

Supporting Information

Fluorescent carbon dots directly derived from Polyethyleneimine and their application for Detection of Co^{2+}

Bingyan Han, Ying Li, Tingting Peng, Mingbo Yu, Xixi Hu, Gaohong He*

School of Petroleum and Chemical Engineering, Dalian University of Technology, 2

Dagong Road, New District of Liaodong Bay, Panjin, Liaoning 124221, China.

E-mail: hgao hong@dlut.edu.cn; Tel: +86427-2631809

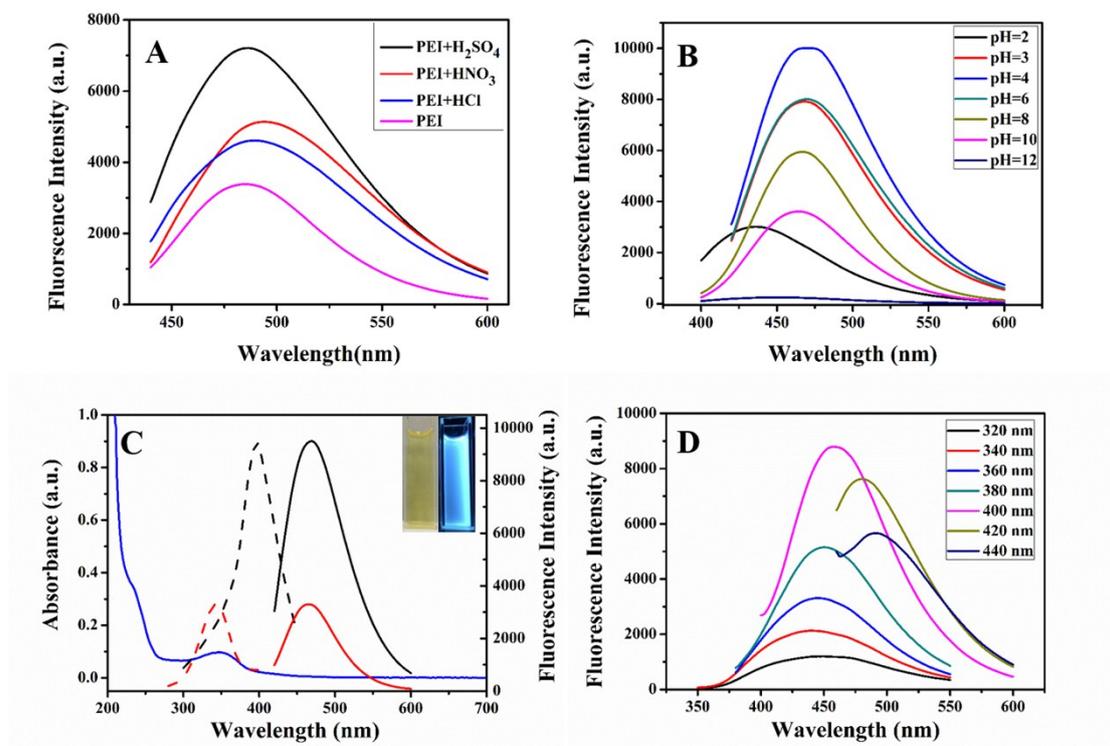


Fig. S1 The fluorescence spectra of resultant CDs under different (A) inorganic acid; (B) pH values; (C) UV-vis spectrum (blue solid line), maximum excitation

wavelength (black dashed line) and maximum emission wavelength (black solid line) of H_2SO_4 -CDs compared with the maximum excitation wavelength (red dashed line) and maximum emission wavelength (red solid line) of the original CDs. Inset: the photographs under daylight (left) and UV-excitation (365 nm, right); (D) Emission spectra of H_2SO_4 -CDs at different excitation wavelengths.

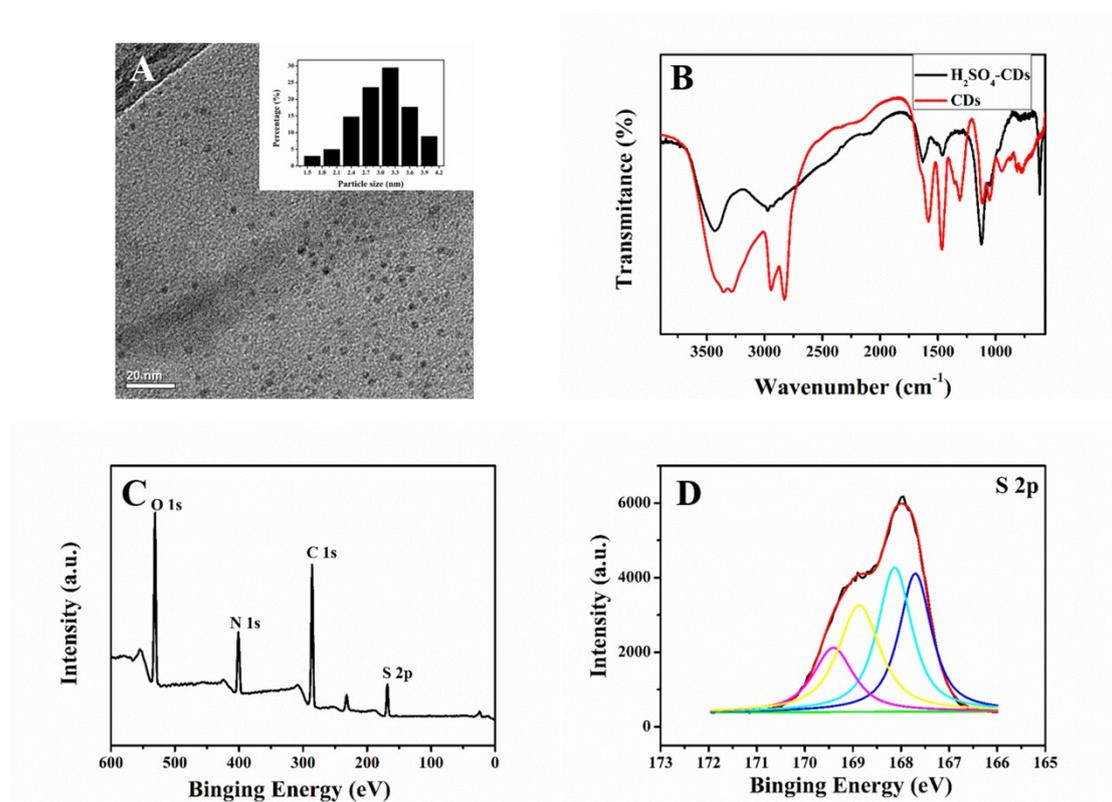


Fig. S2 (A) TEM image with the size distribution histogram; (B) FT-IR spectra; (C) whole survey XPS spectrum and (D) S 2p XPS spectrum of as-purified H_2SO_4 -CDs.

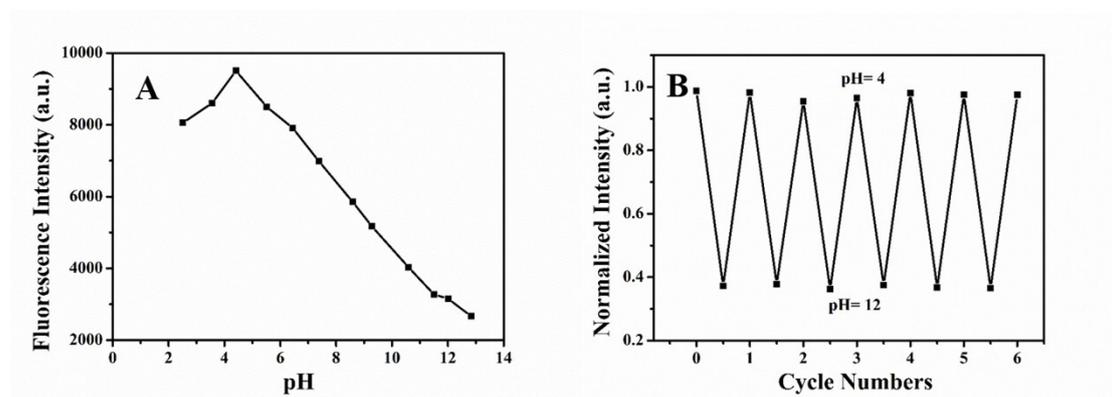


Fig. S3 (A) PL intensity of H₂SO₄-CDs at various pH values; (B) PL intensity of H₂SO₄-CDs upon cycling the pH value six times between 4.00 and 12.00.

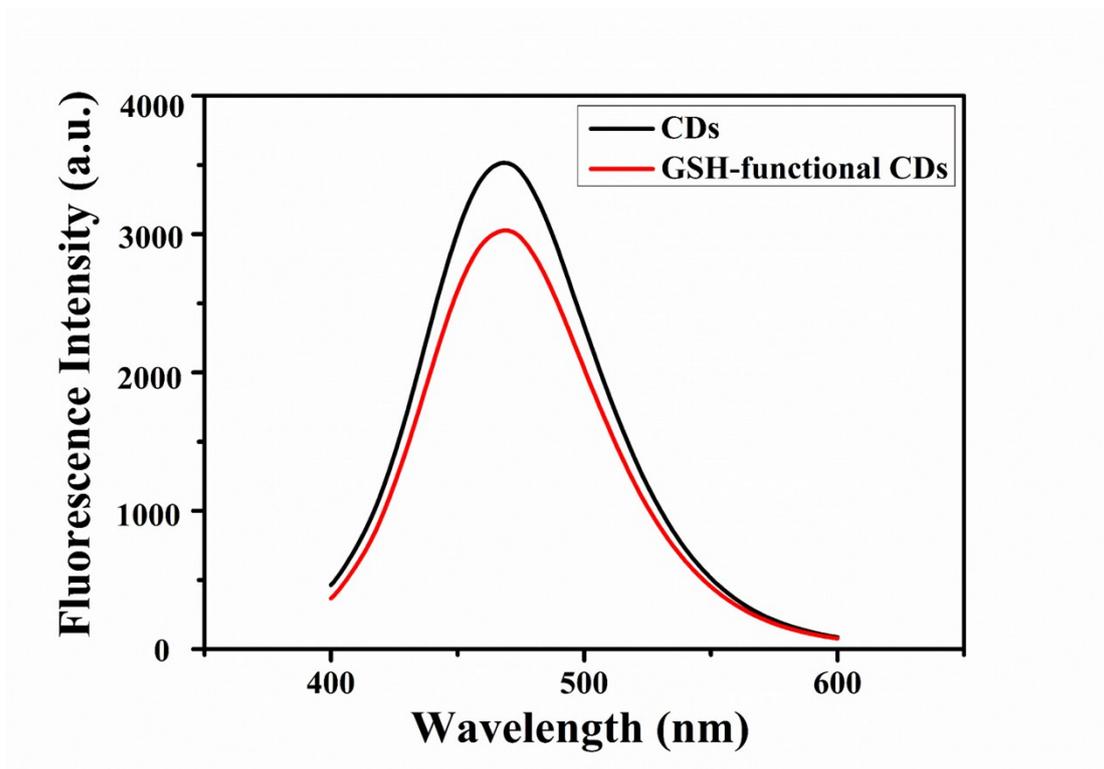


Fig. S4 PL intensity of the original CDs and the GSH-functional CDs.

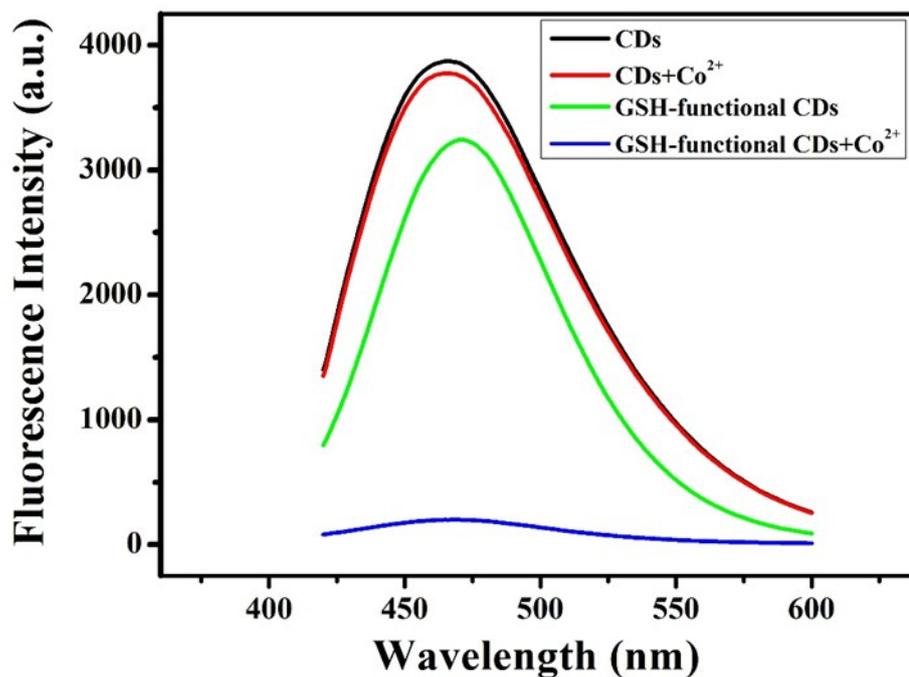


Fig.S5 PL intensity of the original CDs (black line), in the presence of 2 mM Co²⁺

(red line), the GSH-functional CDs (green line), and in the presence of 2 mM Co^{2+} (blue line).