Electronic Supplementary Material (ESI) for New Journal of Chemistry.

Supplementary information

Preparation of "pomegranate"-like QDs/SiO_2/Poly(St-co-MAA) fluorescent nanobeads with two steps to improve stability and biocompatibility

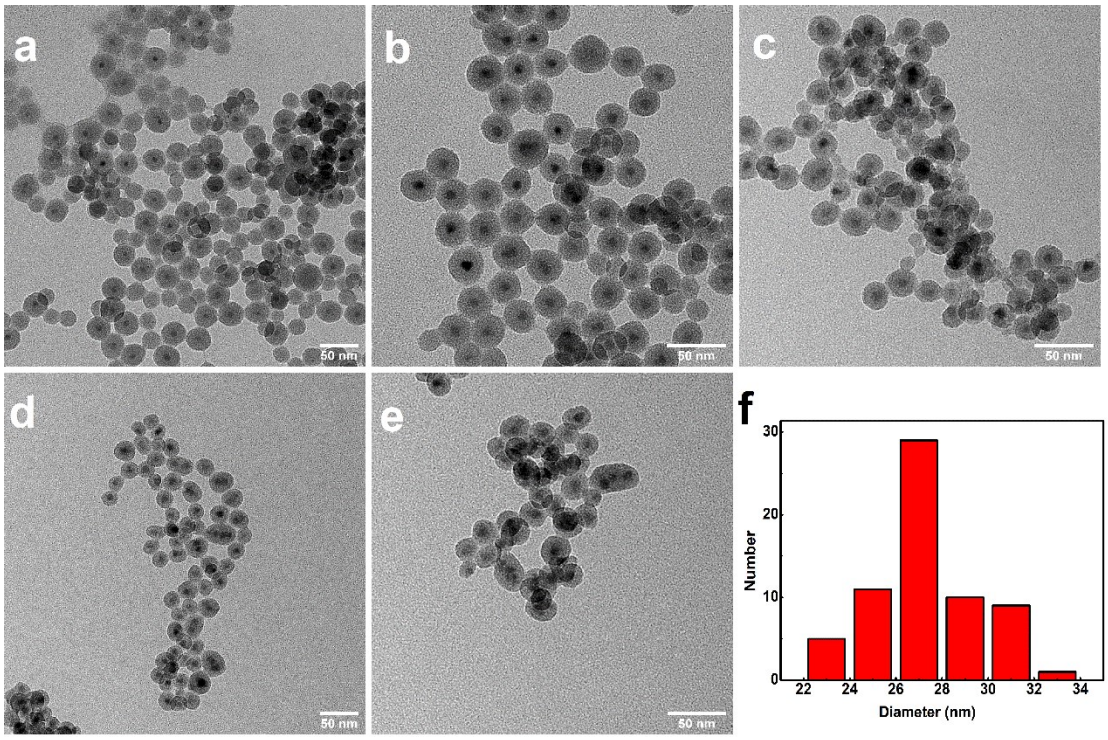


Figure S1 TEM images of QSI-C=C nanobeads with different volume in reverse microemulsion method **(a)** 200μL; **(b)** 400μL; **(c)** 600μL; **(d)** 800μL; **(d)** 1000μL; **(f)** Size distribution of (b) 400μL.

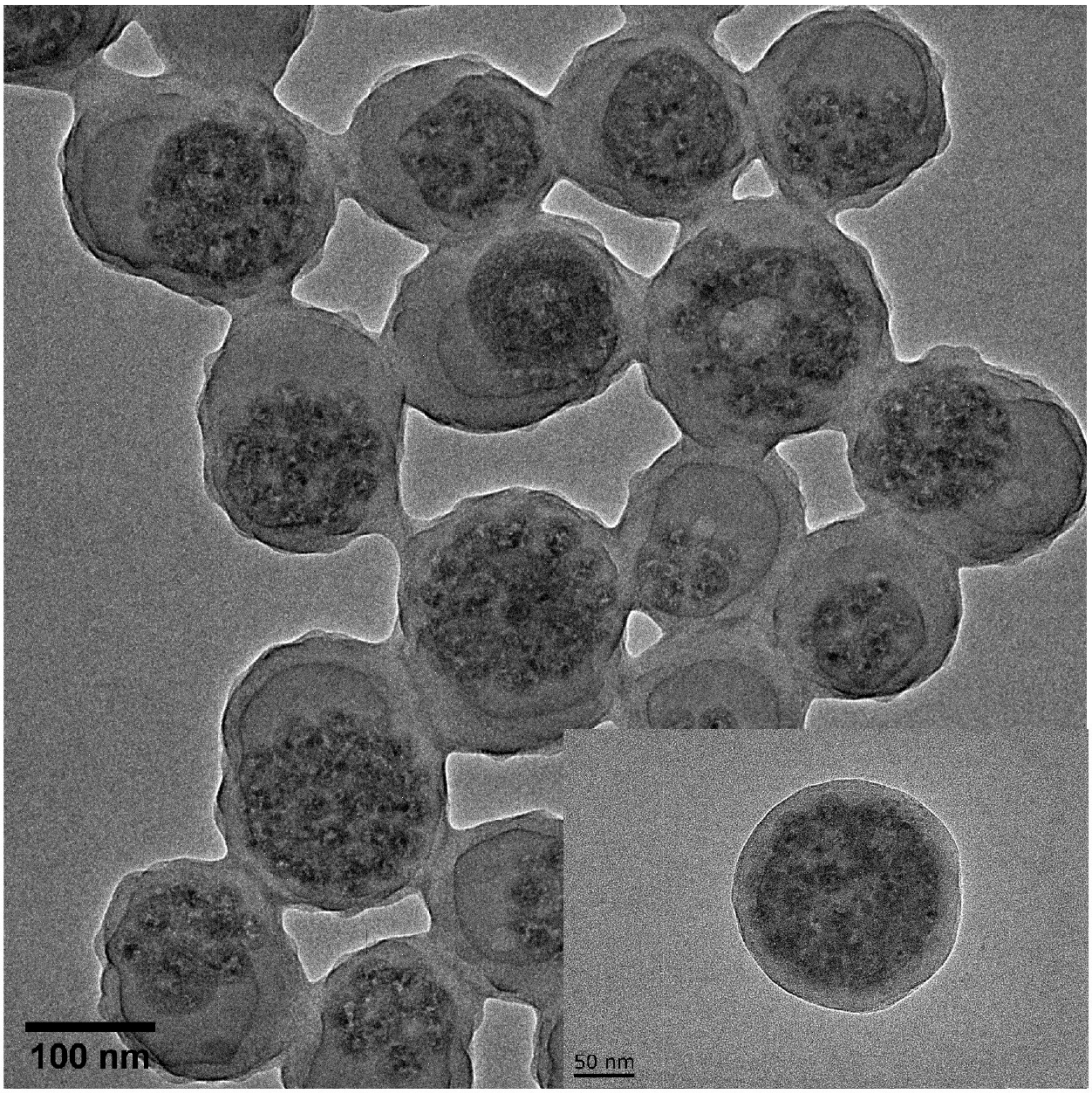
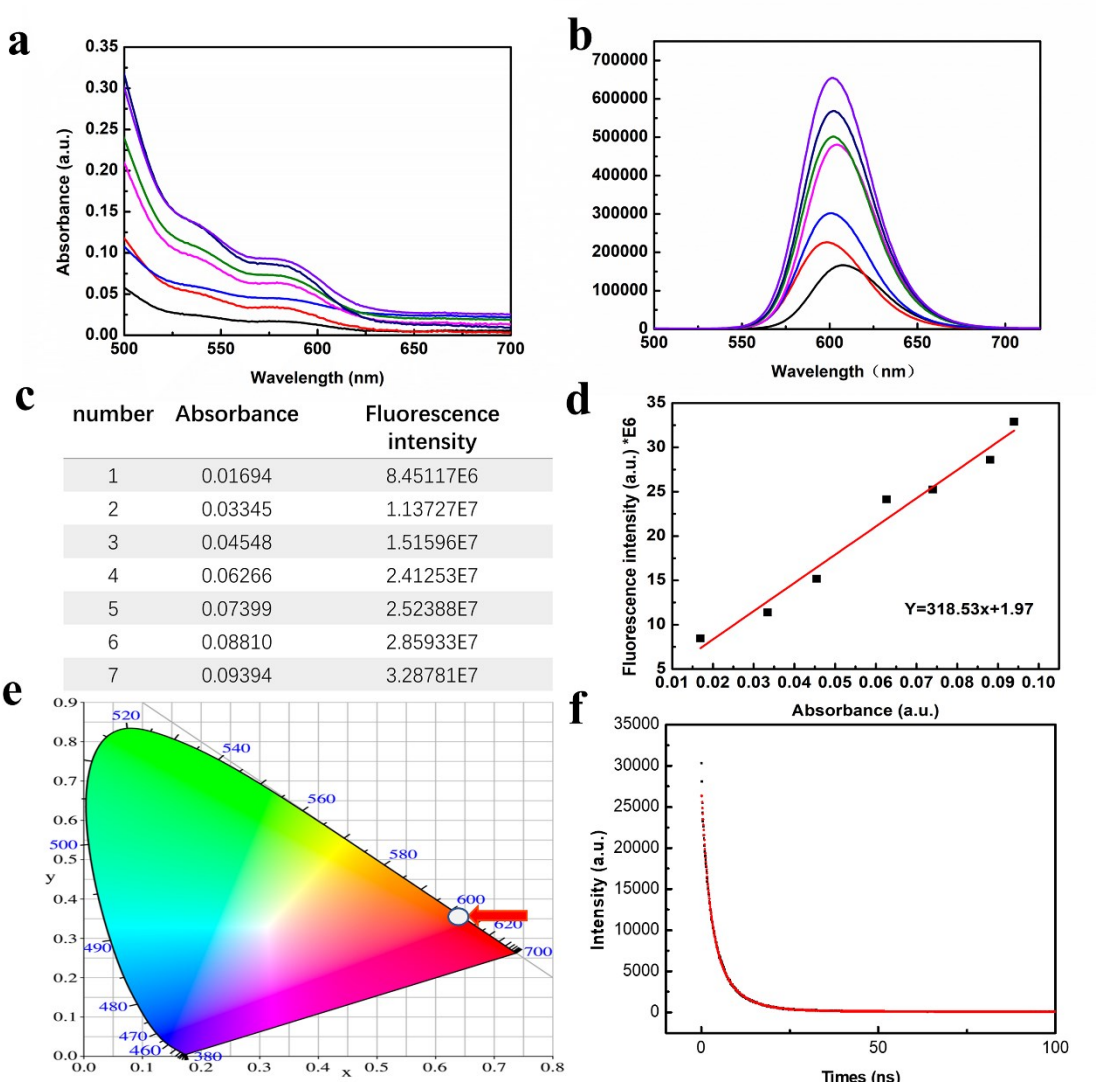


Figure S2 TEM images of QSIP-COOH nanobeads.



number	Absorbance	Fluorescence intensity
1	0.01694	8.45117E6
2	0.03345	1.13727E7
3	0.04548	1.51596E7
4	0.06266	2.41253E7
5	0.07399	2.52388E7
6	0.08810	2.85933E7
7	0.09394	3.28781E7

Figure S3 (a) Absorbance and **(b)** Fluorescence intensity of QDs; **(c)** Data and **(d)** Analysis of a and b; **(e)** The chromaticity diagram of QDs; **(f)** The fluorescence lifetime of QDs.

Table S1 Test results of different levels of the inter-assay coefficient of variation and intra-assay coefficient of variation of the ICTS based on QSIP-COOH nanobeads.

the concentration of HCG antigen (ng/mL)	the inter-assay coefficient of variation (inter-CV%, n=3)	intra-assay coefficient of variation (intra-CV%, n=3)
1000	7.80	7.45
	8.13	
	6.41	
500	8.47	10.16
	11.35	
	10.68	
250	10.84	12.24
	12.57	
	13.33	