

Supporting information

Facile Synthesis of Highly Photoluminescent and Temperature-sensitive P, N, B-co-doped carbon quantum dots and Its Application for Highly Sensitive Recognition of Curcumin and Fluorescent ink Operation

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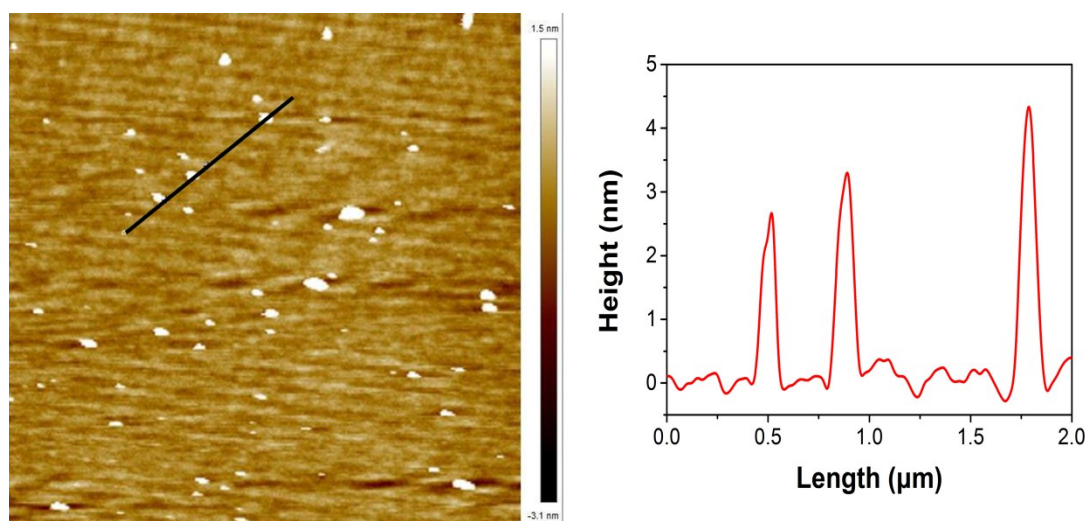


Fig.S1. (a) AFM image of PNB CDs. (b) height profile of PNB CDs

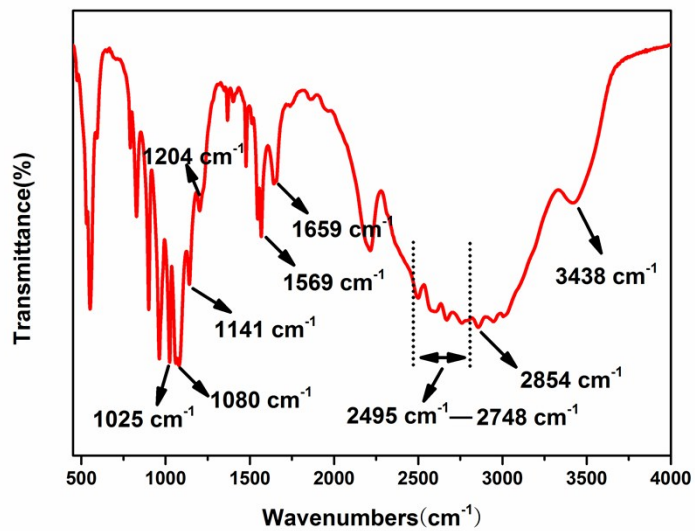


Fig.S2. FTIR spectra of PNBCDs.

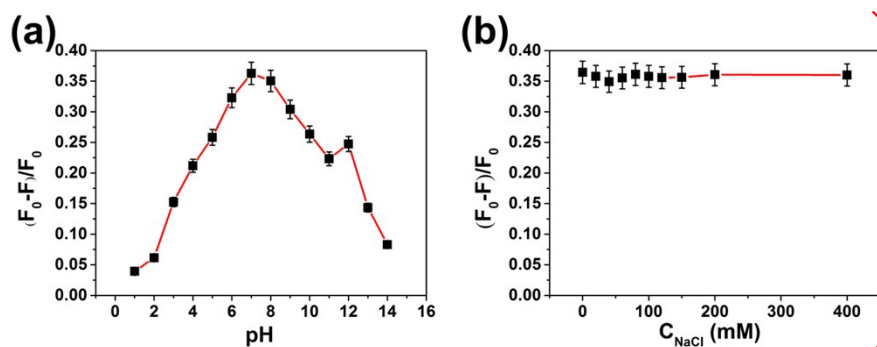


Fig.S3. Effect of pH and ionic strength on the response of PNBCDs to curcumin (concentration of curcumin is 20 μ mol/L)

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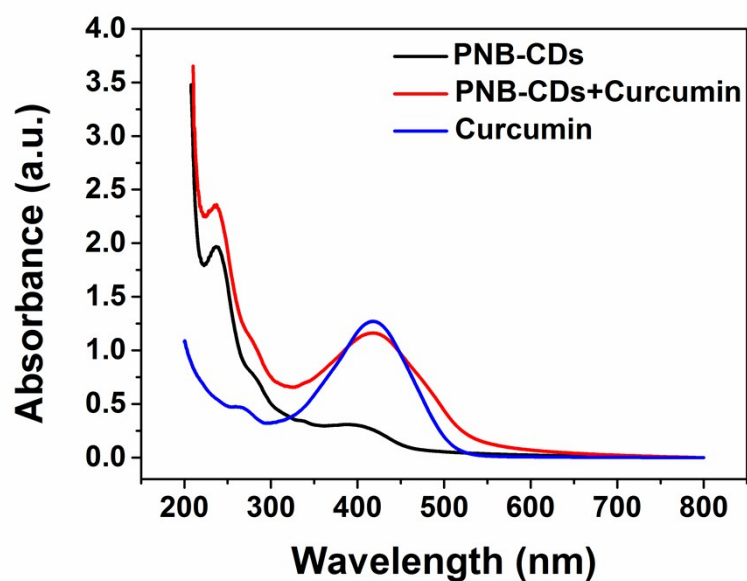


Fig.S4. UV-vis spectra of the PNB-CDs, PNB-CDs/curcumin, and curcumin solution.

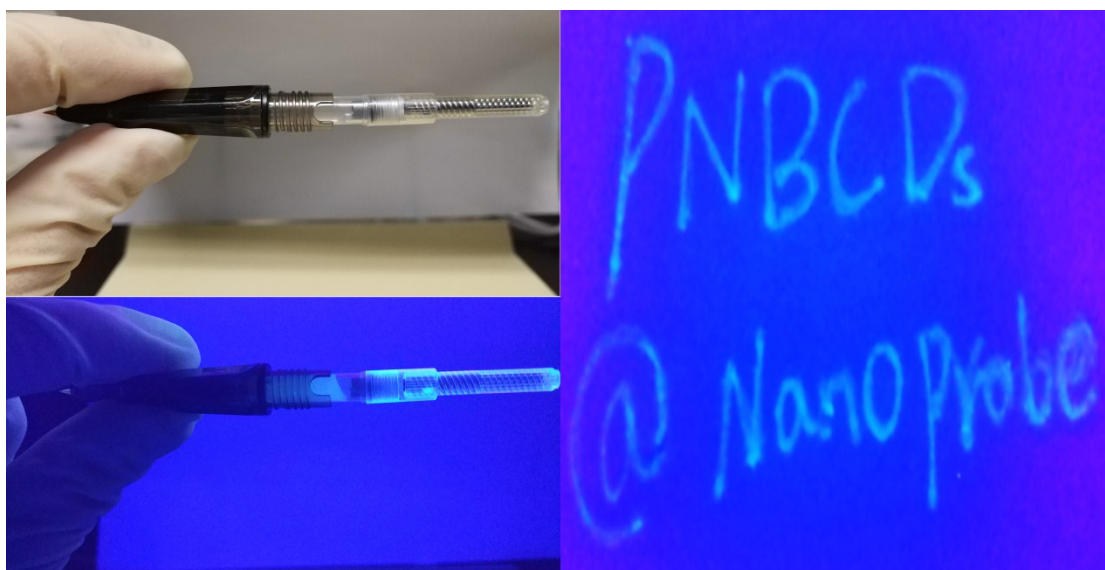


Fig.S5. the hand written name of the CDs and carbon nanoparticles using fluorescent PNB-CDs coated filter paper under UV light excitation.

In view of the good photostability and chemical durability of PNB-CDs, we have also employed the highly fluorescent PNB-CDs as a fluorescent ink for display purposes. The PNB-CDs aqueous solutions can be used as a new type of fluorescent ink. The aqueous solution of PNB-CDs was directly injected into a pen without any chemical modification. The name

of the carbon dots written on filter paper excited using a UV lamp is visible to the naked eye and readily flow while writing without any coagulation within the pen in Fig.S4. The carbon dots based fluorescent ink doesn't contaminate nib and tube of fountain pen and can be easily washed off from water. Moreover, the resulting water soluble PNBCDs ink is clear, permanent, pollution free, and easily washable. Therefore, PNBCDs ink might be an alternative and potential for fluorescent pens.