Electronic Supplementary Material (ESI) for Nanoscale.

Supporting Information

Microplasma-Assisted Rapid Synthesis of Luminescence Nitrogen-Doped Carbon Dots and Its Application in pH Sensing and Uranium Detection

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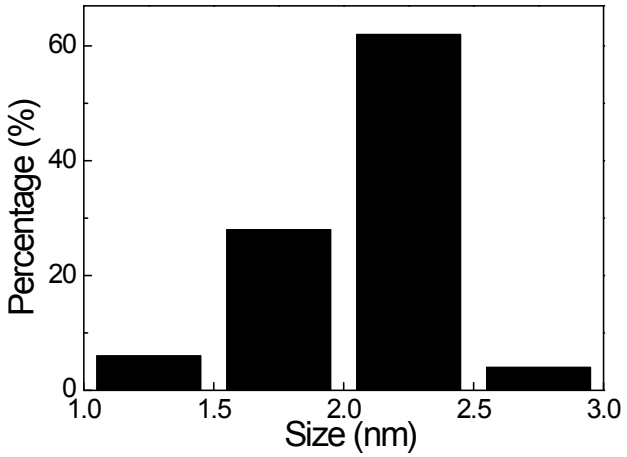

Fig. S1 The size distribution of CDs obtained by counting the average size of 50 nanoparticles from the TEM image.

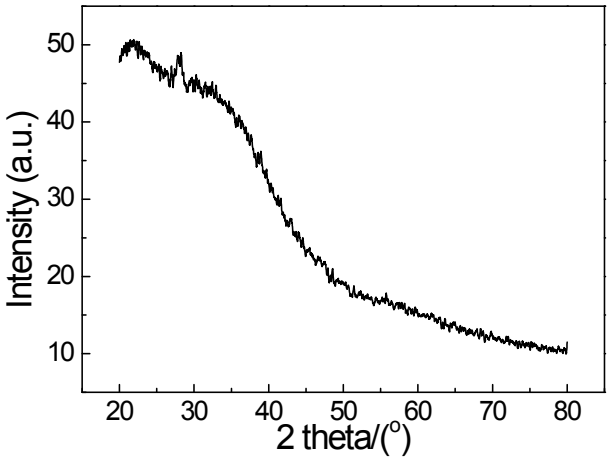

Fig. S2 The XRD pattern of CDs.

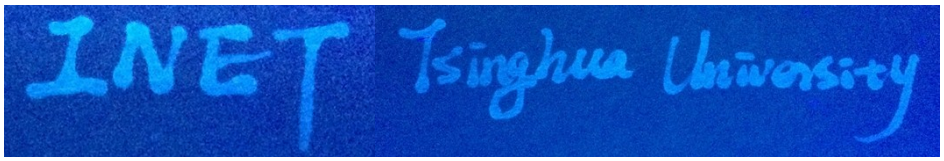

Fig. S3 The fluorescent images of CDs ink written on filter paper under UV lamp (365nm excitation).

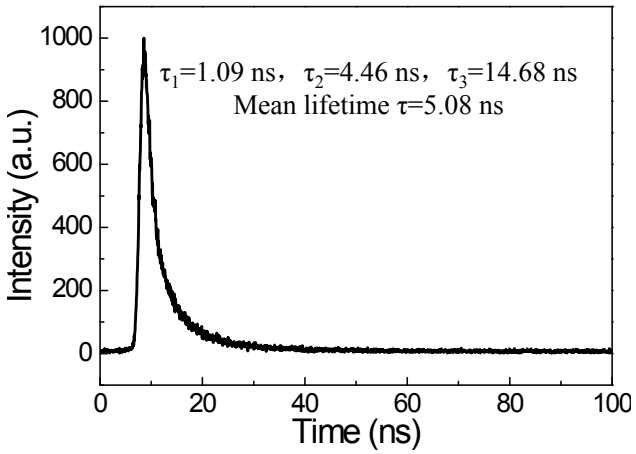

Fig. S4 The time-resolved fluorescence decay curve of CDs at the wavelength of 360 nm.

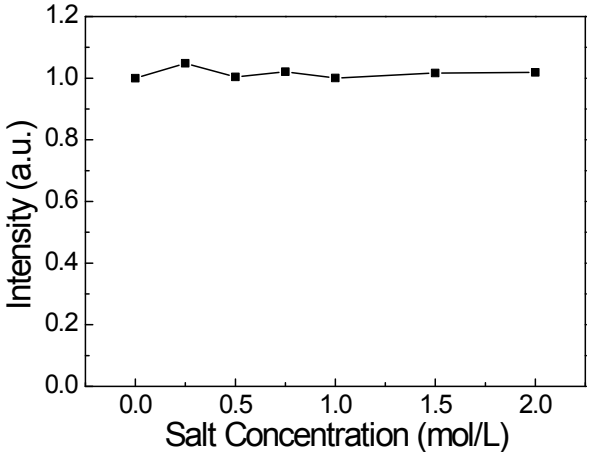

Fig. S5 The influence of ionic strengths on the fluorescence intensity of CDs. The ionic strengths were controlled by various the concentrations of NaCl (from 0 to 2.0 M).

Table S1. XPS analysis of CDs (C1s analysis)

	Peak binding energy	CDs
C-C/C=C (%)	283.8	31.99
Oxygenated Carbon (%)	285.4	35.52
Nitrous Carbon (%)	287.4	32.49

Table S2. XPS analysis of CDs (element content)

Element	Atomic (%)
C1s	54.99
N1s	10.98
O1s	34.03

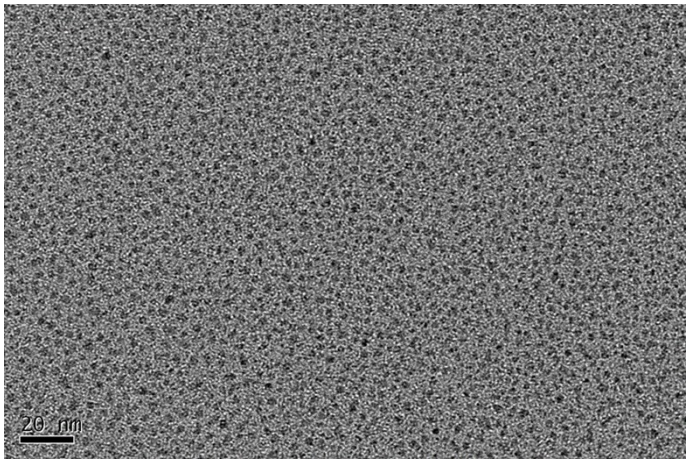

Fig. S6 TEM image of HCDs prepared by hydrothermal method.

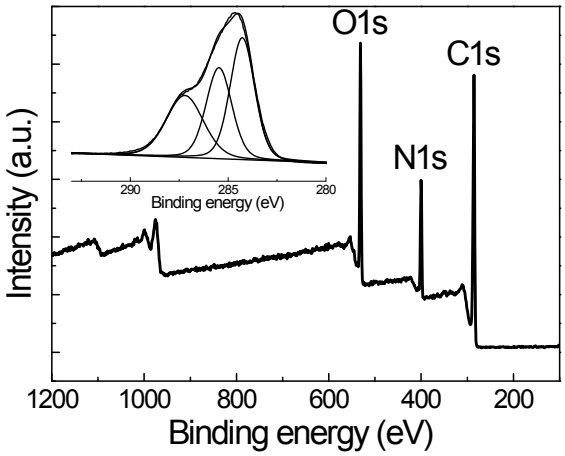

Fig. S7 XPS analysis of HCDs prepared by hydrothermal method.

Table S3. XPS analysis of HCDs (C1s analysis)

	Peak binding energy	CDs
C-C/C=C (%)	284.3	38.78
Oxygenated Carbon (%)	285.5	31.43
Nitrous Carbon (%)	287.2	29.79

Table S4. XPS analysis of HCDs (element content)

Element	Atomic (%)
C1s	68.13
N1s	15.35
O1s	16.52

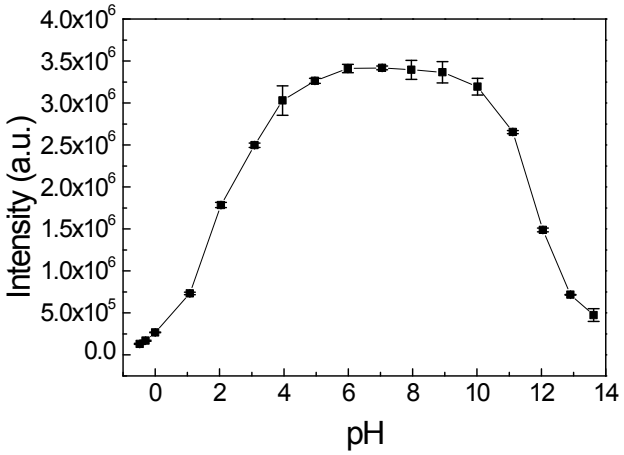

Fig. S8 Effect of pH on the fluorescence intensity of hydrothermal-prepared HCDs.