

One-pot synthesis of N-doped carbon dots by pyrolyzing the gel composed of ethanolamine and 1- carboxyethyl-3-methylimidazolium chloride and their selective fluorescent sensing for Cr(VI) ions

Baogang Wang,^{*a,b} Yan Lin,^a Hui Tan,^a Mina Luo,^{*a} Shanshan Dai,^a Hongsheng Lu^a
and Zhiyu Huang^{a,b}

^a *College of Chemistry and Chemical Engineering, Southwest Petroleum University,
Chengdu 610500, P. R. China*

^b *Oil & Gas Field Applied Chemistry Key Laboratory of Sichuan Province, College of
Chemistry and Chemical Engineering, Southwest Petroleum University, Chengdu
610500, P. R. China*

* Corresponding authors. Fax: +86-28-83037330; Tel.: +86-28-83037330.

Email address: bgwang@swpu.edu.cn, luo_mn@126.com

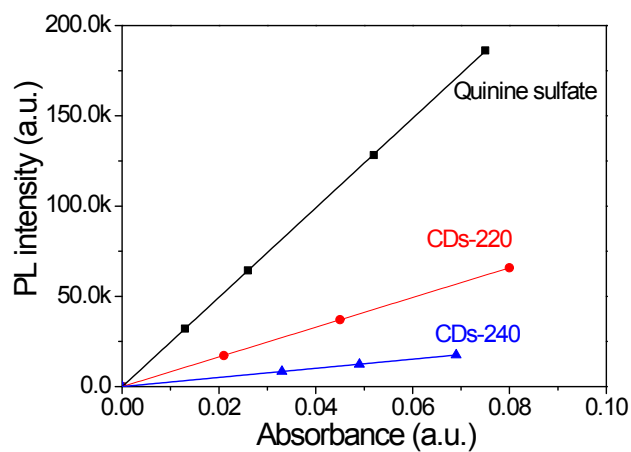


Fig. S1 PL intensity of 0.1 M H₂SO₄ aqueous solution of quinine sulfate and CDs varying with their UV-vis absorbance.

Table S1 The parameters of synthesized CDs at different temperatures.

Temperature (°C)	Quantum yield (%)	Yield (%)
200	-	-
220	17.93	21.85
240	5.52	37.80

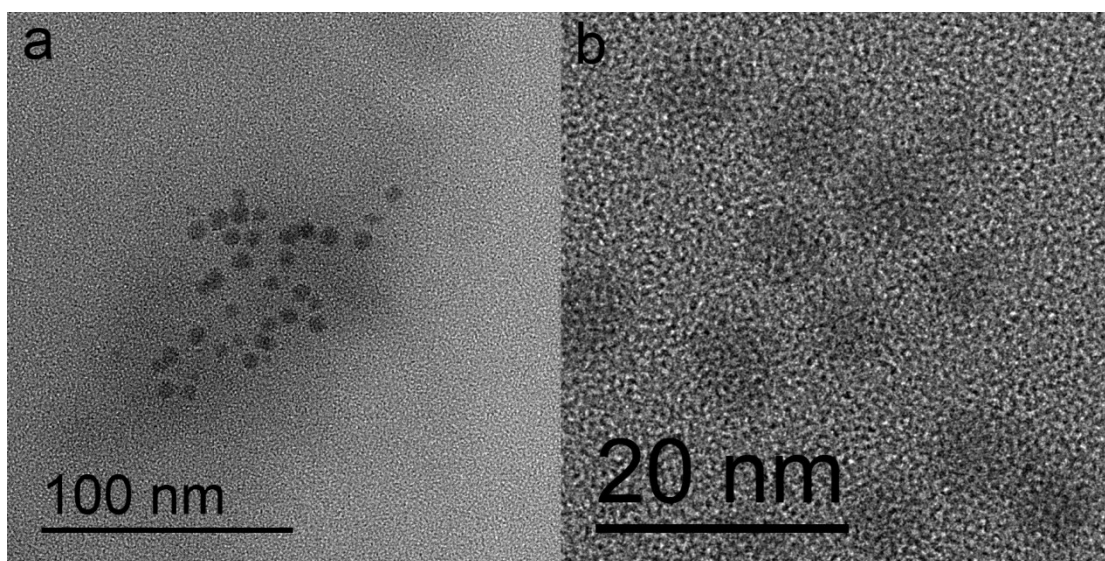


Fig. S2 The (a) low- and (b) high-resolution TEM images of CDs-240.

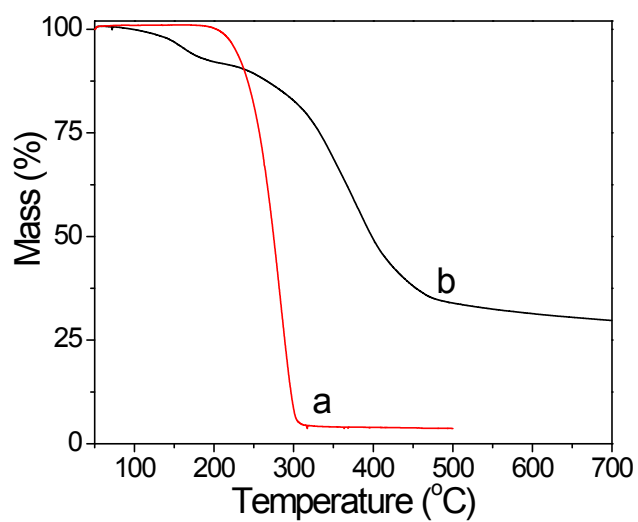


Fig. S3 TGA curves of (a) 1-carboxyethyl-3-methylimidazolium chloride and (b) CDs-220.

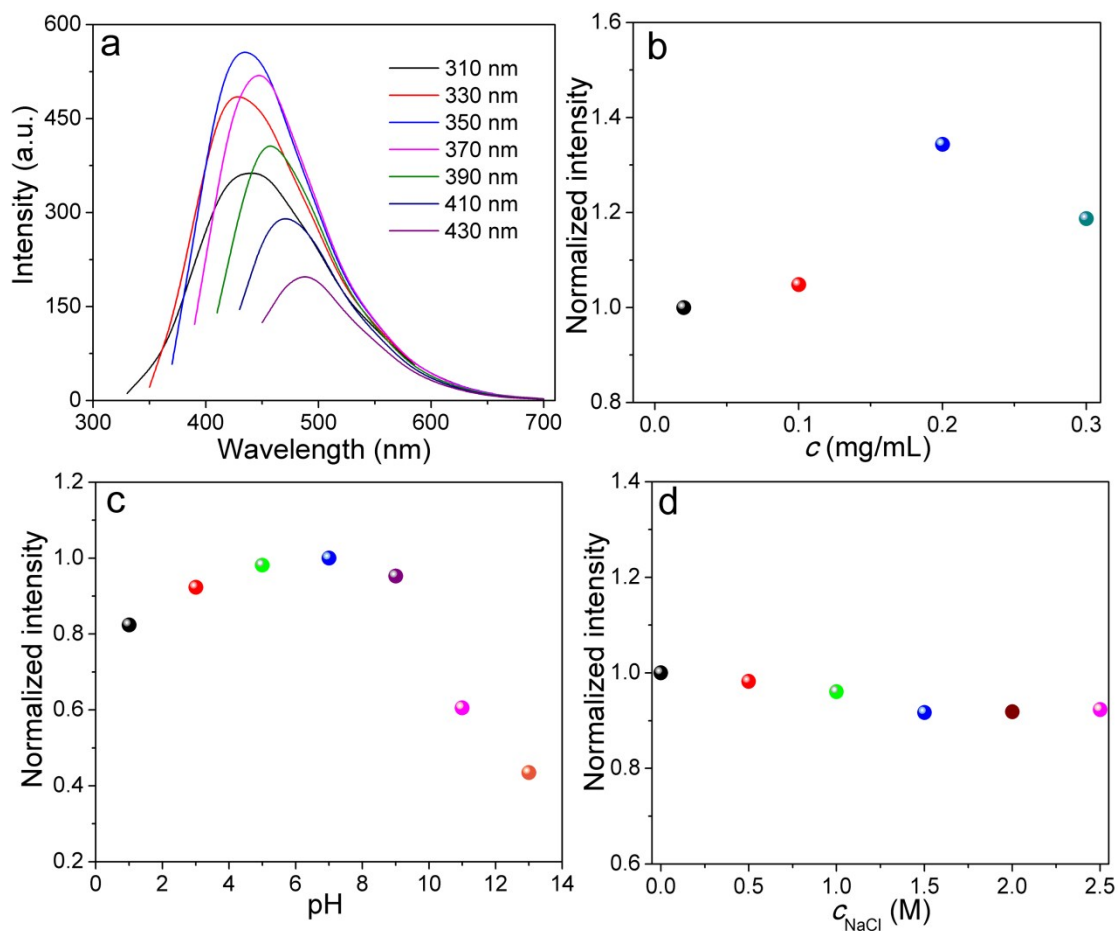


Fig. S4 (a) PL emission spectra of CDs-220 aqueous suspension (0.02 mg/mL) at different excitation wavelengths. Normalized PL intensity of CDs-220 aqueous suspension excited at 350 nm varying with (b) the concentration (c) of CDs-220. Normalized PL intensity of CDs-220 aqueous suspension (0.02 mg/mL) excited at 350 nm varying with (c) the pH and (d) the ionic strength created by NaCl.