Boron doped graphitic carbon nitride as a novel fluorescent probe

for mercury(II) and iron(III): a circuit logic gate mimic

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Characterization

X-ray diffraction patterns were achieved from 5 to 75°on a Bruker D5000 Advance X-ray diffractometer with Cu Kα radiation (λ = 1.5406 Å, 40 kV, and 40 mA). Transmission electron microscopy (TEM) images were prepared by CM30 with an accelerating voltage of 300 kV, and scanning electron microscopy (SEM) micrographs were provided by MIRA3 TESKAN equipped with elemental mapping. Fourier transform infrared spectroscopy spectra of the samples were achieved by RAYLEIGH WQF- 510A apparatus in the wavenumbers of 4000–600 cm−1. Nitrogen adsorption-desorption isotherms were determined on a Micromeritics apparatus of model MicroActive for TriStar II Plus 2.03 at −196 °C. The specific surface areas were calculated by the BET method, and the pore size distributions were calculated by the BJH model. Determination of the ions in real samples was achieved by inductively coupled plasma optical emission spectrometry model ICP-OES 730-ES, Varian. Photoluminescence (PL) spectra of samples were recorded at room temperature using Agilent-G980A instrument.
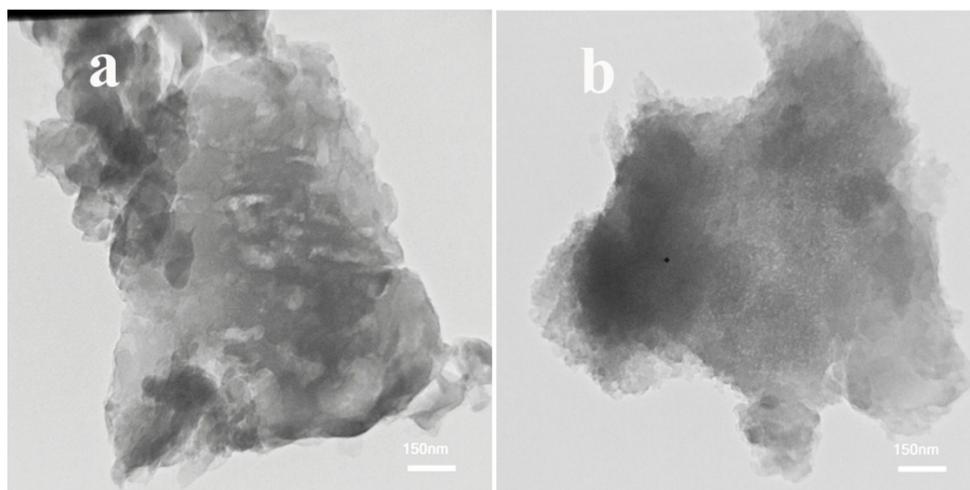
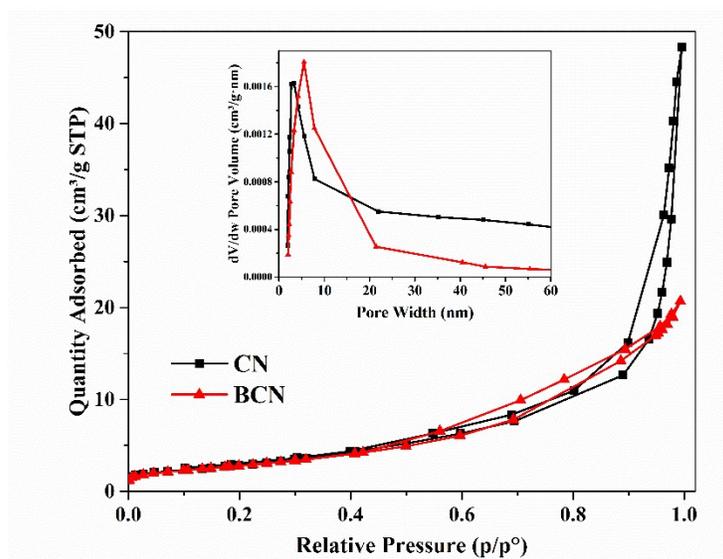**Figure S1.** TEM images of a) CN and b) BCN.

Figure S2. N_2 adsorption-desorption isotherms and (inset) pore width distribution of CN and BCN.