Electronic Supplementary Material (ESI) for RSC Advances.

Supplementary Data

Potential Panorama of Carbon dots as Fluorescence Sensing Probe for metal ions

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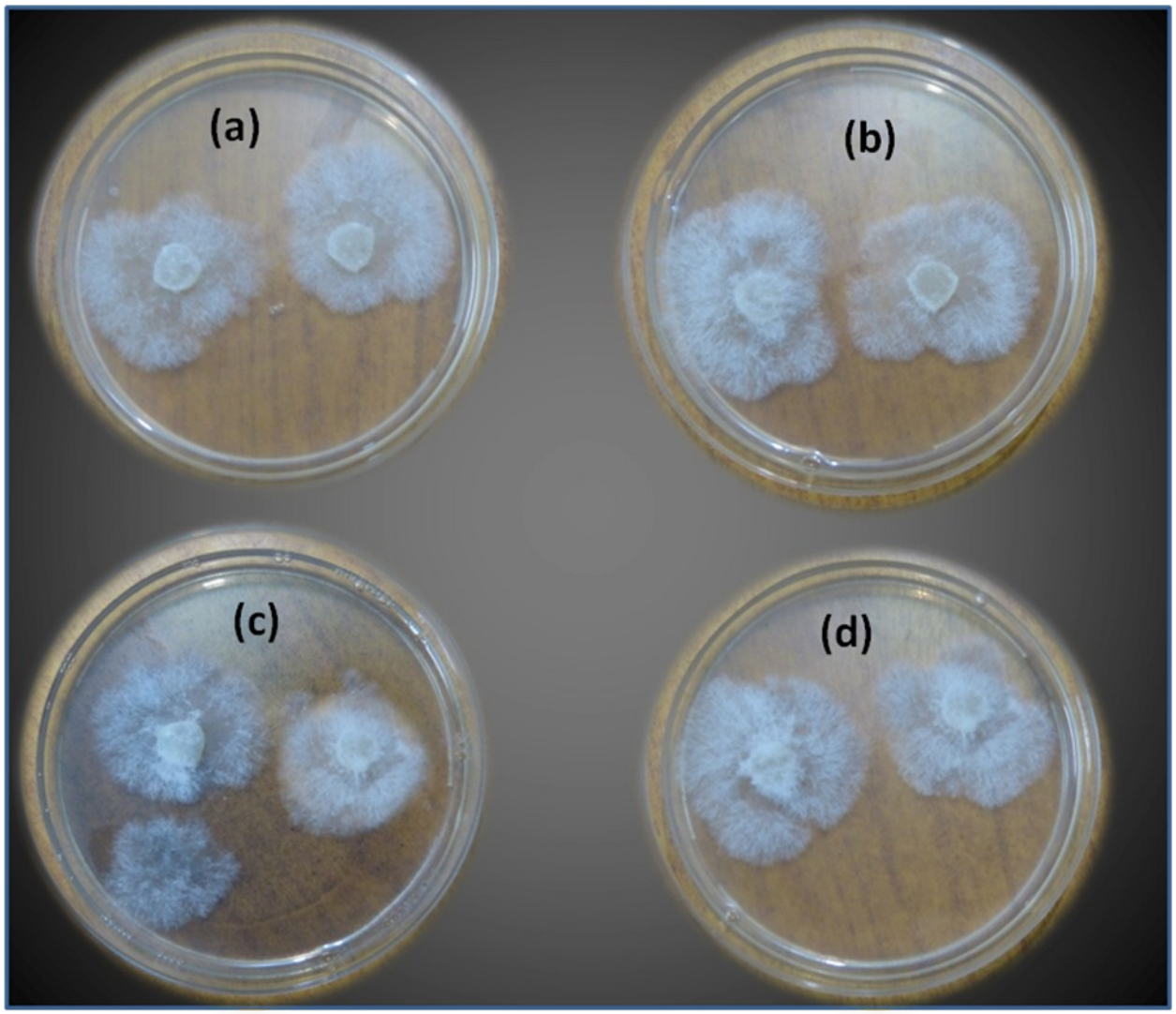

Fig. S1. The corresponding antifungal activity of (a) CQD_1, (b) CQD_2, (c) CQD_3 and (d) CQD_4

Table S1. The corresponding Elemental analysis results for four different kinds of CQDs.

Samples	C%	H%	N%	O%
CQD_1	60.4	4.21	0.5	34.99
CQD_2	61.3	3.8	0.42	34.48
CQD_3	59.7	4.1	0.4	35.8
CQD_4	61.07	3.78	0.48	34.67

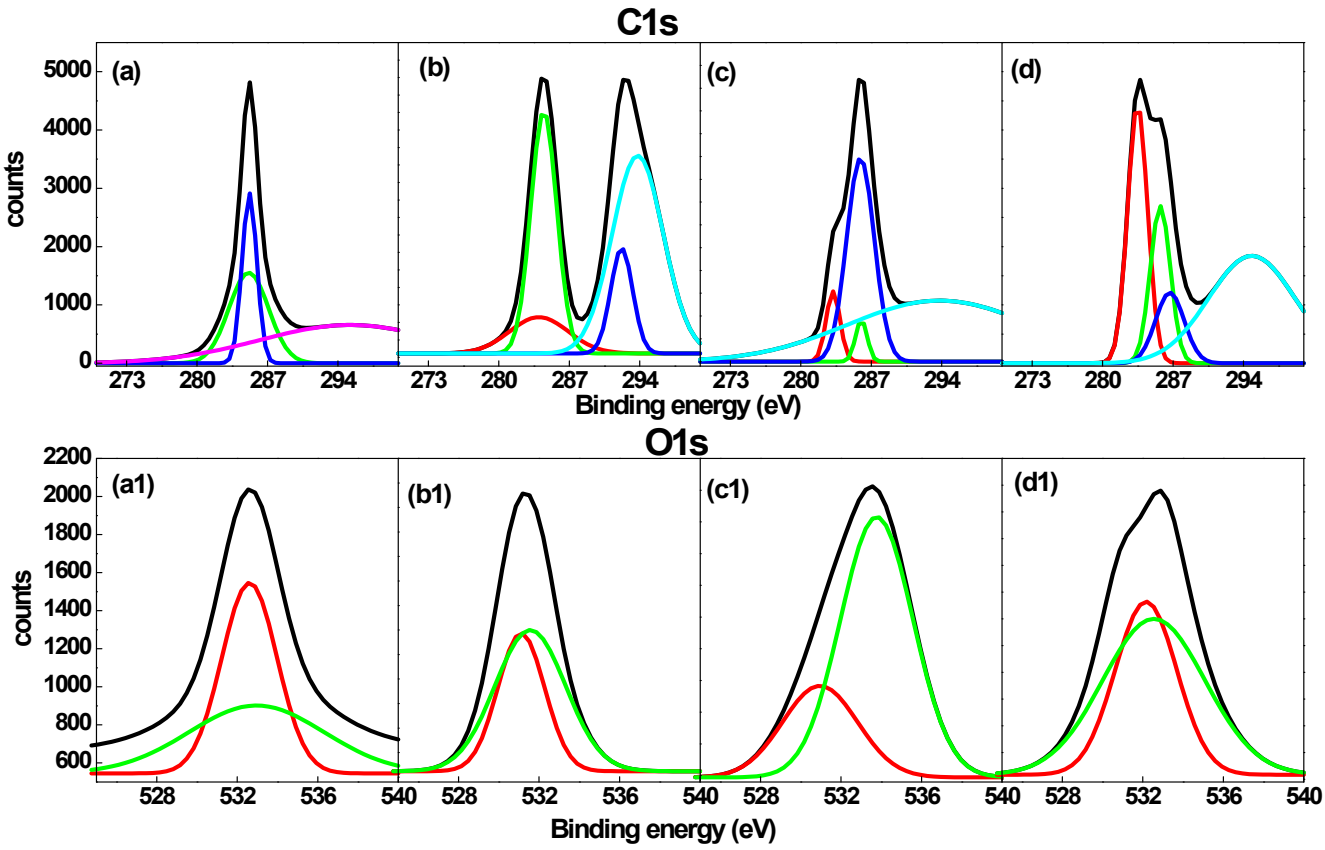

Fig. S2. High resolution deconvoluted peaks of C1s and O1S for (a, a1) CQD_1, (b, b1) CQD_2, (c, C1) CQD_3 and (d, d1) CQD_4 respectively.

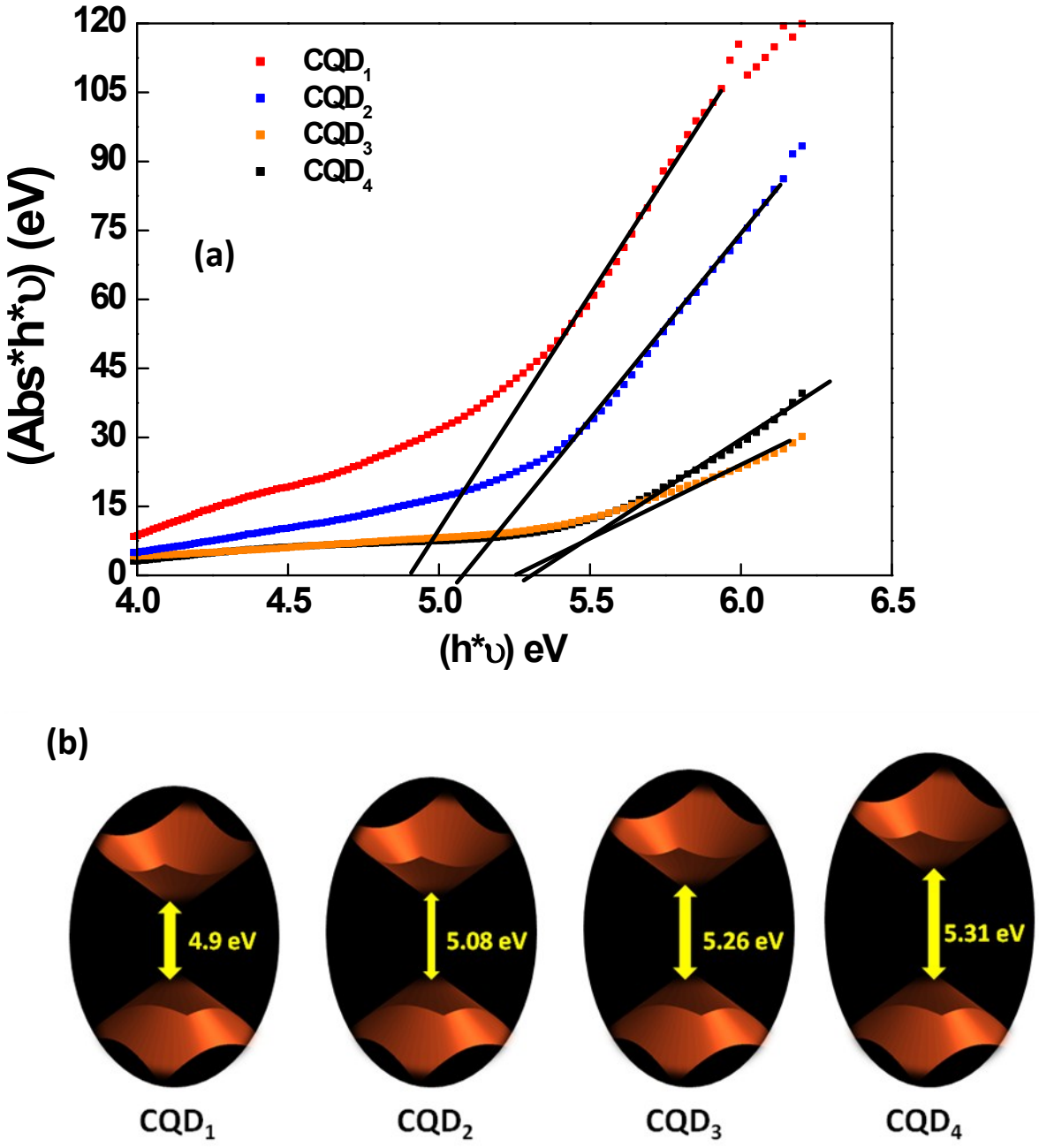

Fig. S3. (a) Tauc plots and (b) corresponding band gap values of four different kind of CQDs.

Table S2. The corresponding positioning, area under the curve and the FWHM for four different kinds of CQDs.

Sample	Peak one			Peak 2			Peak 3		
	Peak position (nm)	Area	FWHM	Peak position (nm)	Area	FWHM	Peak position (nm)	Area	FWHM
CQD_1	341.8	9.3×10^4	45.4	421.2	1.57×10^5	80.9	515	9.8×10^3	65.6
CQD_2	356.4	1.0×10^4	42.8	426.9	1.06×10^5	56.6	456.64	7.7×10^4	95.2
CQD_3	343	9.7×10^3	30.7	356.8	9.9×10^3	53.9	394.2	1.6×10^4	126.7
CQD_4	350	3.4×10^4	27.9	421.4	1.4×10^4	84.9	497.4	3.2×10^3	166.1

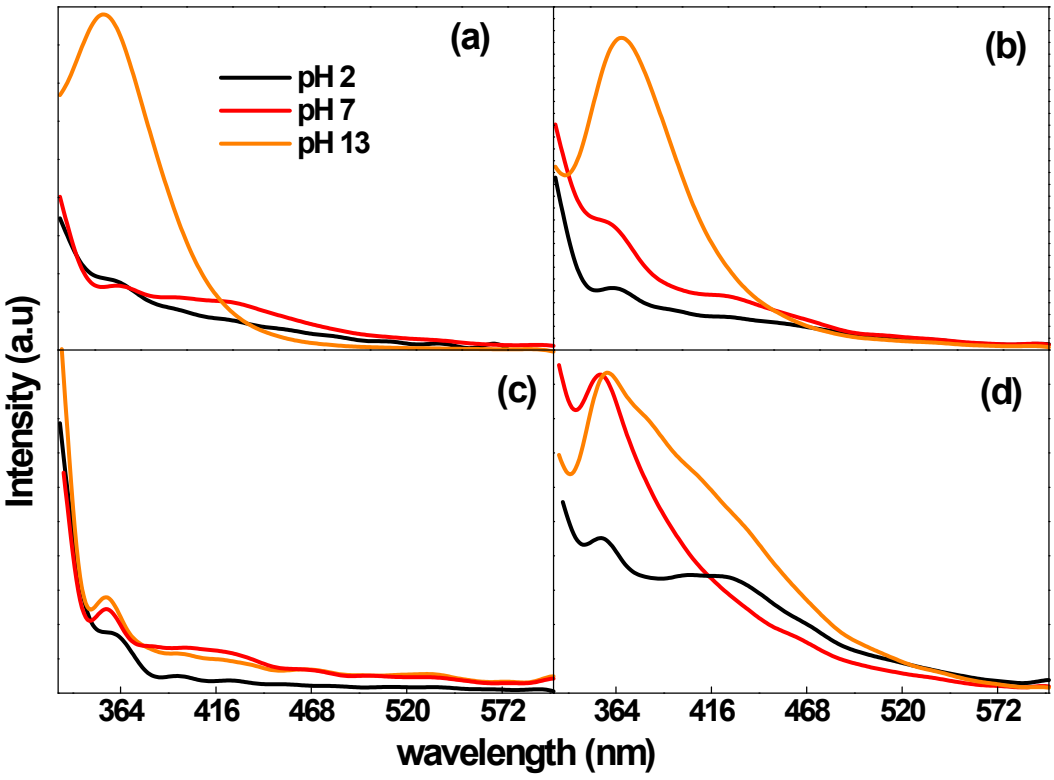

Fig. S4. Effect of different pH values on the emission spectra of (a) CQD_1, (b) CQD_2, (c) CQD_3 and (d) CQD_4.

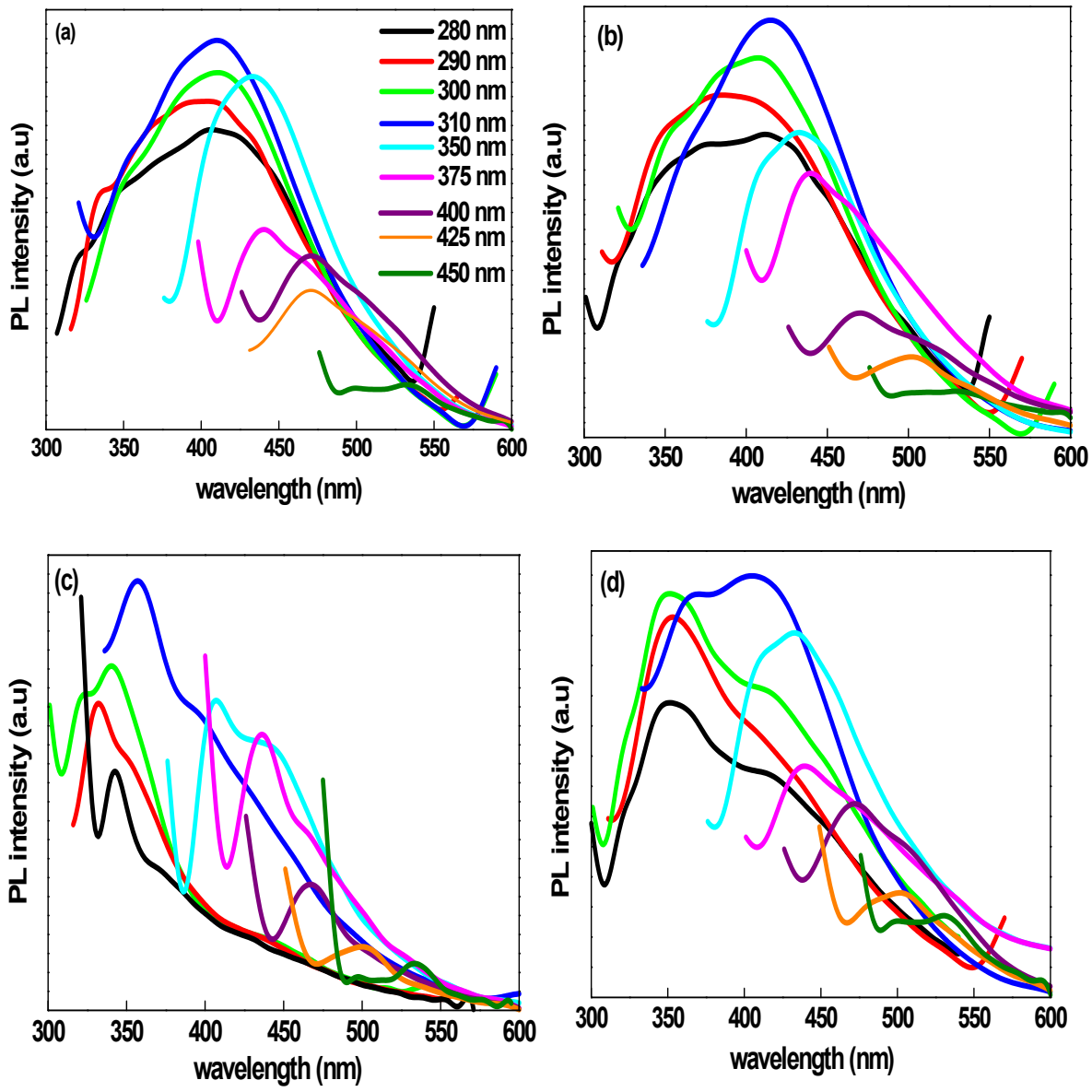

Fig. S5. Excitation dependent fluorescence spectra of (a) CQD_1, (b) CQD_2, (c) CQD_3 and (d) CQD_4.

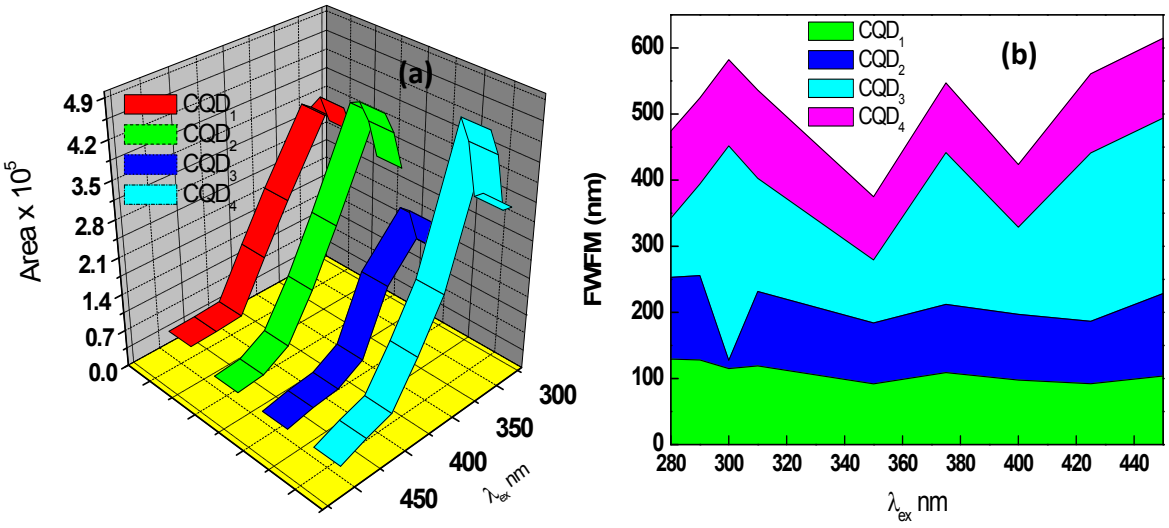

Fig. S6. Varaiton of (a) area under the curve and (b) full width at half maximum (fwhm) as function of λ_{ex} for different kind of CQDs.

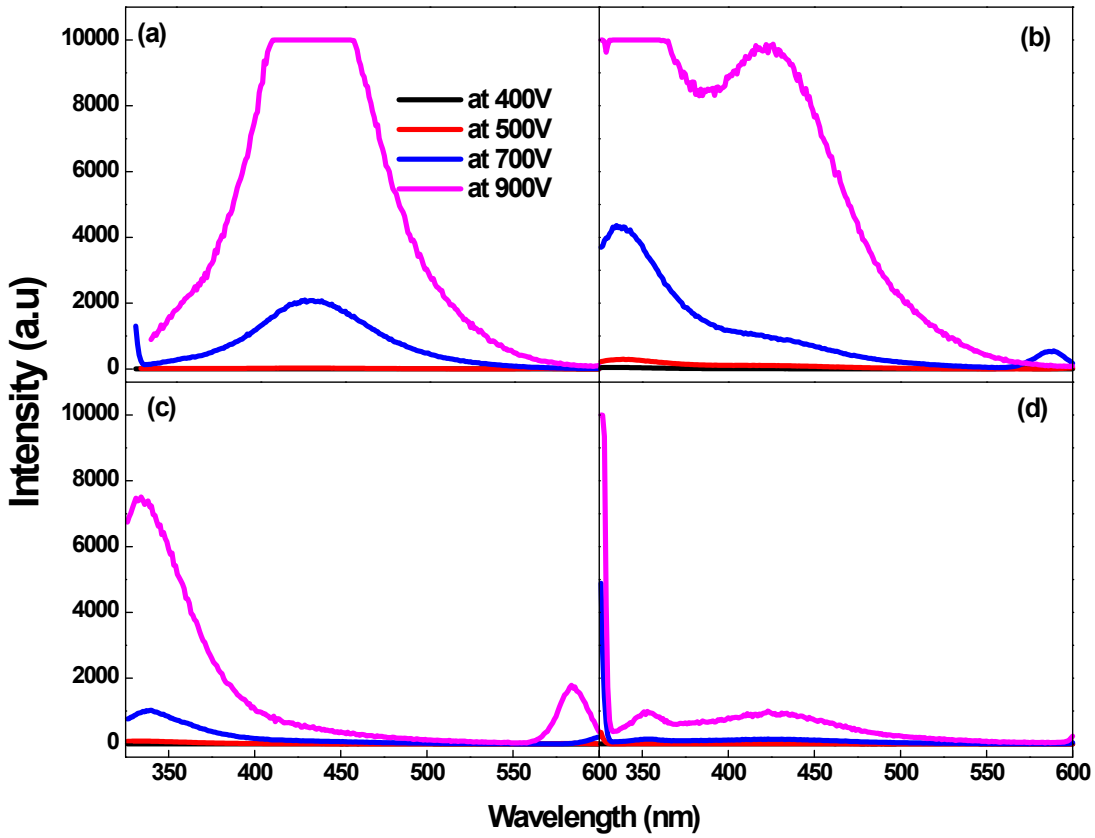

Fig. S7. Effect of different applied votage on the emission spectra of (a) CQD_1, (b) CQD_2, (c) CQD_3 and (d) CQD_4.

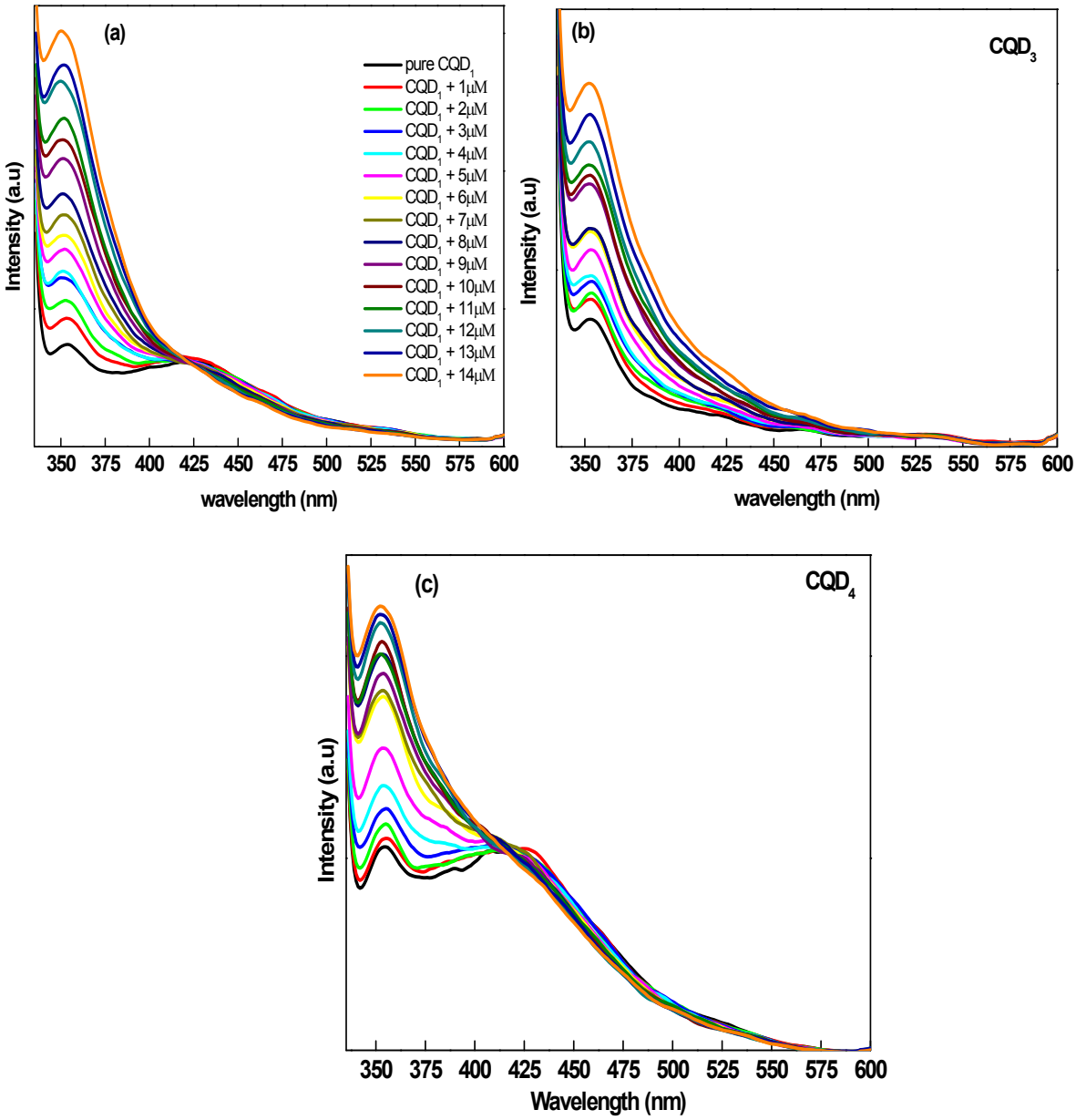

Fig. S8. Fluorescence emission spectra of (a) CQD_1 (b) CQD_3 and (c) CQD_4 in the presence of various concentrations of Cr^{3+} ion.

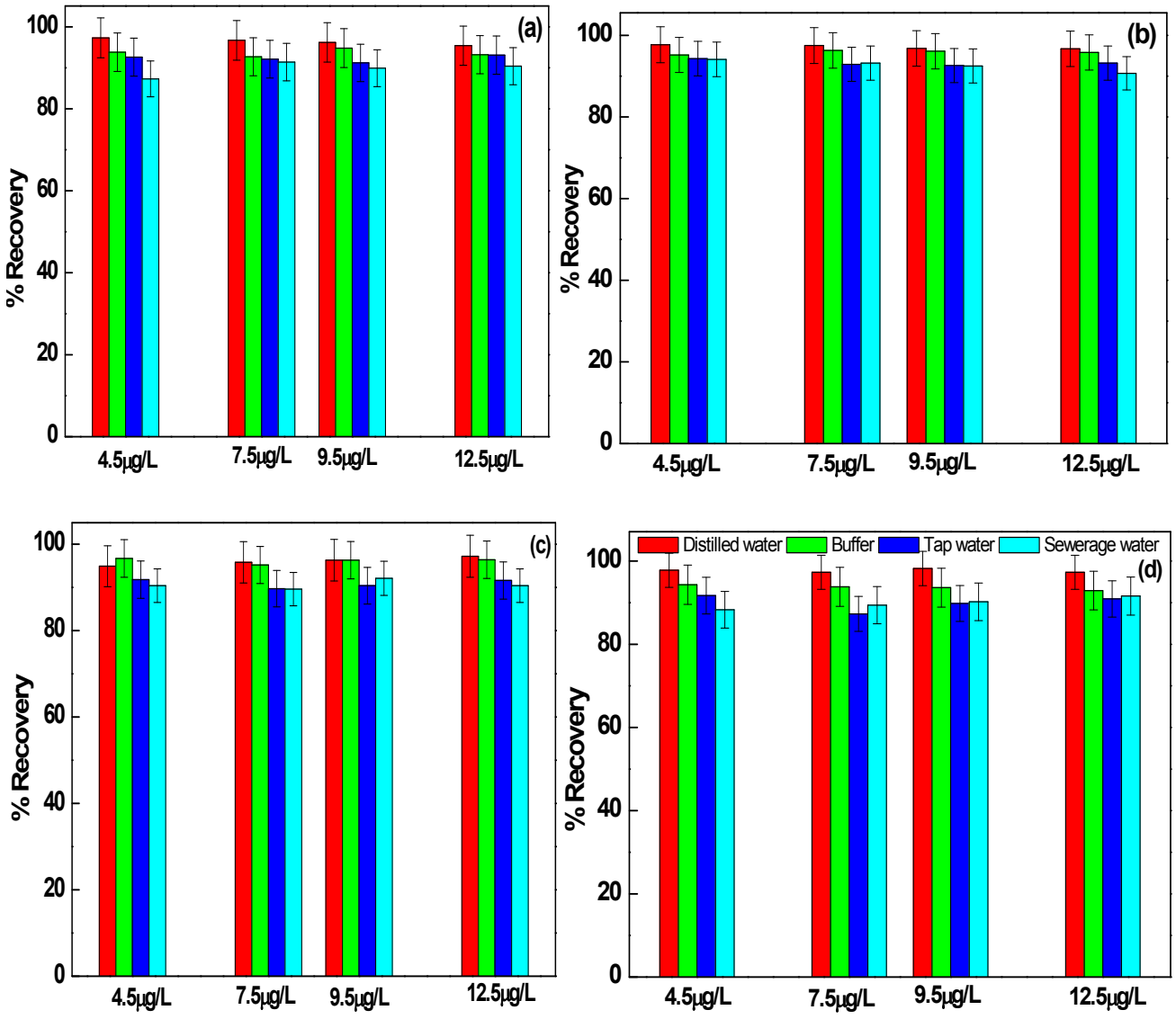

Fig. S9. The percentage recovery of Cr^{3+} ions from distilled water, buffer solution and tap water by using (a) CQD_1, (b) CQD_2, (c) CQD_3 and (d) CQD_4.