slightly larger QD diameter than that derived from AFM and TEM (Figure S1c). The difference is expected from light scattering techniques. In fact, the measured diameter includes the hydration sphere of the nanoparticles.

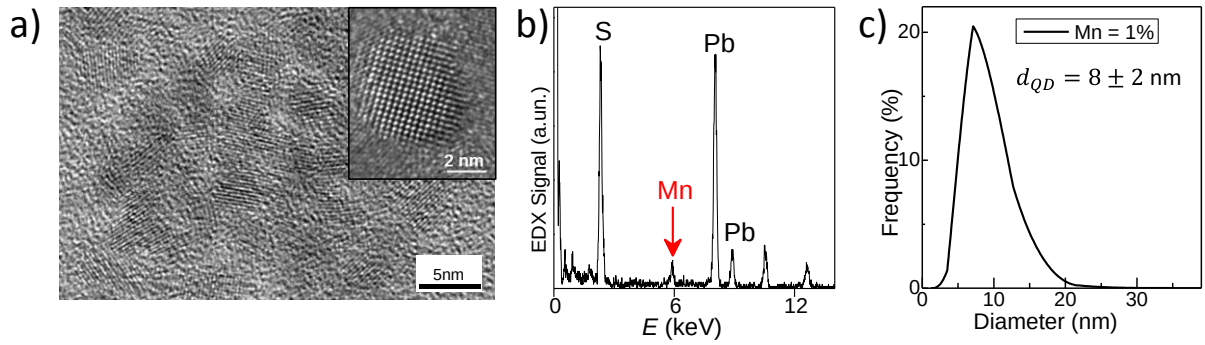

Figure S1 (a) TEM and (Inset) HR TEM images of Mn-doped PbS quantum dots. **(b)** EDX spectrum recorded on the ensemble of Mn-doped QDs revealing the characteristic Mn-related resonance line. **(c)** QD diameter distribution measured by DLS.