Supporting information

Silica/CdTe/Silica Fluorescent Composite Nanoparticles via Electrostatic Assembly as a pH Ratiometer

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Scheme S1 Illustration of coordination effect between carbonyl oxygen of MPA stabilizer and Cd^{+} on the surface of QDs.

Scheme S2 Illustration of FITC leakage induced by nucleophilic attack of amine groups of APS in alkaline environment.

Fig. S1 Lower magnification TEM images of samples. a) QDs, b) SiO_2 -NH_2, c) SQ and d) SQMS.

Fig. S2 UV-vis absorption spectra of samples.

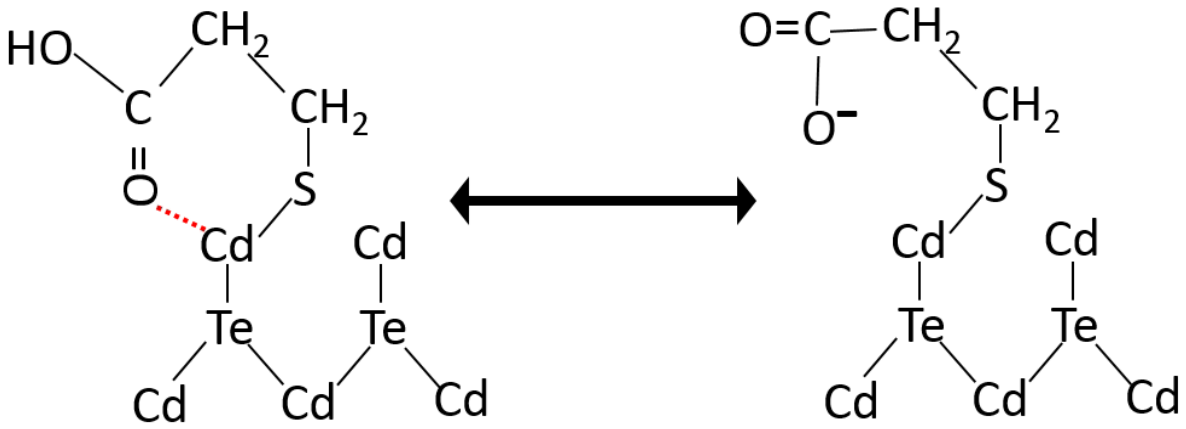
Fig. S3 Fluorescent spectra of a) QDs, b) SQS and c) SQMS in NaCl solution with different concentration.

Fig. S4 Fluorescent spectra of a) QDs, b) SQS and c) SQMS in buffer solution at pH from 1 to 8.

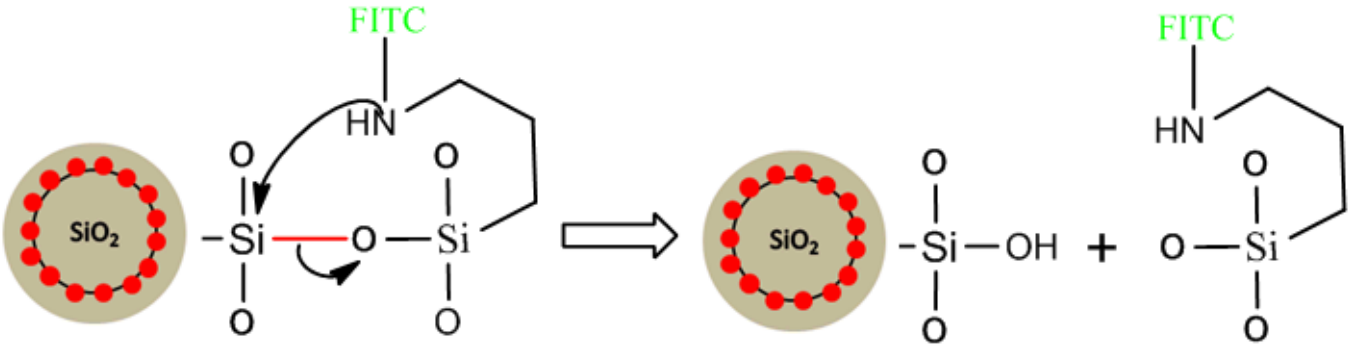
Fig. S5 Fluorescent spectra collected at certain time intervals for a) SQS and b) SQMS kept at pH 4.1.

Fig. S6 Fluorescence decay traces of FITC emission in free FITC and SQMSF at pH 6 (a) and 8 (b).

Fig. S7 a) PL spectra of pure FITC at different pH values. b) PL intensity curve of FITC at 516 nm versus pH values.



Scheme S1 Illustration of coordination effect between carbonyl oxygen of MPA stabilizer and Cd^{+} on the surface of QDs.



Scheme S2 Illustration of FITC leakage induced by nucleophilic attack of amine groups of APS in alkaline environment.

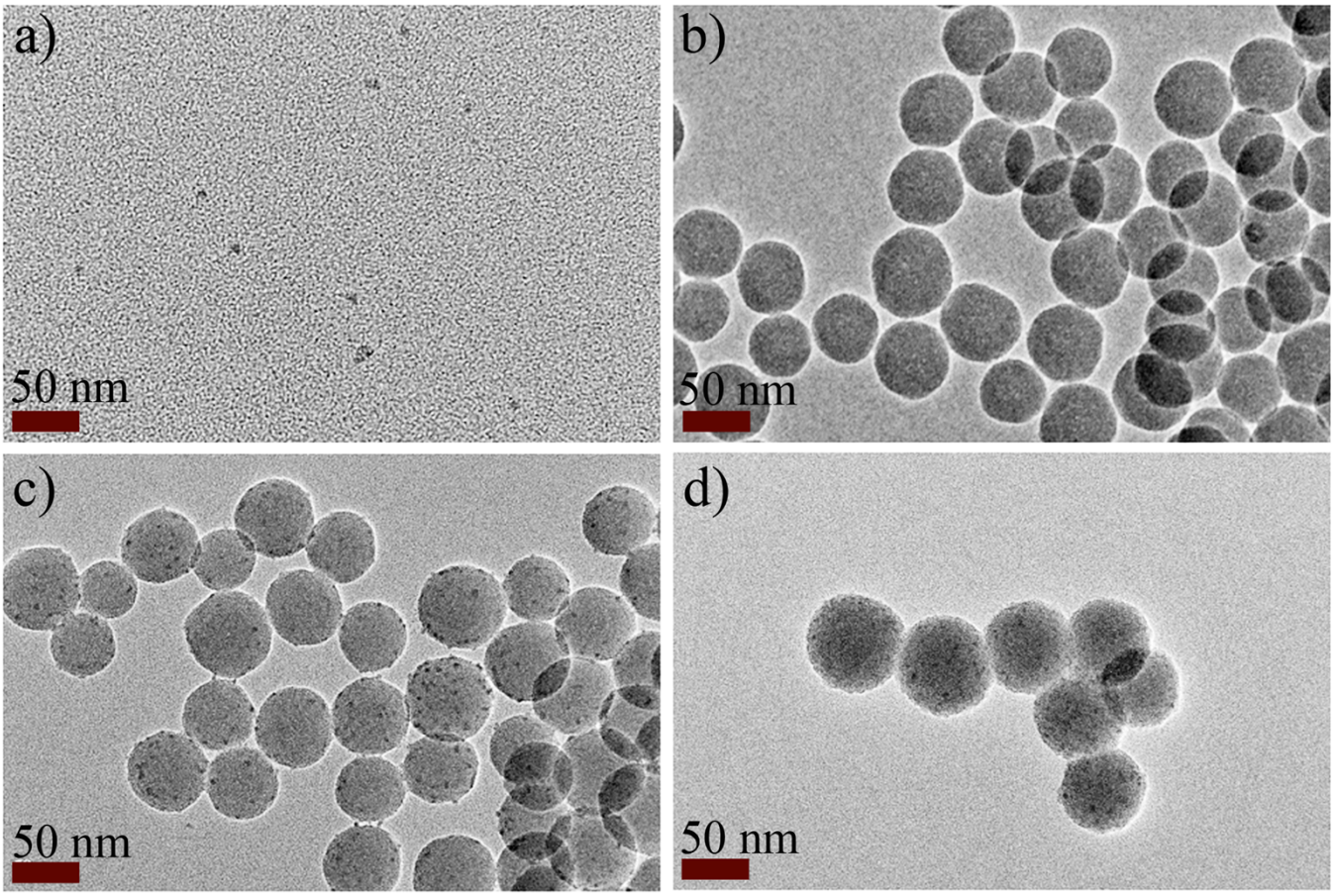


Fig. S1 Lower magnification TEM images of samples. a) QDs, b) SiO_2-NH_2, c) SQ and d) SQMS.

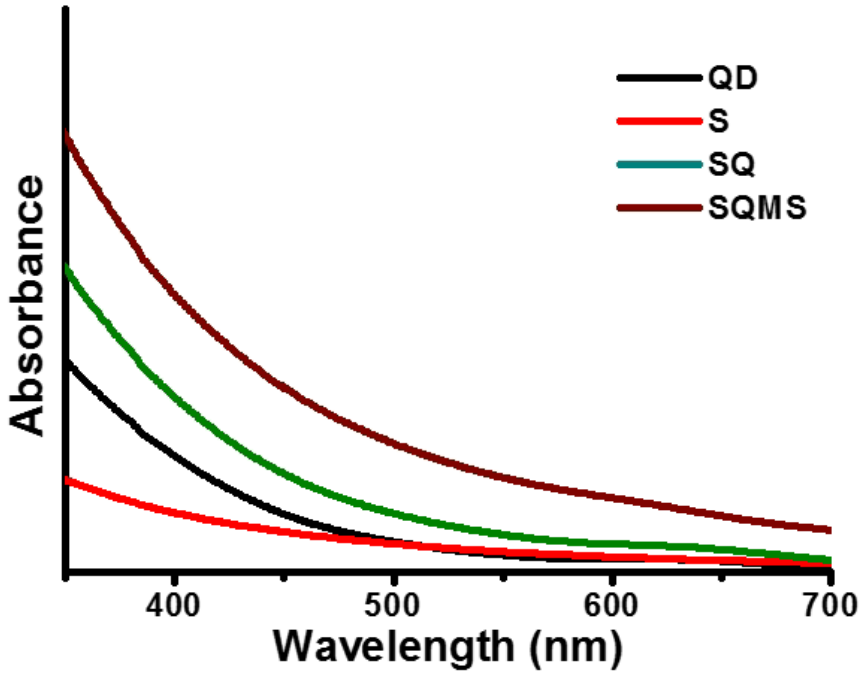


Fig. S2 UV-vis absorption spectra of samples.

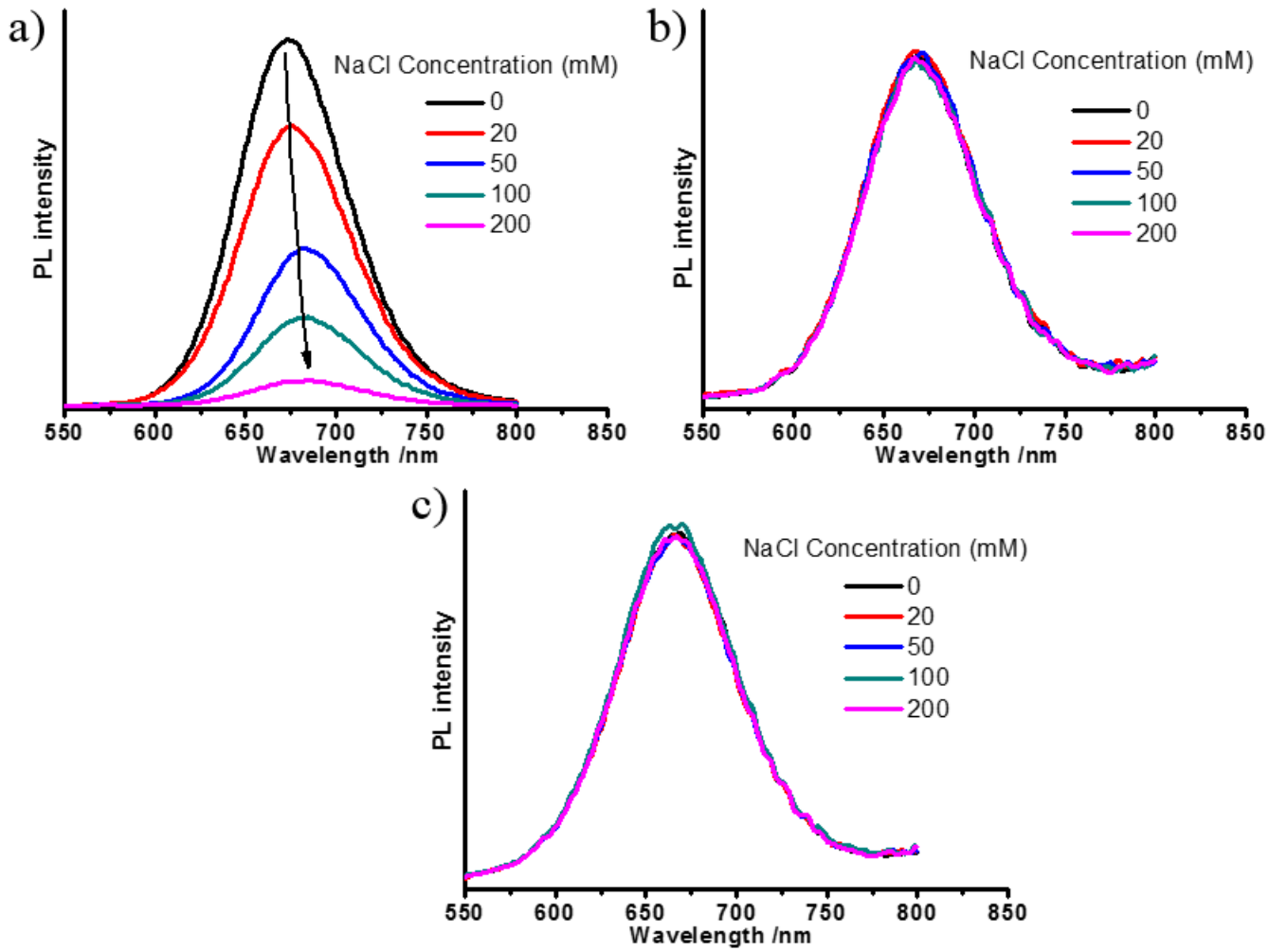


Fig. S3 Fluorescent spectra of a) QDs, b) SQS and c) SQMS in NaCl solution with different concentration.

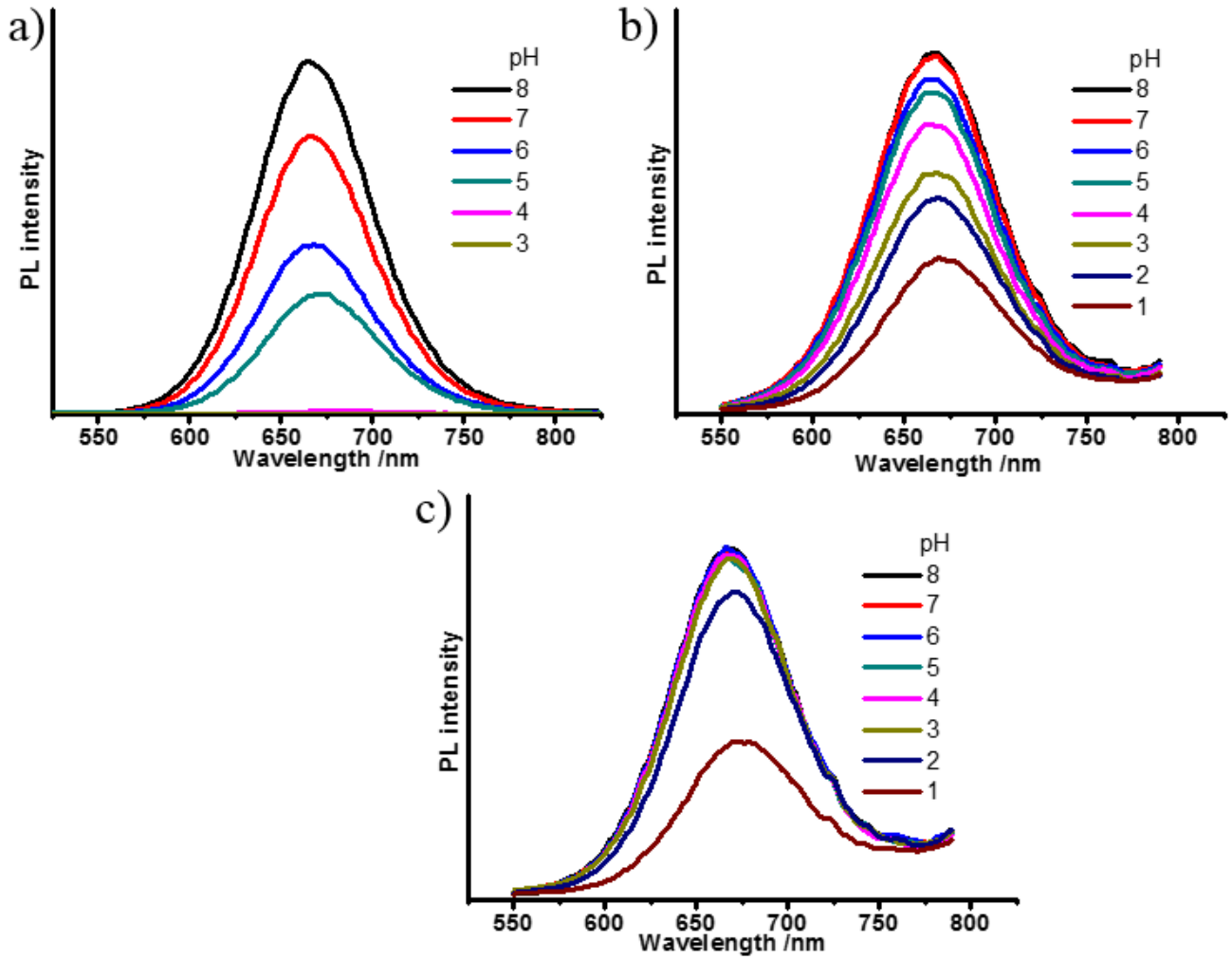


Fig. S4 Fluorescent spectra of a) QDs, b) SQS and c) SQMS in buffer solution at pH from 1 to 8.

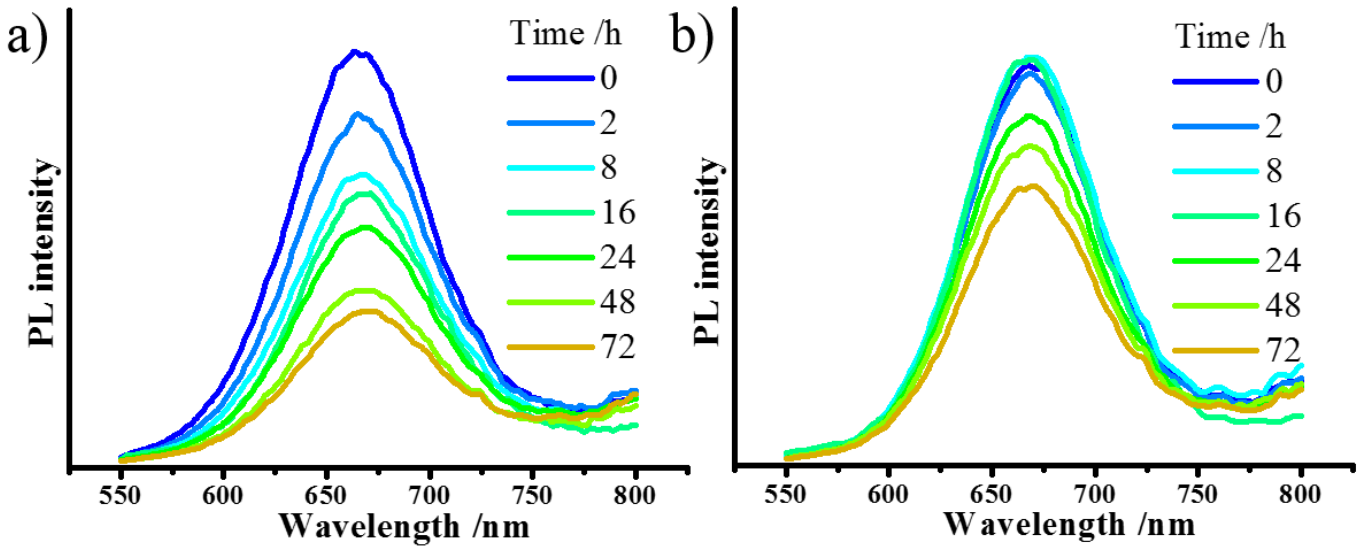


Fig. S5 Fluorescent spectra collected at certain time intervals for a) SQS and b) SQMS kept at pH 4.1.

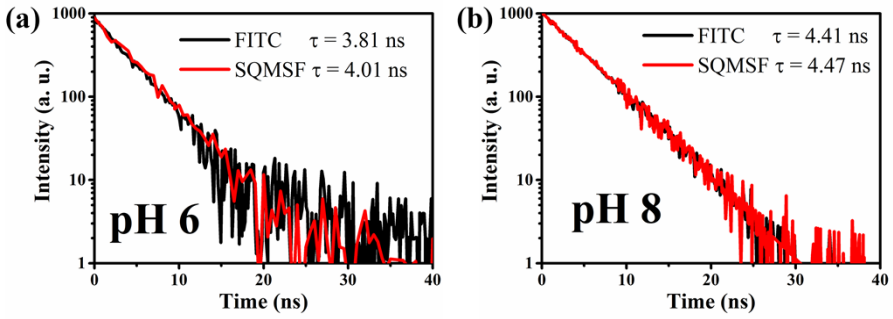
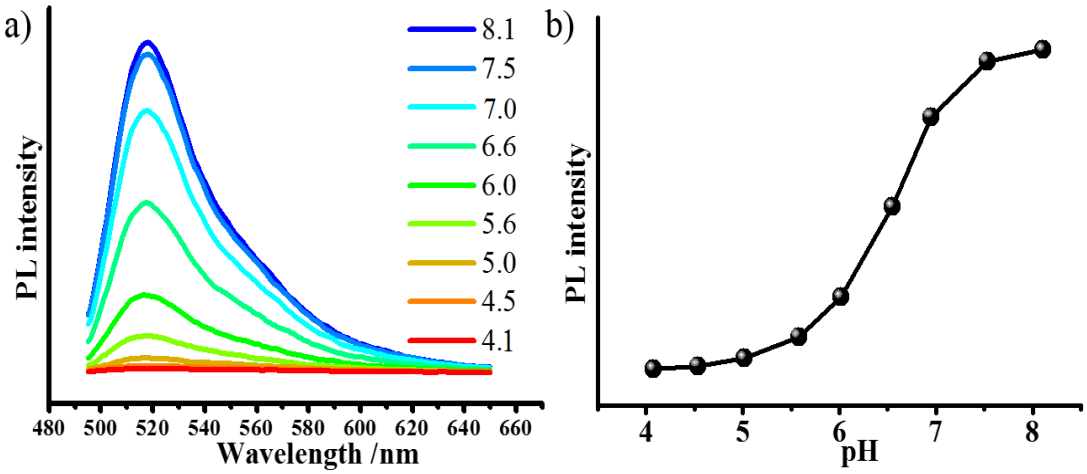


Fig. S6 Fluorescence decay traces of FITC emission in free FITC and SQMSF at pH 6 (a) and 8 (b).



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