Electronic Supplementary Material (ESI) for Chemical Communications

Organophosphorus Acid Anhydrolase Bio-Template for the Synthesis of CdS Quantum Dots

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Supporting Information

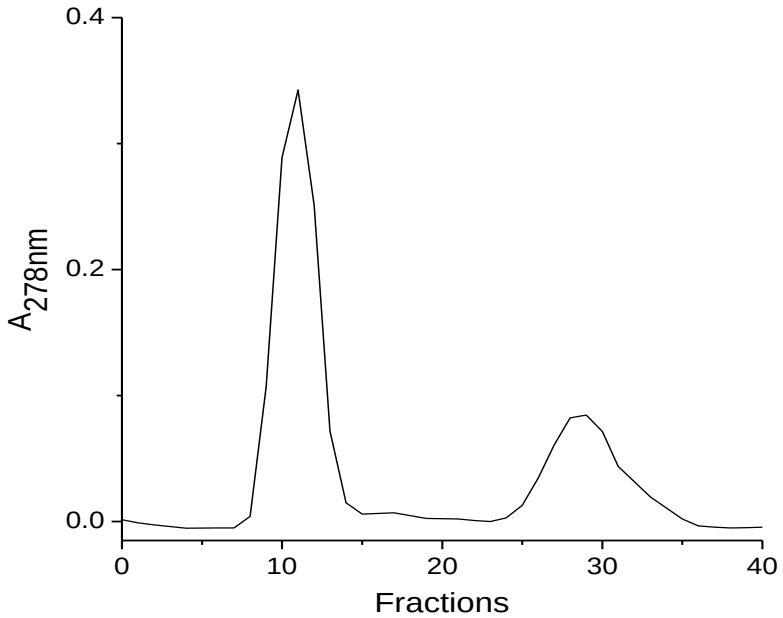

Fig. S1 Absorption spectrum of the fractions at 278 nm.

The OPAA-CdS QDs and excess OPAA were eluted by the Borax/HCl (pH 8.5) buffer through a 2.22 x 22.25 cm (Diameter x Height) Sephadex G75 column (Fig. S1). Each 3 mL fraction was collected and measured by UV-vis spectroscopy. The fractions 11 and 29 correspond to OPAA and OPAA-CdS QDs, respectively.

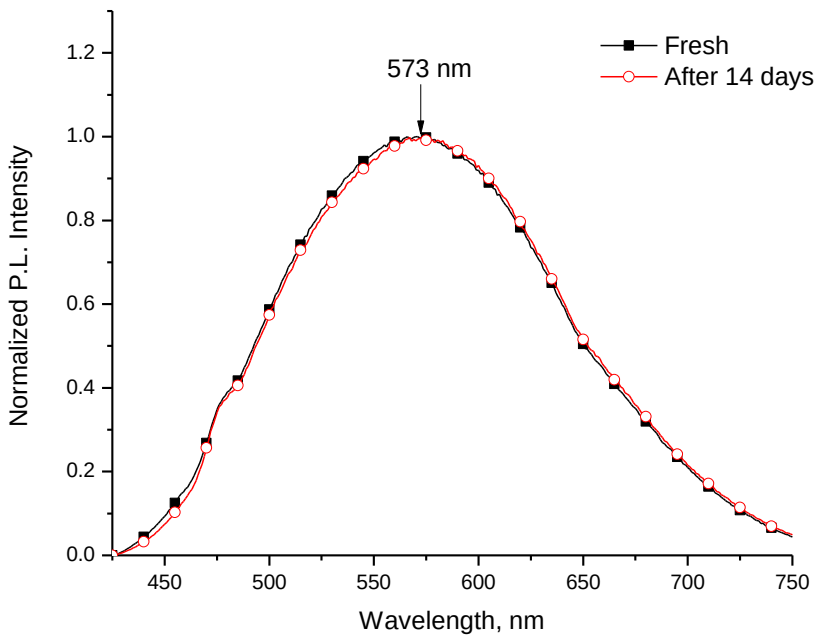

Fig. S2 Photoluminescence (PL) spectra of OPAA-CdS QDs in buffer both newly synthesized and after 14 days. The two spectra were normalized due a fluctuation in the instrument source intensity however the maxima remain at the same position.

	Fraction of Secondary Structure (%)					
	α-helix		β-strand		Other	
	regular	distorted	regular	distorted	turn	Unordered
OPAA	24.1	21.3	7.9	10.1	18.1	18.2
OPAA-CdS QDs	23.1	20.7	10.7	6.8	19.8	16.9

Table S1 Fraction of secondary structure (%) of OPAA and OPAA-CdS QDs.

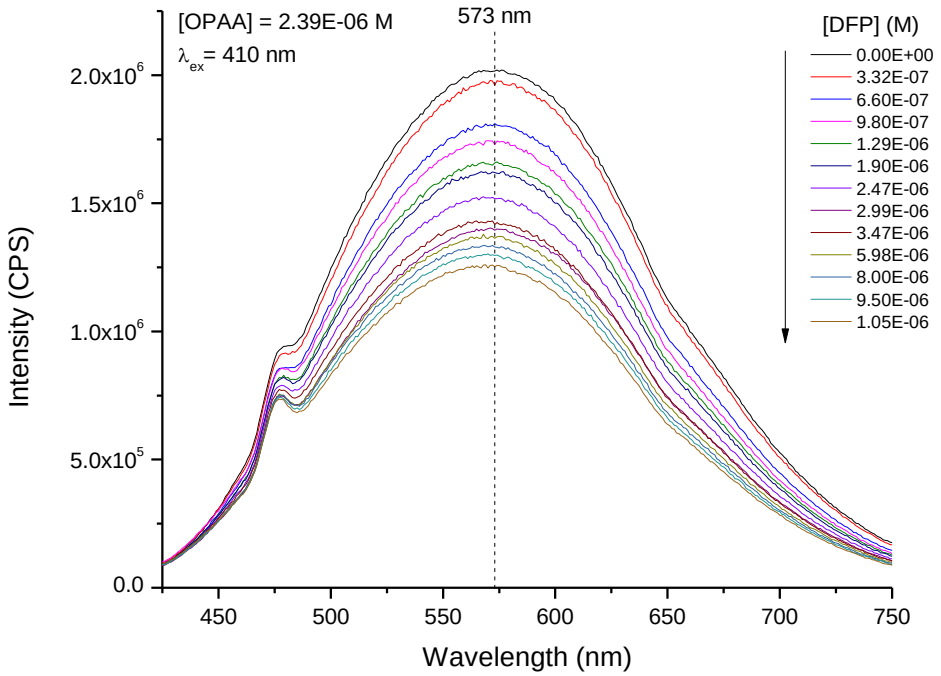

Fig. S3 PL spectra of OPAA-CdS QDs solution in presence of DFP at different concentrations.

1.5E-2

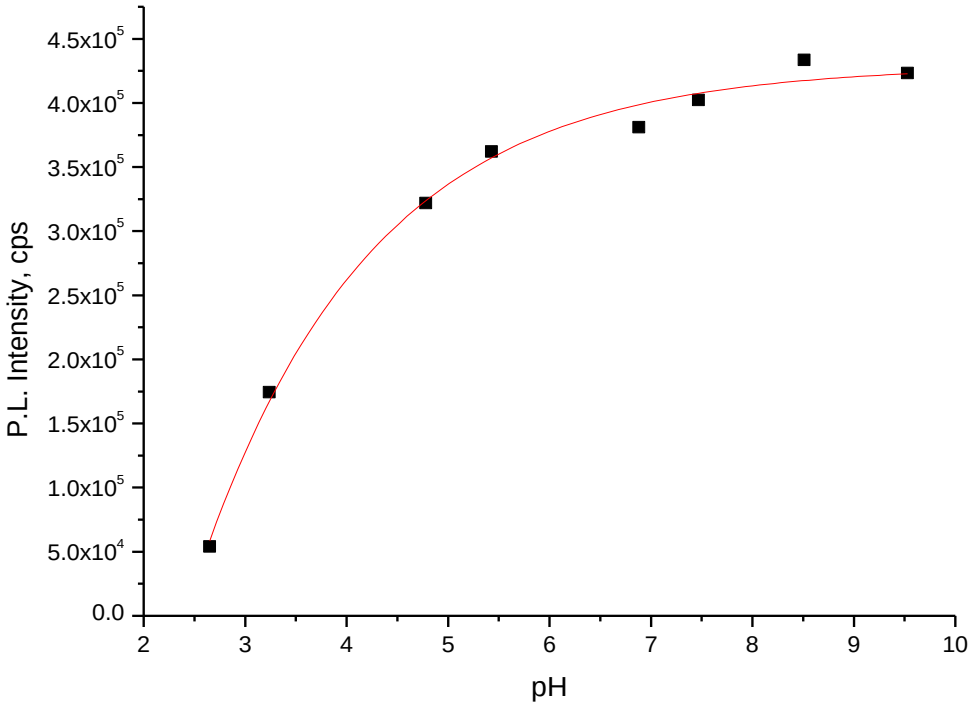

Fig. S4 Effect of pH on PL Intensity of OPAA-CdS QDs.

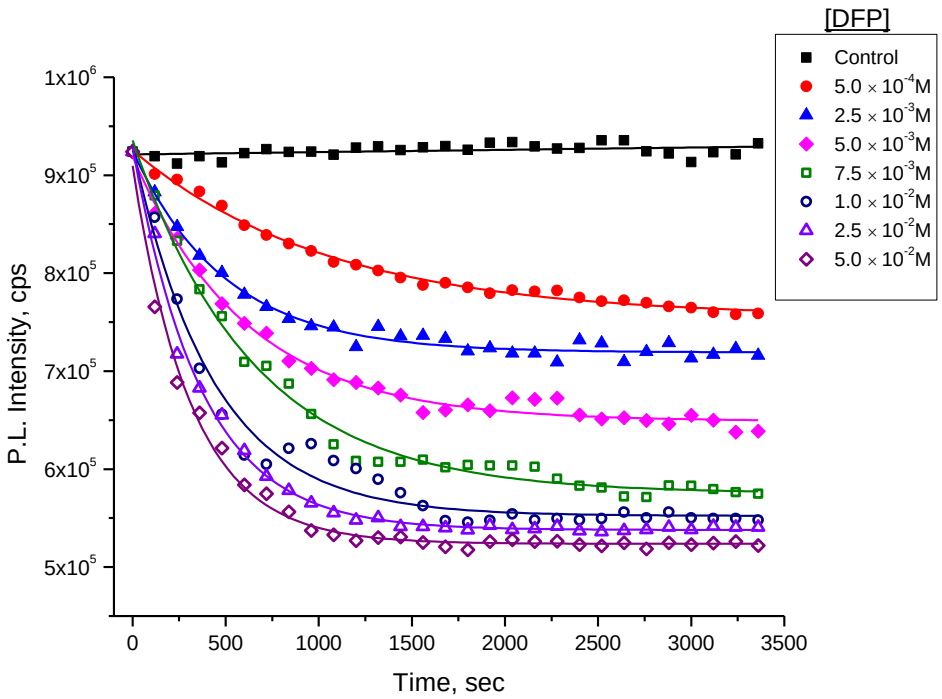

Fig. S5 OPAA-CdS QD PL quenching as a function of time in different concentrations of DFP.

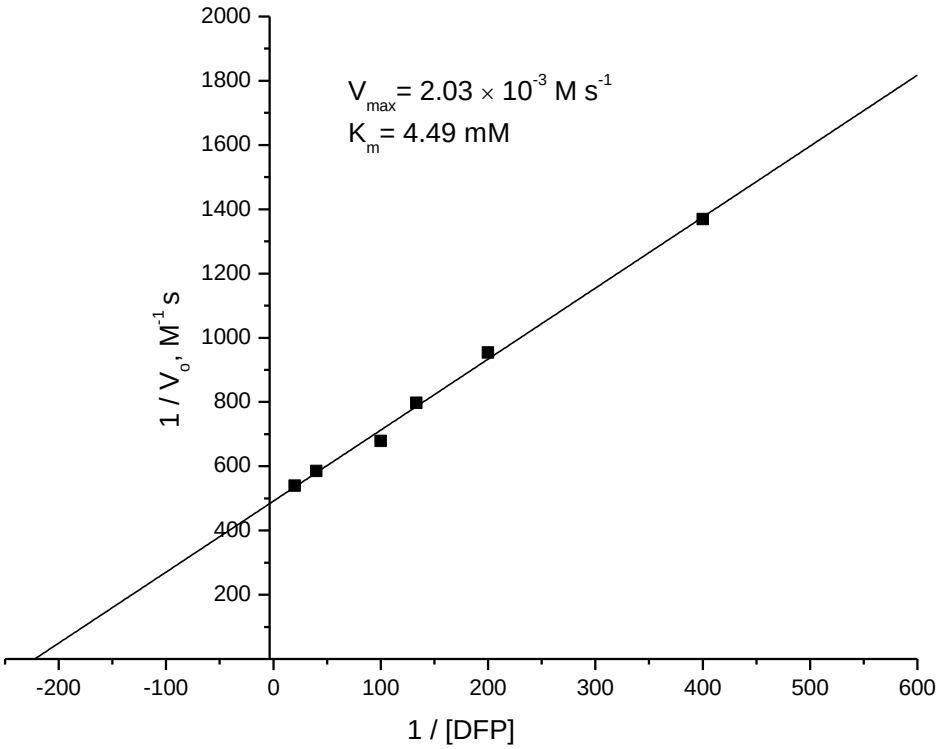

Fig. S6 Lineweaver-Burk plot of OPAA-CdS QD PL quenching. (Adj r^2 = 0.996)