Supporting Information for

Morphology controlable fabrication of poly o-phenylenediamine microstructures tuned by ionic impact and their application on pH sensor

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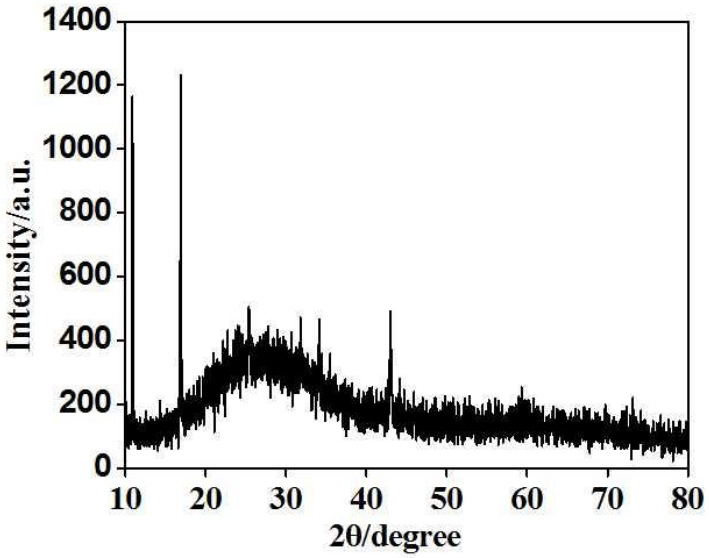

Fig. S1. XRD spectrum of sample 1.

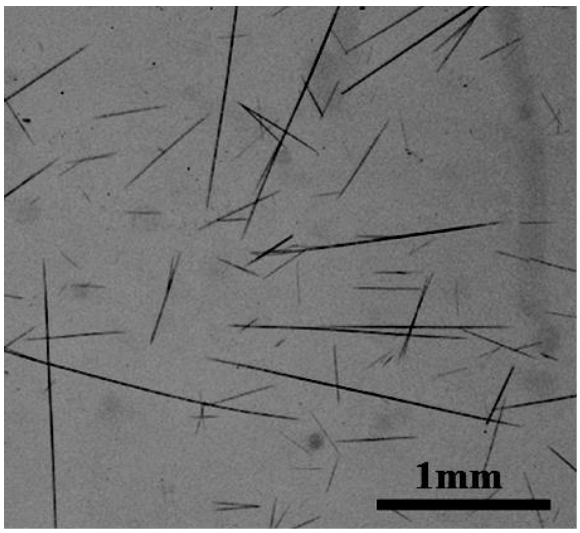

Fig. S2 The optical microscopic image of ultra long belts.

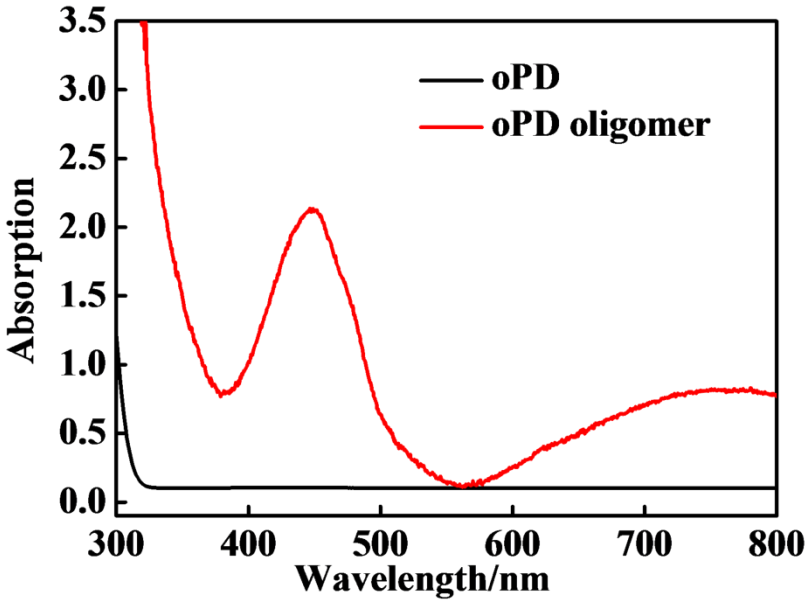

Fig. S3. UV-vis spectra of 0.017 M oPD solution (black line) and oPD oligomer upon addition of 0.083 M $CuCl_2$ (red line)

The reduction state of oPD monomer is colourless in aqueous solution and has no absorption band in visible region (black curve in Fig. S3). But after adding $CuCl_2$ into oPD solution, a peak at 450 nm appeared as shown in red curve in Fig. S3. At this time, there is no PoPD microstructures in the solution. Therefore this peak is from PoPD oligomers which are the building block for PoPD microstructures. The peak was assigned to the π-π transition associated with the phenazine ring conjugated to the lone pairs of electrons in the NH_2 groups. Upon further adding NaCl into oligomer solution, the PoPD microstructures emerged in the solution immediately. The results confirm the two step process of the formation of PoPD microstructures.

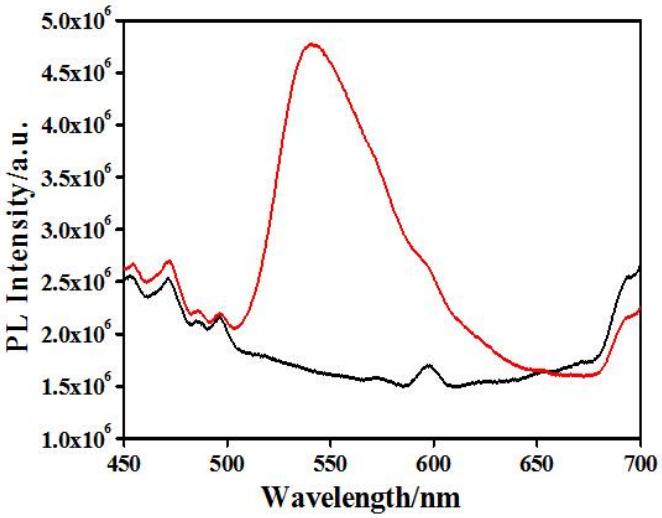

Fig. S4. Fluorescence spectra of sample 4 before (black curve) and after (red curve) treating with 0.1 M NaOH.

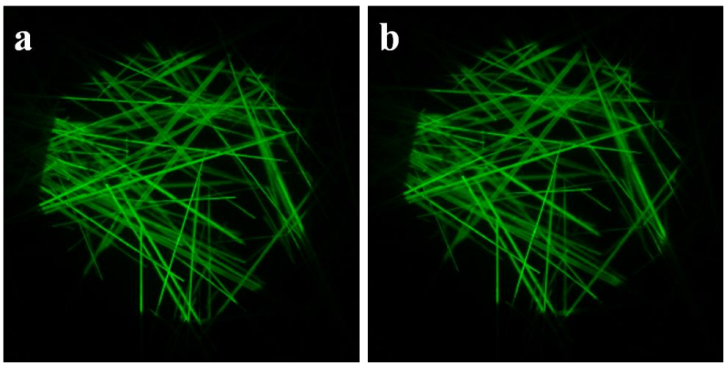

Fig. S5 Fluorescence microscopy image of the PoPD belts before (a) and after (b) quenching under strong UV light.

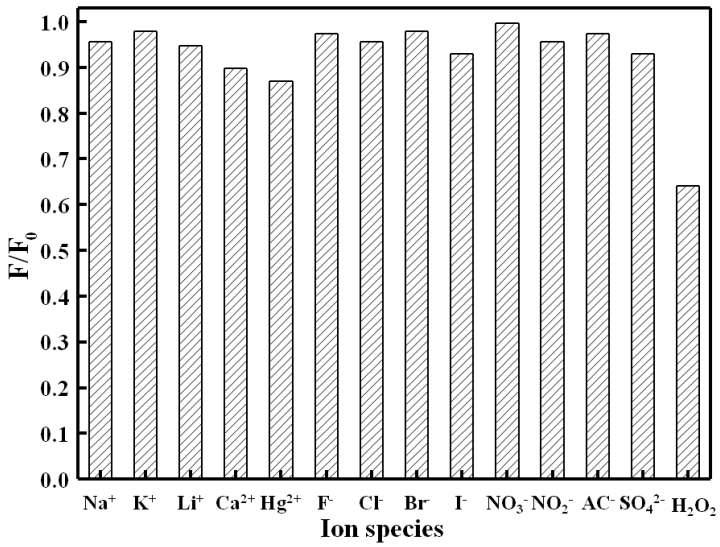

Fig. S6 Fluorescence response of PoPD belts with interferences. F_0 and F are PL intensities without and with the presence of ions and molecule. The ions and molecule are Na^+, K^+, Li^+, Ca^{2+}, Hg^{2+}, F^-, Cl^-, Br^-, I^-, NO_3^-, NO_2^-, AC^-, SO_4^{2-}, H_2O_2. The concentration of the PoPD belts and the ions are 3 mg/ml and 1×10^{-5} M, respectively.