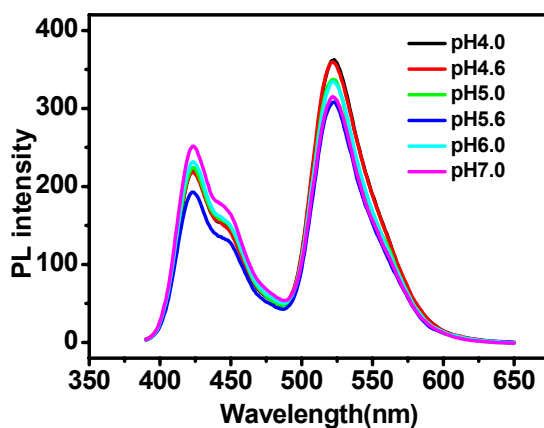


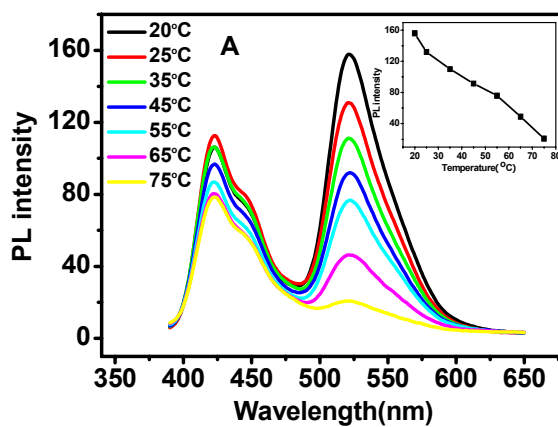
## SUPPORTING INFORMATION

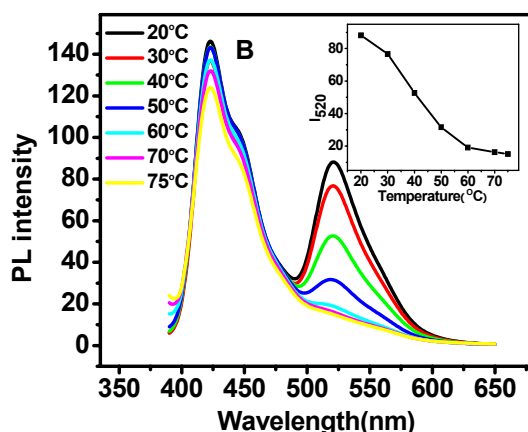
### Logic Gates and pH Sensing Devices Based on Supramolecular Telomere DNA/Conjugated Polymer System

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Xiaogang Qu

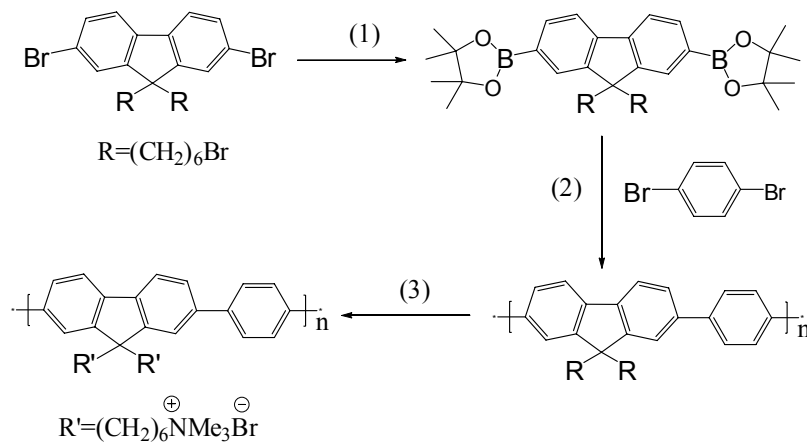


**Figure S1.** Fluorescence spectra of PFP/Genefinder in the presence of random dsDNA of 22mer which would not fold into quadruplex structure, upon excitation at 380 nm. The pH changed from 4.0 to 7.0.





**Figure S2.** Temperature dependent fluorescence spectra of PFP/dsDNA/Genefinder complex at pH 7.0. Inset shows the changes of fluorescence intensity at 520 nm with the increase of temperature. (A) The sequences of human telomeric DNA used here were dAG<sub>3</sub>(T<sub>2</sub>AG<sub>3</sub>)<sub>3</sub> and d(C<sub>3</sub>TA<sub>2</sub>)<sub>3</sub>C<sub>3</sub>T. (B) The sequences used as control were GAAGACTCGTAATGTGAAACCG and CGGTTTCACATTACGAGTCTTC.



**Scheme S1.** Synthesis of PFP. Reaction conditions: (1) t-BuLi/pentane, 2-isopropoxy-4,4,5,5-tetramethyl-1,3,2-dioxaborolane, THF, -78°C, 3h; (2) Pd(PPh<sub>3</sub>)<sub>4</sub>, 2 M Na<sub>2</sub>CO<sub>3</sub>, toluene; and (3) NMe<sub>3</sub>, THF/H<sub>2</sub>O.