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 PNBCDs. (b) height profile of PNBCDs
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 μmol/L).
In view of the good photostability and chemical durability of PNBCDs, we have also employed the highly fluorescent PNBCDs as a fluorescent ink for display purposes. The PNBCDs aqueous solutions can be used as a new type of fluorescent ink. The aqueous solution of PNBCDs 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.