

Supporting Information

Combining physical embedding and covalent bonding for stable encapsulation of quantum dots into agarose hydrogels

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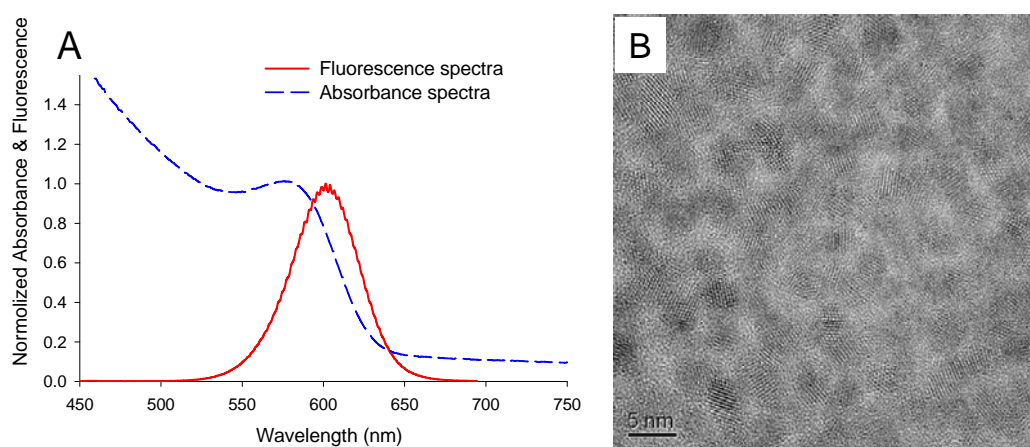


Fig. S1 (A) Absorbance and fluorescence spectra of cysteamine-capped CdSe/ZnS QDs with fluorescence peak at 15 602 nm, and (B) the HRTEM of the QDs, bar: 5 nm.

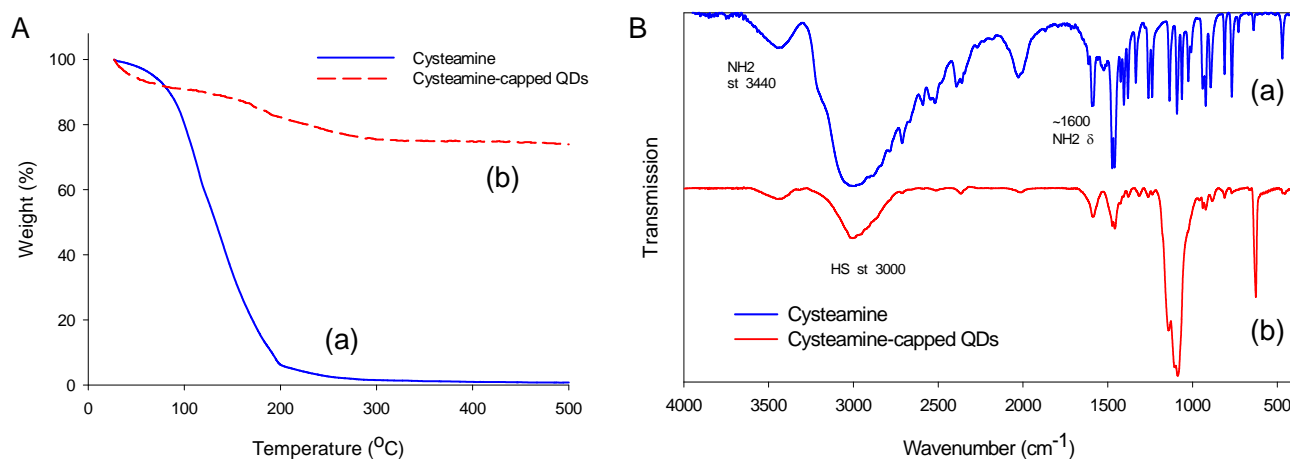


Fig. S2 (A) thermal gravity analysis of cysteamine (a) and cysteamine-capped CdSe/ZnS QDs (b); (B) FTIR spectra of cysteamine (a) and cysteamine-capped CdSe/ZnS QDs (b).

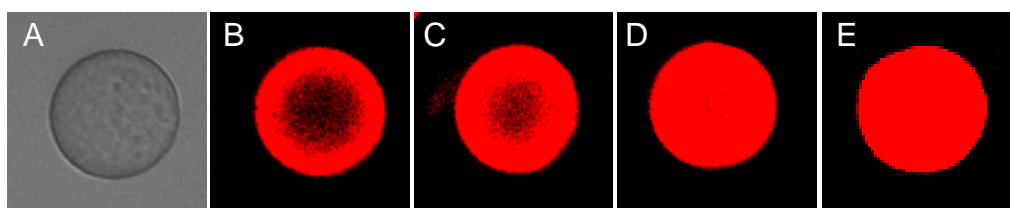


Fig. S3 Representative bright field imaging (A). Fluorescence laser confocal microscopic imaging of single QDAHMs incubated at different time (B) 1 h, (C) 2 h, (C) 3 h and (D) 4 h. Fluorescence imaging was conducted with a confocal
5 laser scanning microscopy.

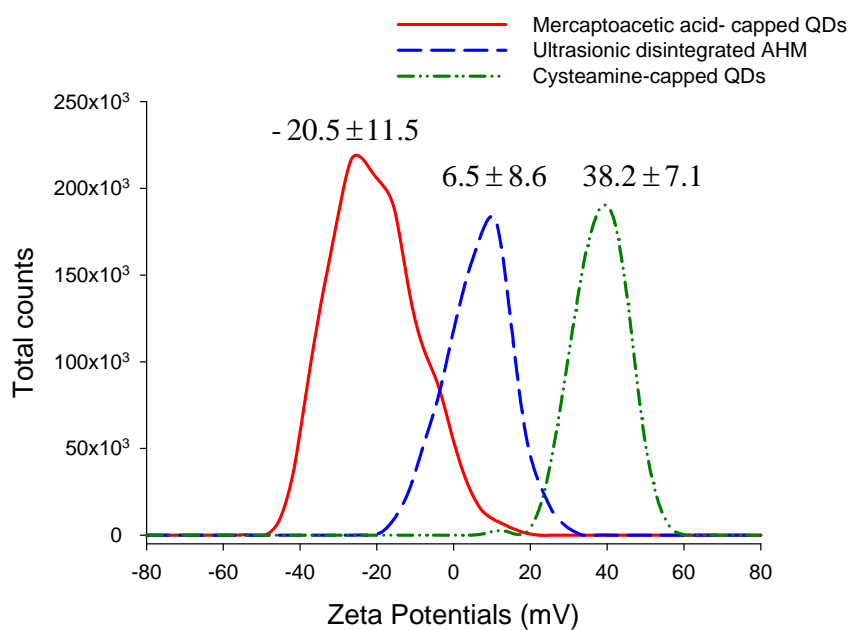


Fig S4. Zeta potential of cysteamine-capped QDs, mercaptoacetic acid-capped QDs and ultrasonic disintegrated
10 AHM.

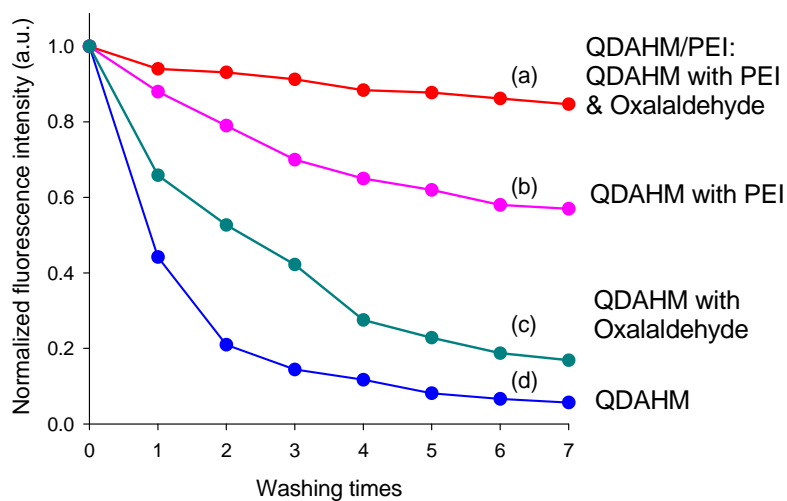
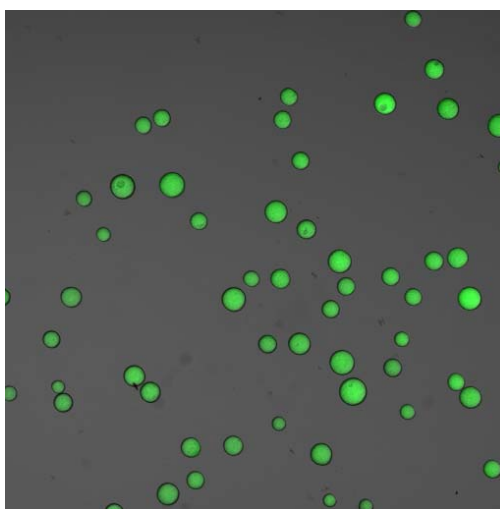


Fig. S5. Quantitative fluorescence intensity change during the washing procedure. (a) QDAHMs/PEI microgels were prepared by addition of PEI and oxalaldehyde; (b) QDAHMs/PEI microgels were prepared by addition of PEI alone (no oxalaldehyde); (c) QDAHMs/PEI microgels were prepared by addition of oxalaldehyde alone (no PEI); (d) QDAHMs without addition of oxalaldehyde and PEI.

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10 Fig. S6 Fluorescence imaging of QDAHMs/PEI-FITC. QDAHMs/PEI-FITC was prepared instead of PEI with PEI-FITC.

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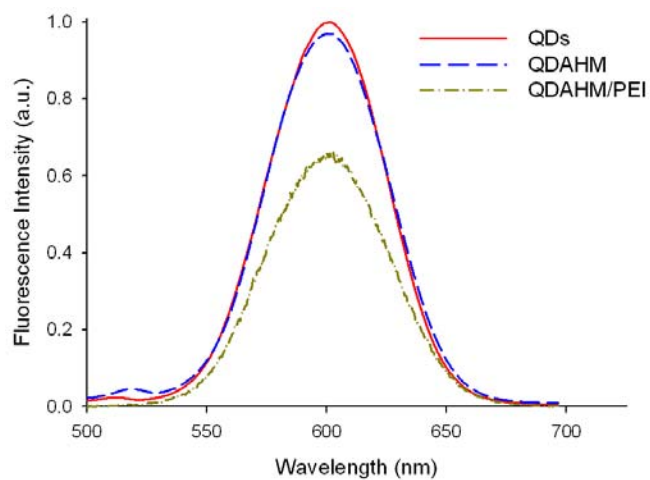


Fig. S7 Fluorescence spectra of QDs during the encapsulation procedures.

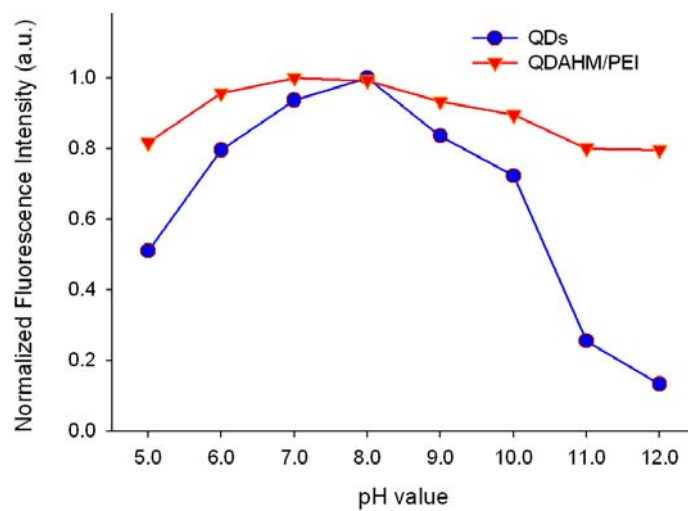


Fig. S8 pH dependency of the fluorescence intensity of QDs and QDAHMs/PEI