Electronic Supplementary Material (ESI) for Analyst.

Hydrothermal synthesis of N-doped carbon dots from an ethanolamine-ionic liquid gel to construct label-free multifunctional fluorescent probes towards Hg^{2+}, Cu^{2+} and $S_2O_3^{2-}$

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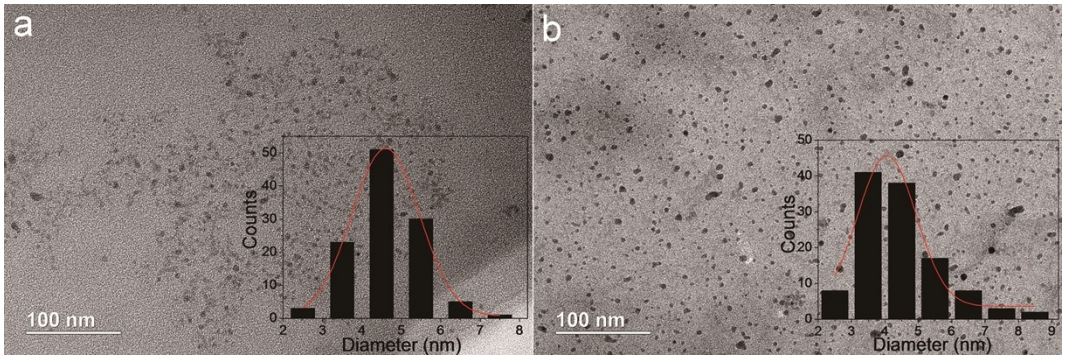

Fig. S1 TEM images and particle size distributions (insets) of NCDs synthesized at (a) 200 and (b) 220 °C for 4 h.

Table S1 The parameters of synthesized NCDs at different temperatures and 4 h.

Temperature (°C)	Yield (%)	Quantum yield (%)
200	< 1%	-
220	1.67%	-
240	8.25%	24.7%
260	Black precipitates	-

Table S2 The parameters of synthesized NCDs at 240 °C and different reaction time.

Reaction time (h)	Yield (%)	Quantum yield (%)
4	8.25%	24.7%
8	9.35%	19.9%
12	11.9%	18.0%

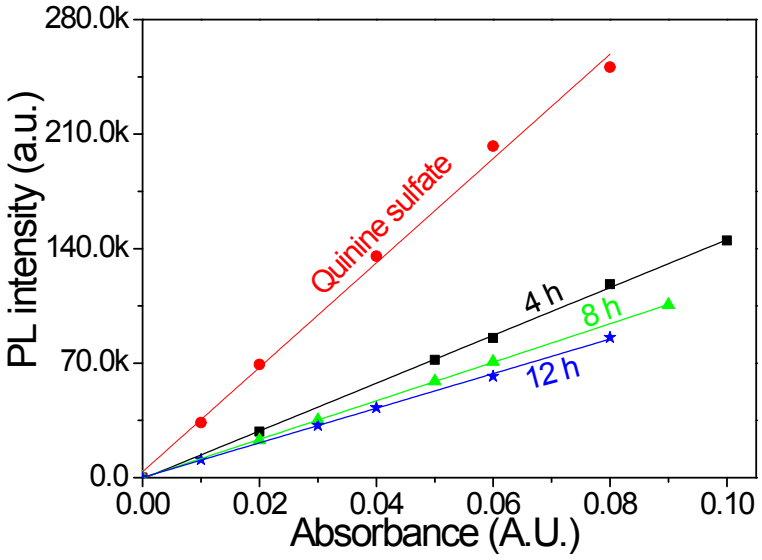

Fig. S2 PL intensity (350 nm excitation) of quinine sulfate aqueous solution (0.1 M H_2SO_4) and NCDs (240 °C, reaction time: 4, 8 and 12 h) aqueous suspensions varying with their UV-vis absorbance.

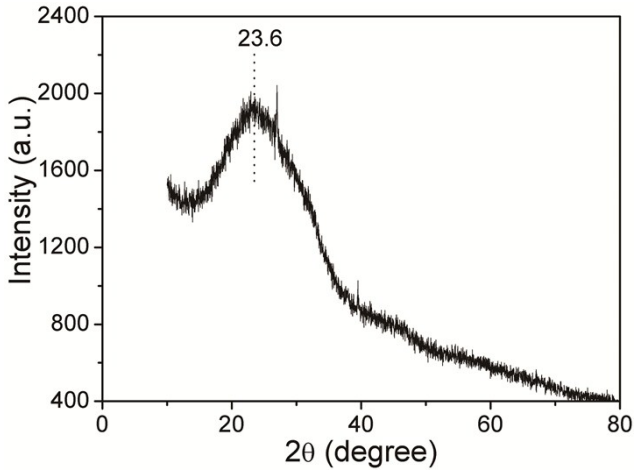

Fig. S3 XRD pattern of NCDs.

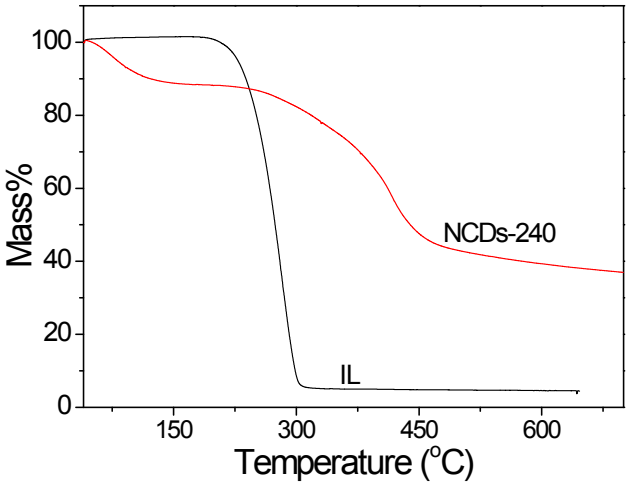

Fig. S4 TGA curves of ionic liquid (IL) and NCDs.

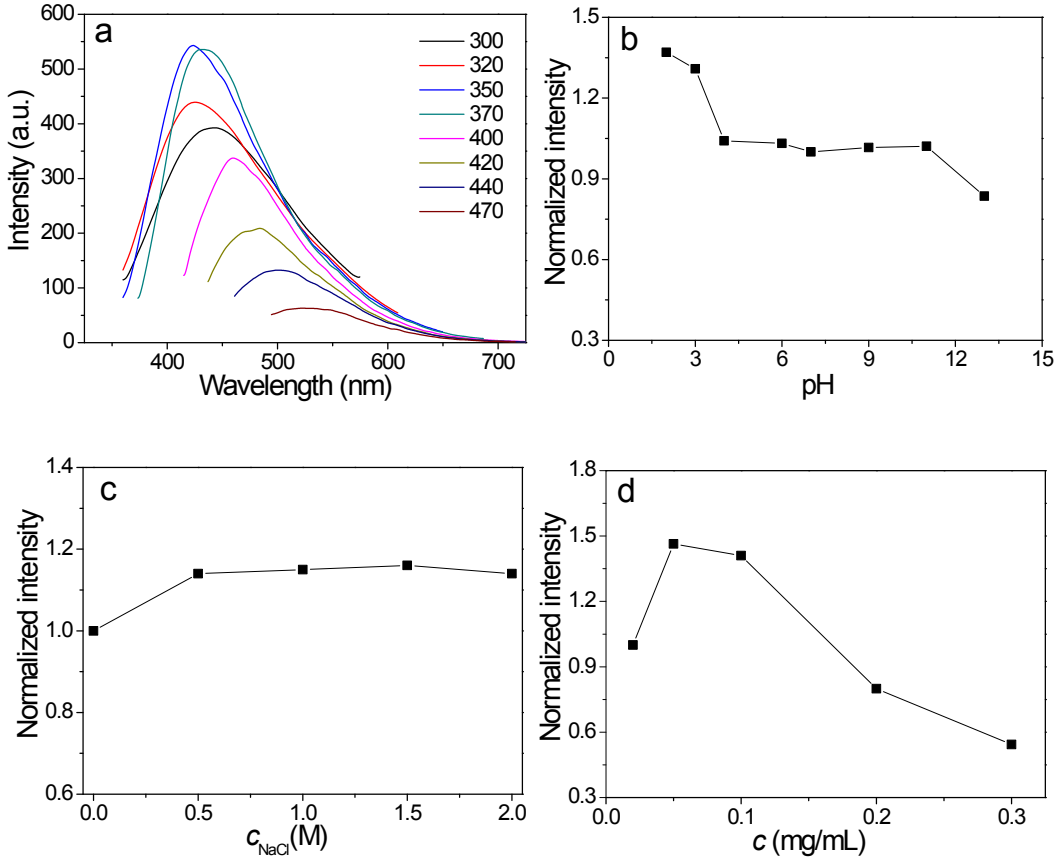

Fig. S5 PL spectra (a) and normalized PL intensity of NCDs aqueous suspension (0.02 mg/mL) varying with excitation wavelength, pH (b) and c_{NaCl} (c). Normalized PL intensity of NCDs suspension as a function of c_{NCDs} (d).