

Electronic Supplementary Information

Test strips for detection of 4-nitrophenol based on fluorescence quenching and color change of black phosphorus quantum dots

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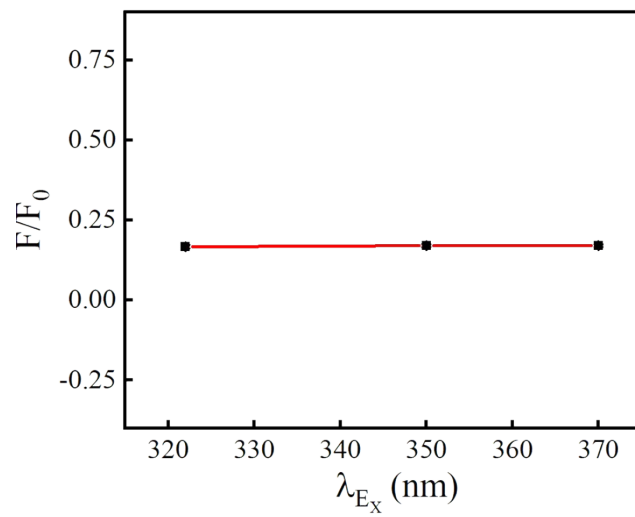


Fig. S1 The relationship between the fluorescence intensity ratio of BPQDs+4-NP and BPQDs

(F/F_0) and the excitation wavelength

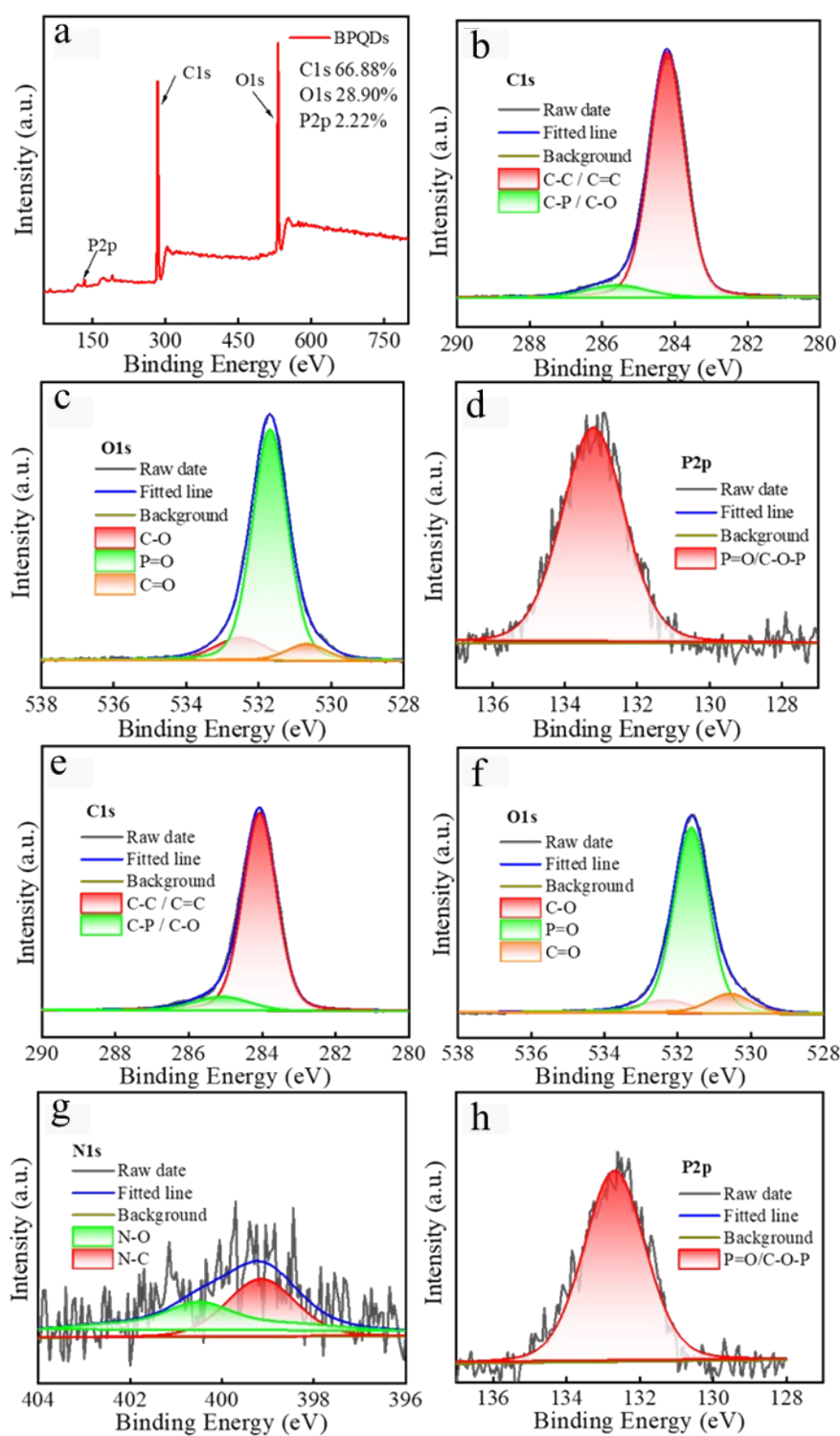


Fig. S2 a Full-scan XPS spectrum and HR-XPS spectra of **b** C1s, **c** O1s, **d** P2p for BPQDs, and

HR-XPS spectra of **e** C1s, **f** O1s, **g** N1s, **h** P2p for BPQDs+4-NP

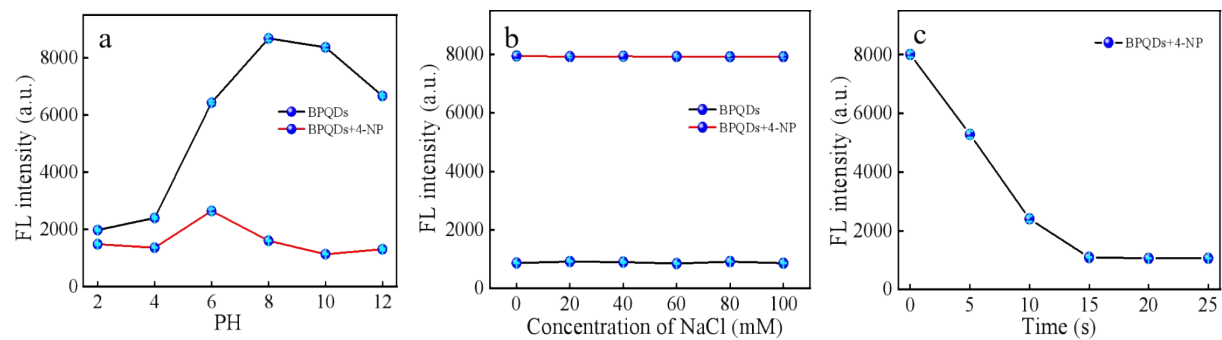


Fig. S3 Effect of **a** pH, **b** ionic strength on the fluorescence intensity of BPQDs and BPQDs+4-NP, **c** influence of reaction time on the 4-NP detection

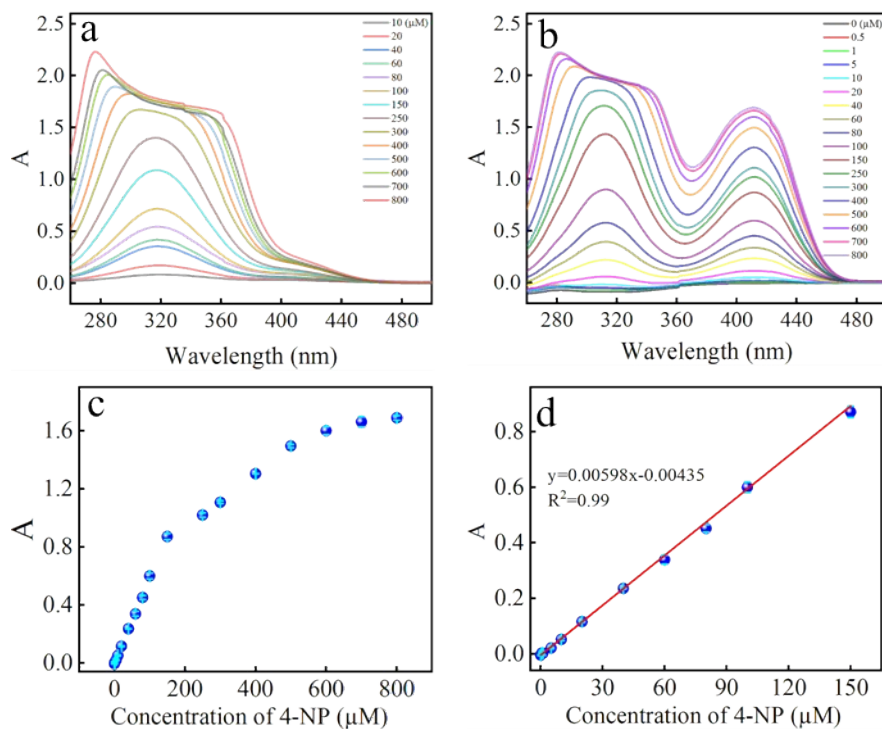


Fig. S4 **a** Absorption spectra of 4-NP with different concentrations, **b** absorption spectra of BPQDs with different concentrations of 4-NP, **c** the relationship between absorbance at 410 nm and concentration of 4-NP, **d** linear correlation between absorbance and concentration of 4-NP

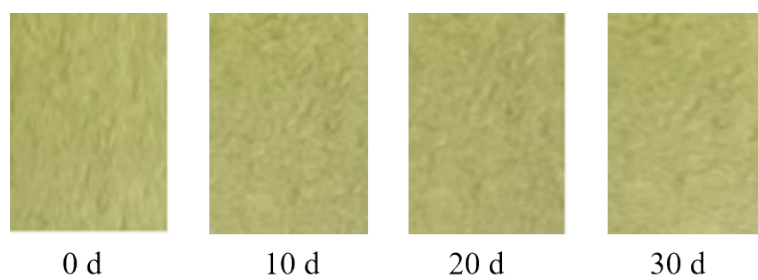


Fig. S5 Stability evaluation of test strips uploaded by BPQDs+4-NP stored at 4 °C over 30 days

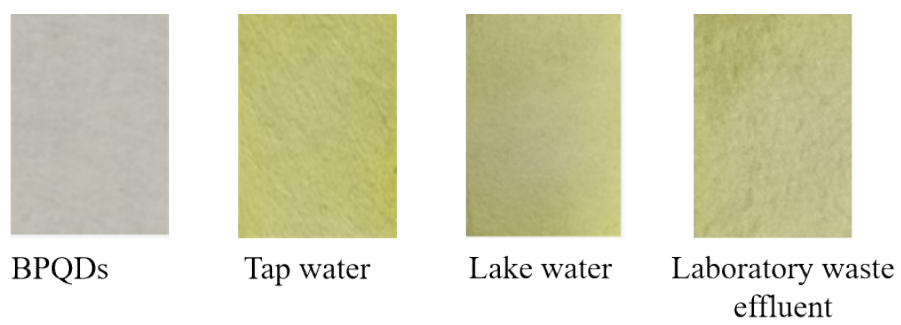


Fig. S6 Photos of test strips for 4-NP detection in lake, tap and laboratory waste water samples



Fig. S7 Photos under daylight of the dispersion of BPQDs with various concentrations of 4-NP