Electronic Supplementary Material (ESI) for Sensors & Diagnostics.

Supporting Information

Highly selective fluorescent sensor for ammonium ion

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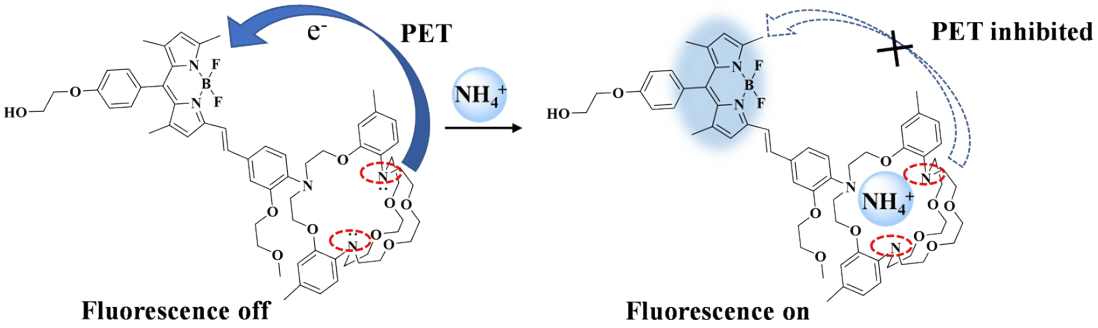


Scheme S1: the sensing mechanism of **KS**.

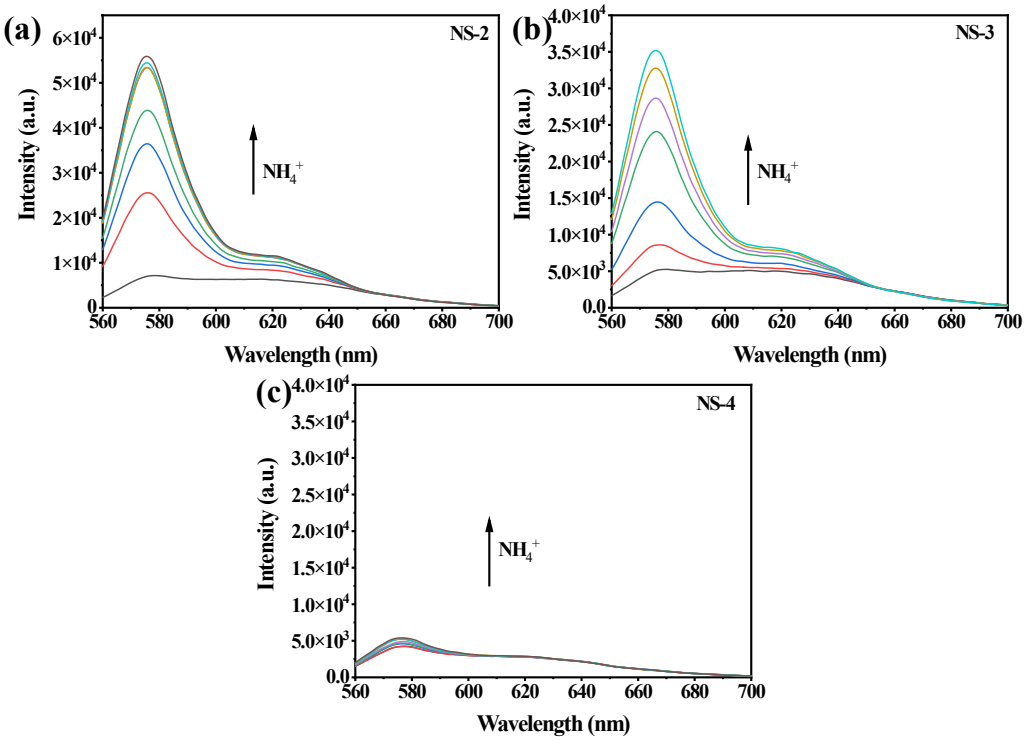


Figure S1. Effects of buffer in detection area on sensor performance (a) emission spectra of the sensor **NS-2** with buffer (100 mM, pH=6.5) at different NH_4^+ concentrations. (b) emission spectra of the sensor **NS-3** with buffer (1000 mM, pH=7) at different NH_4^+ concentrations. (c) emission spectra of the sensor **NS-4** without buffer at different NH_4^+ concentrations.

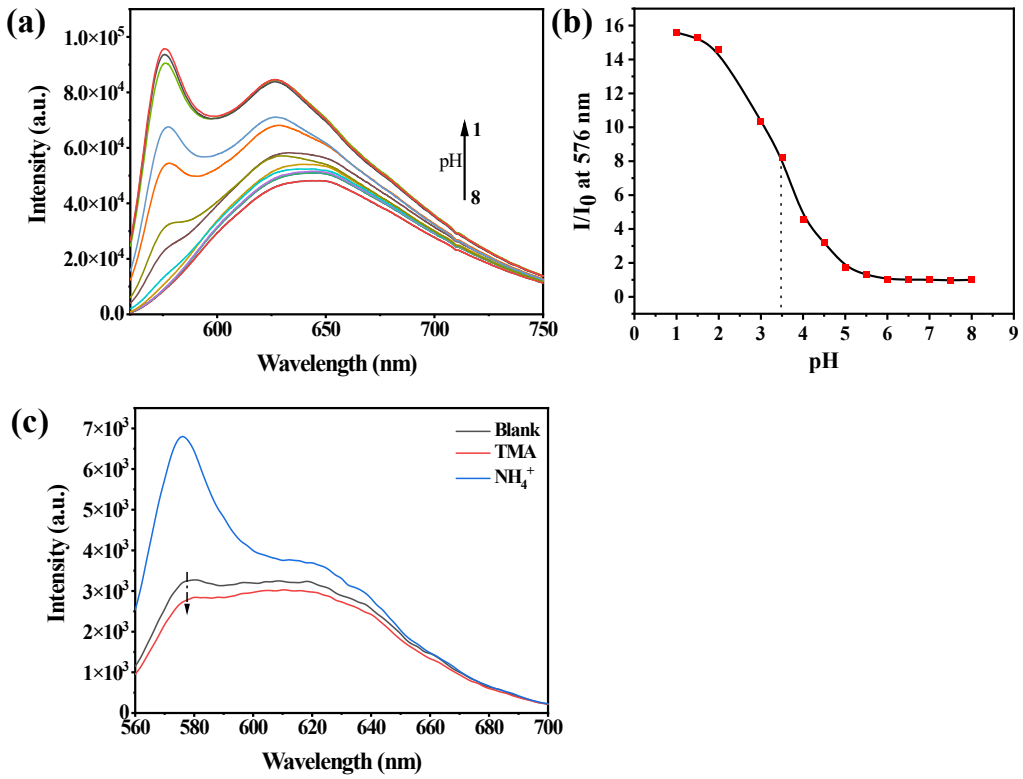
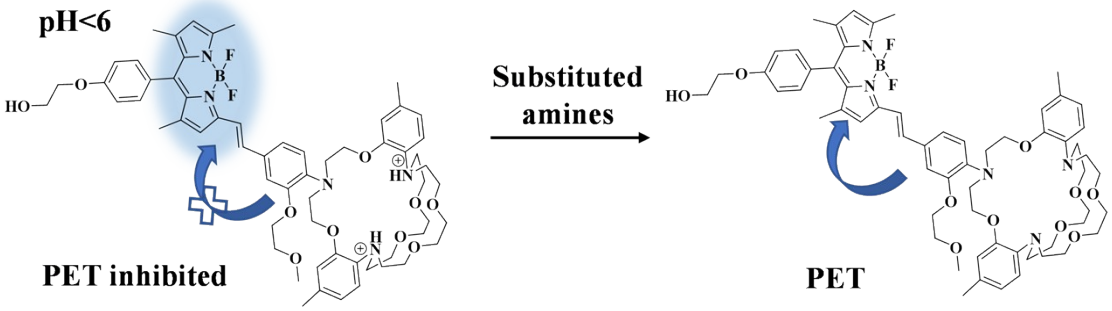


Figure S2. Choose suitable buffer for detection area (a) Effect of pH on fluorescence intensity of **KS**. (b) Fluorescence intensity at the peak as a function of pH value. (c) Substituted amine model (TMA) reduced the intensity.



Scheme S2. The Interference from substituted amines.

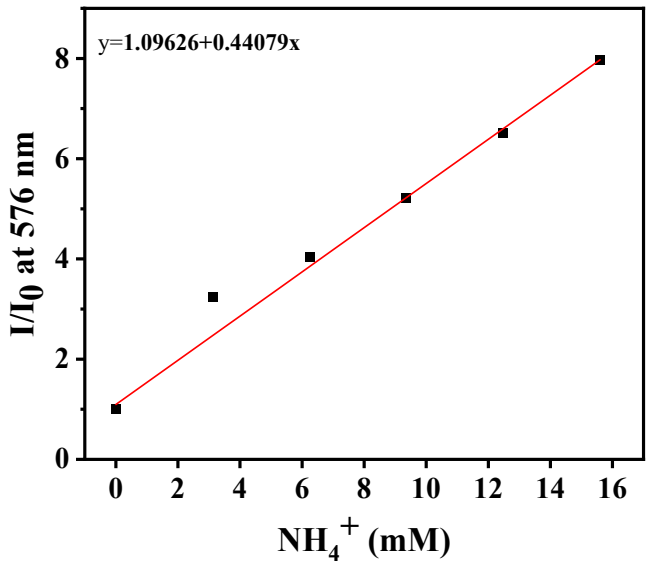


Figure S3. The plots of intensity ratio vs NH_4^+ concentrations.

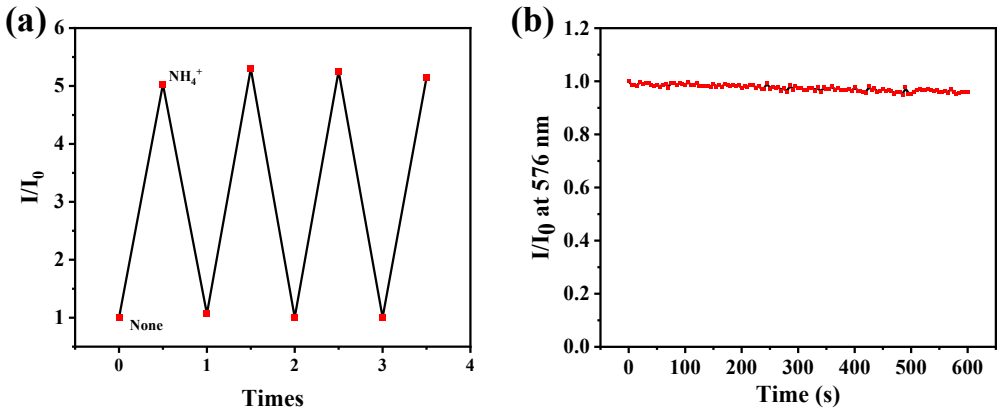


Figure S4. (a) Cyclic stability of **NS-1**, (b) Photobleaching resistance of **NS-1**.

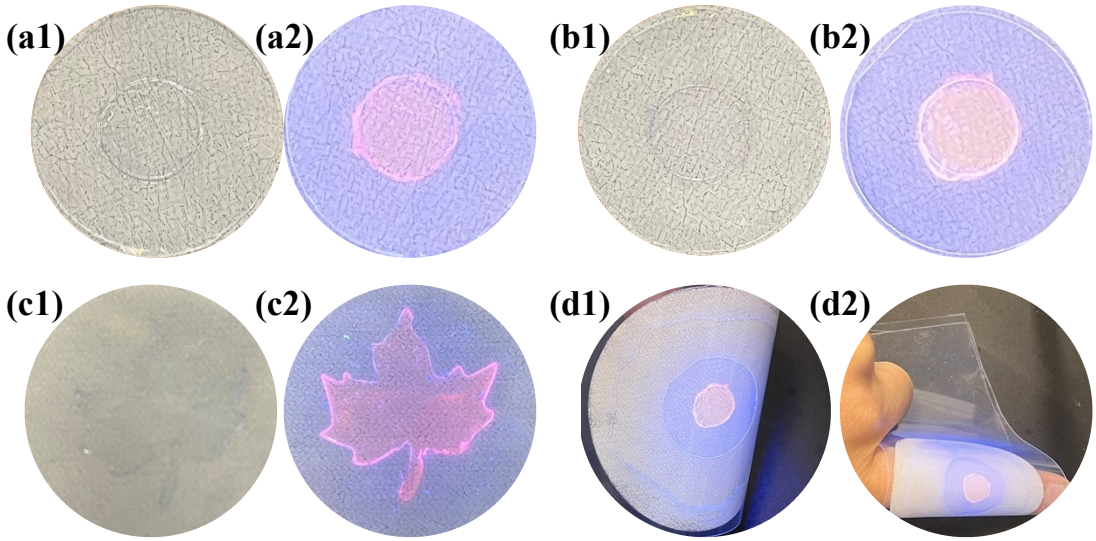


Figure S5. Patterning on the flexible substrate (a) without NH_4^+: (a1) under daylight lamp (a2) ultraviolet lamp; (b) with NH_4^+: (b1) under daylight lamp (b2) ultraviolet lamp. (c) Shape into a maple leaf: (c1) under daylight lamp (c2) ultraviolet lamp. (d) Flexible and capable of bending.