

## Electronic Supplementary Information (ESI) for:

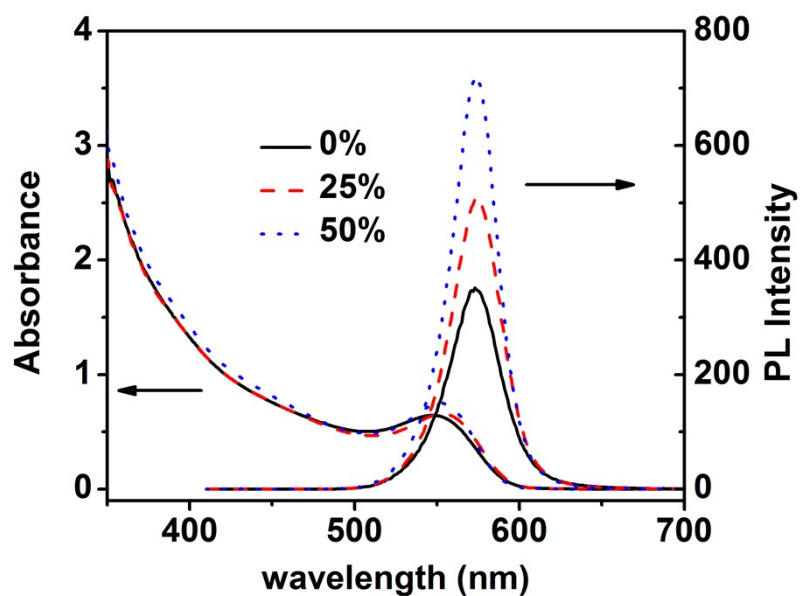
# Water-ethanol Solvent Mixtures: A Promising Liquid Environment for High Quality Positively-charged CdTe Nanocrystals Preparation

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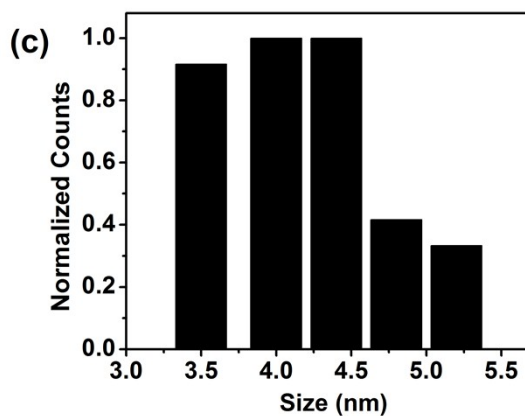
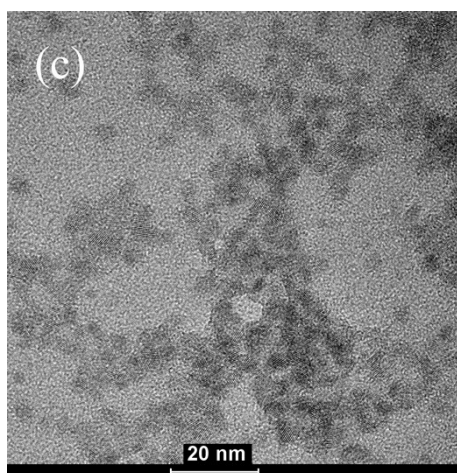
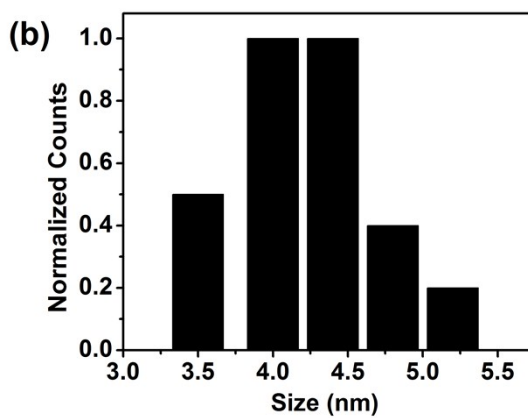
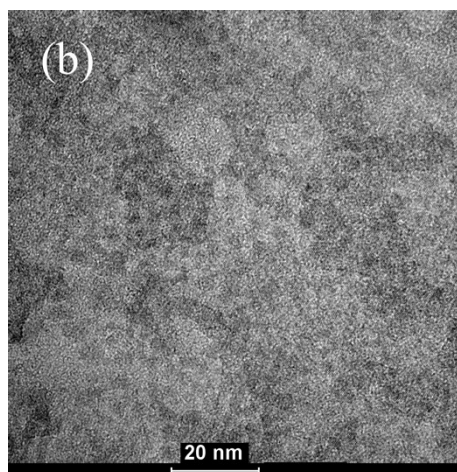
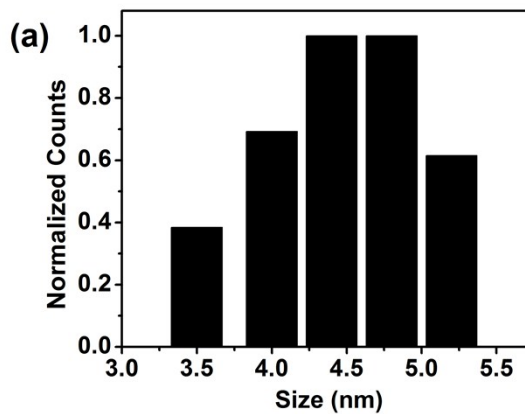
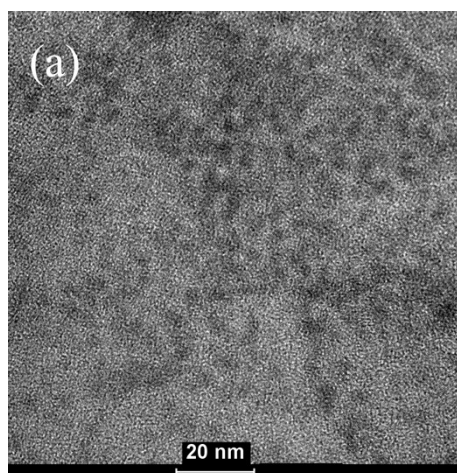
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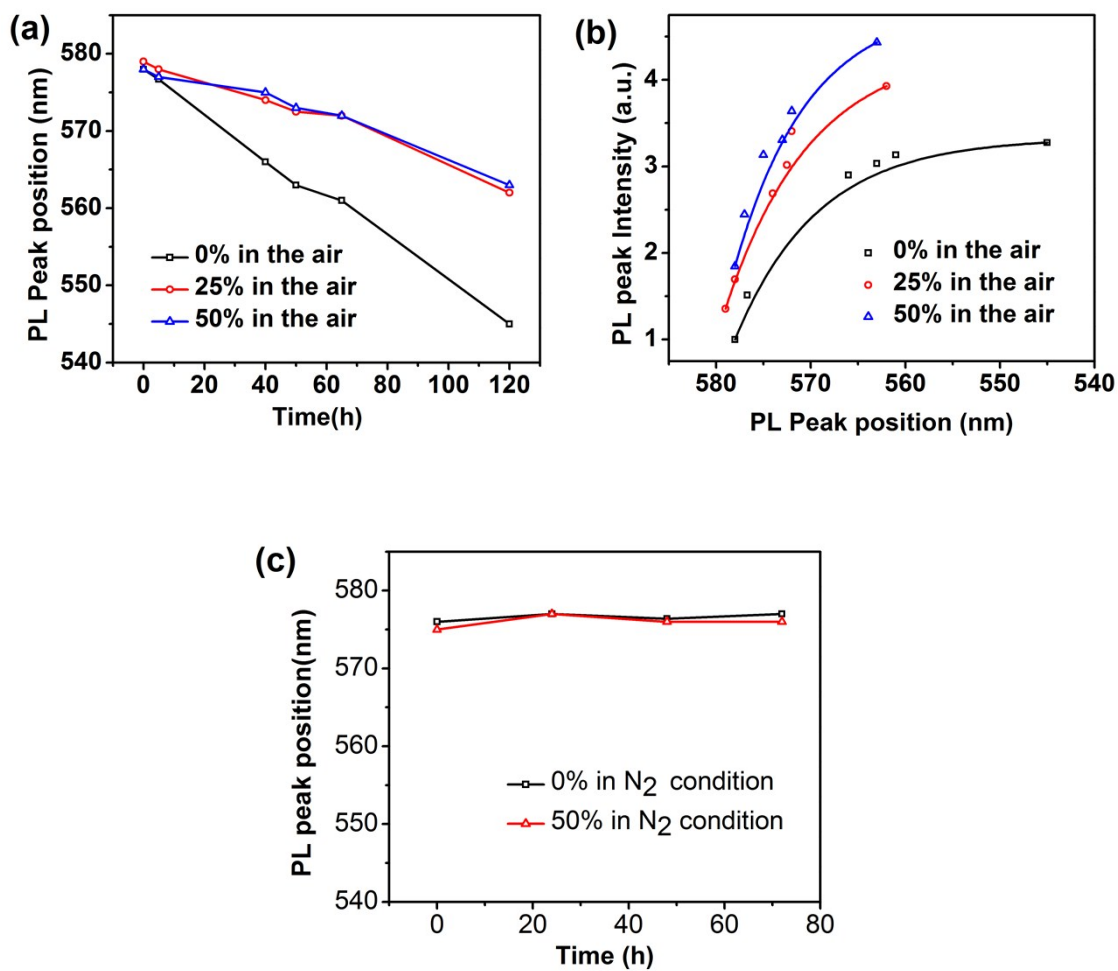
**Fig. S1** Absorption and PL Spectra of MA-capped CdTe NCs in 0%(solid), 25%(dash) and 50% ethanol(dot).The PL peak is 576nm.



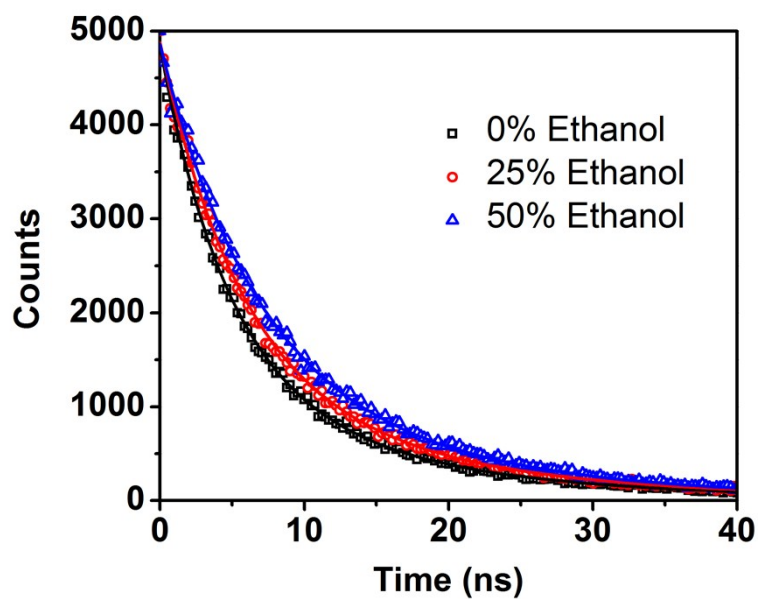
**Fig. S2** TEM images associated with histograms of NCs in (a)0%, (b)25% and (c)50% ethanol. The PL peak are all 578nm.



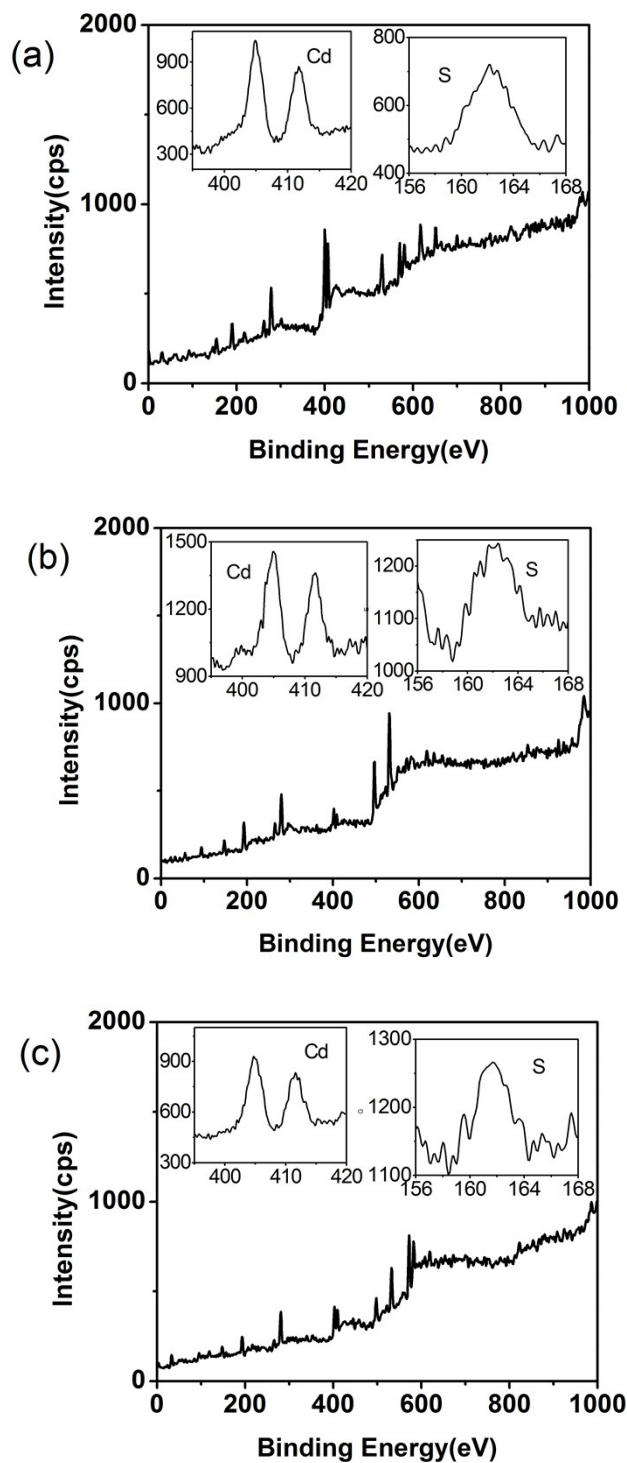
**Fig. S3** Evolution of (a) PL peak and (b) PL intensity of NCs after exposure in the air and (c) in  $N_2$  condition. The initial PL peak are all 578nm in three ethanol proportion.



**Fig.S4** PL decay spectra of MA-stabilized CdTe NCs with different ethanol proportions. Symbols were experimental data and lines were theoretical fitted to experimental data of each, respectively. The excitation and emission wavelength were 400 and 580nm.



**Fig.S5** XPS patterns of CdTe NCs in (a) 0% ethanol, (b) 25% ethanol and (c) 50% ethanol. Inset picture: zoomed results of Cd and S. The atomic ratio of Cd/S was calculated according to the integrated intensity and the sensitivity factor of each element. The PL wavelengths of NCs with different ethanol proportions are both 580nm.



**Fig. S6** Evolution of PL QY of different-sized CdTe NCs in 50% propanol and isopropanol solution.

