

## Supplementary Information

### Synthesis of water-soluble fluorescent carbon dots from *Setcreasea purpurea* boom and its application for Br<sub>2</sub> detection

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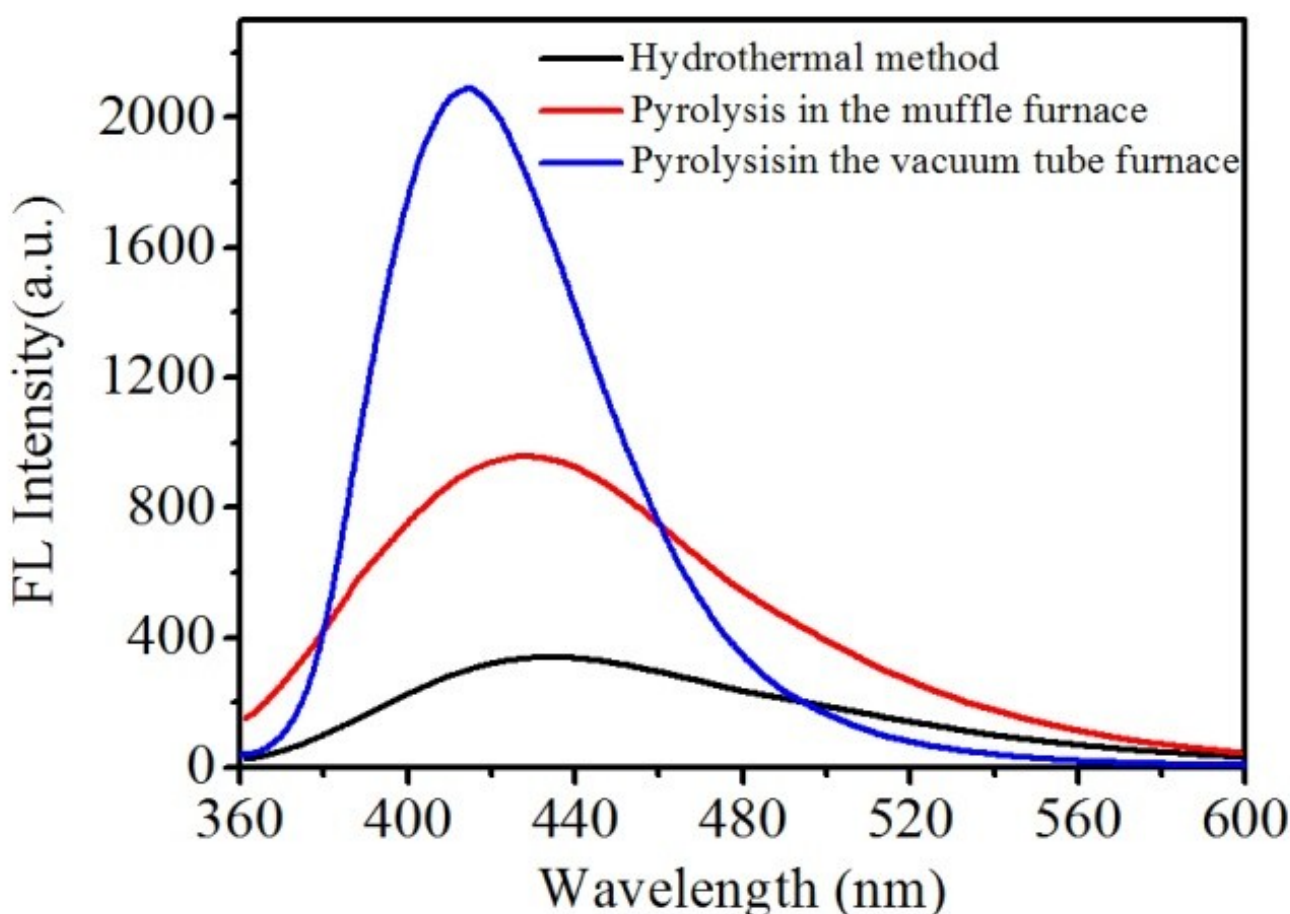
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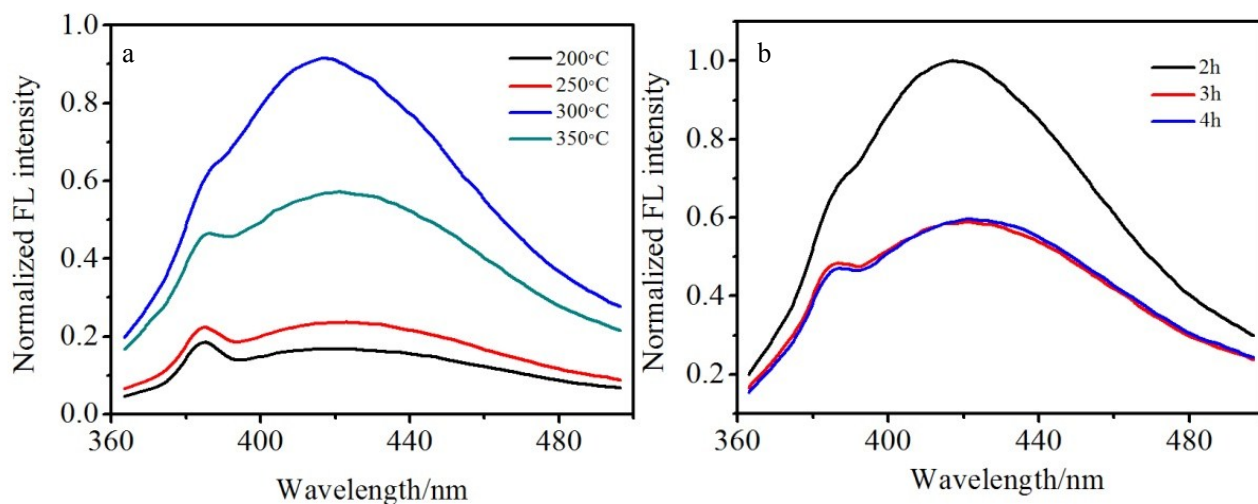
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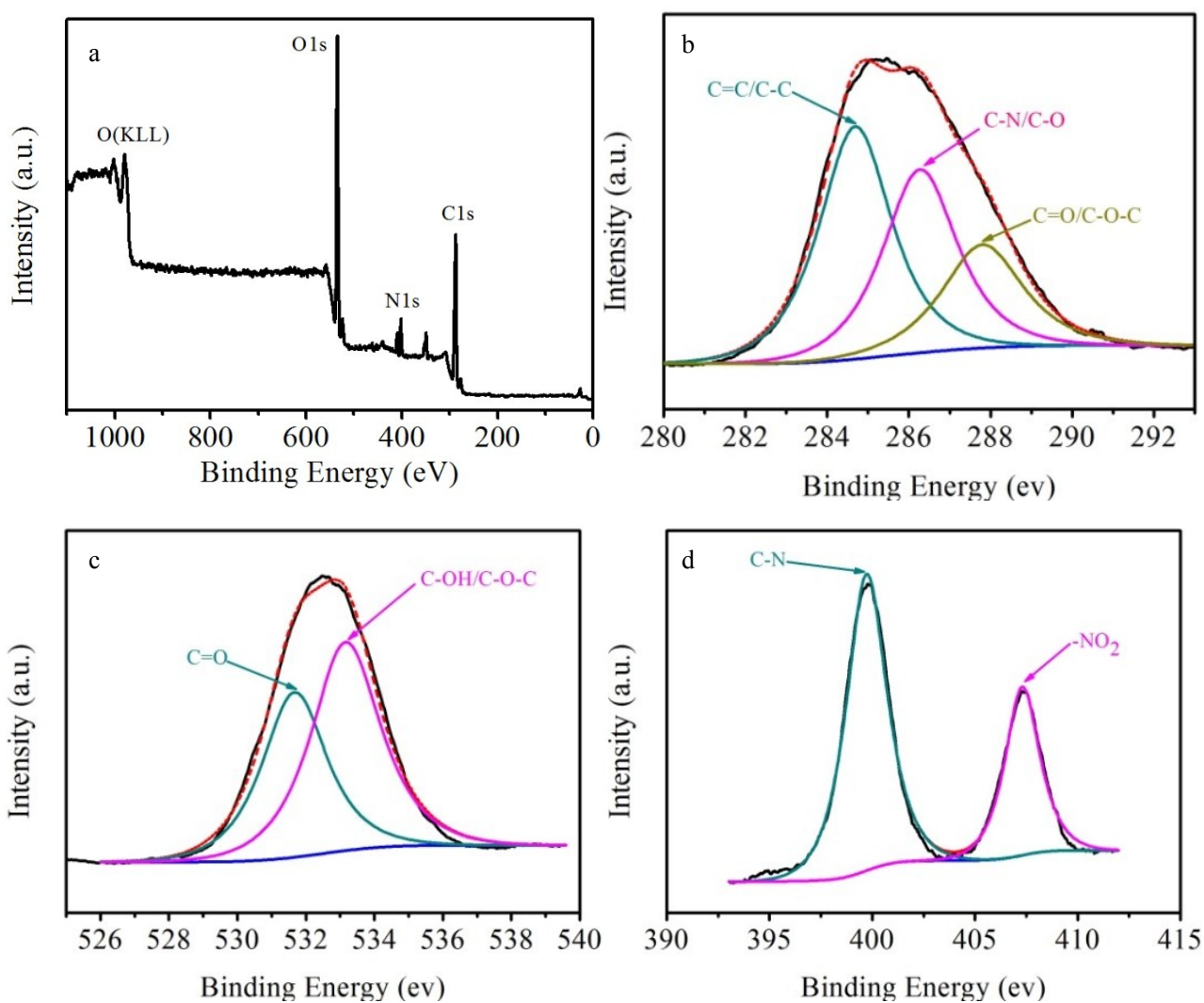
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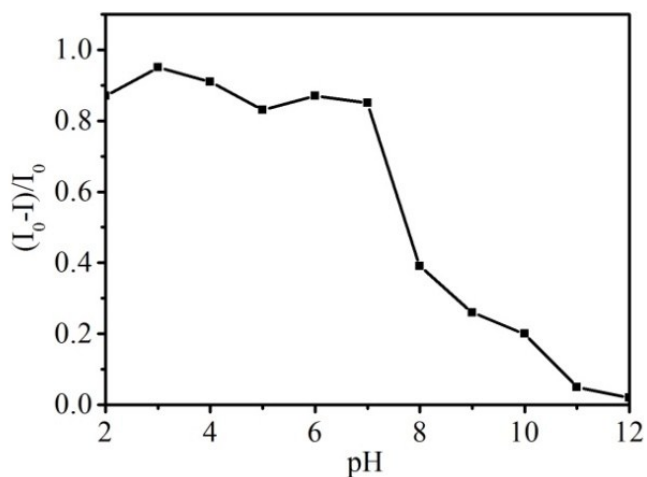
**Fig. S1** The fluorescent spectra of CDs prepared with different methods, including hydrothermal method (black line), pyrolysis in the muffle furnace (red line) and pyrolysis in the vacuum tube furnace (blue line).



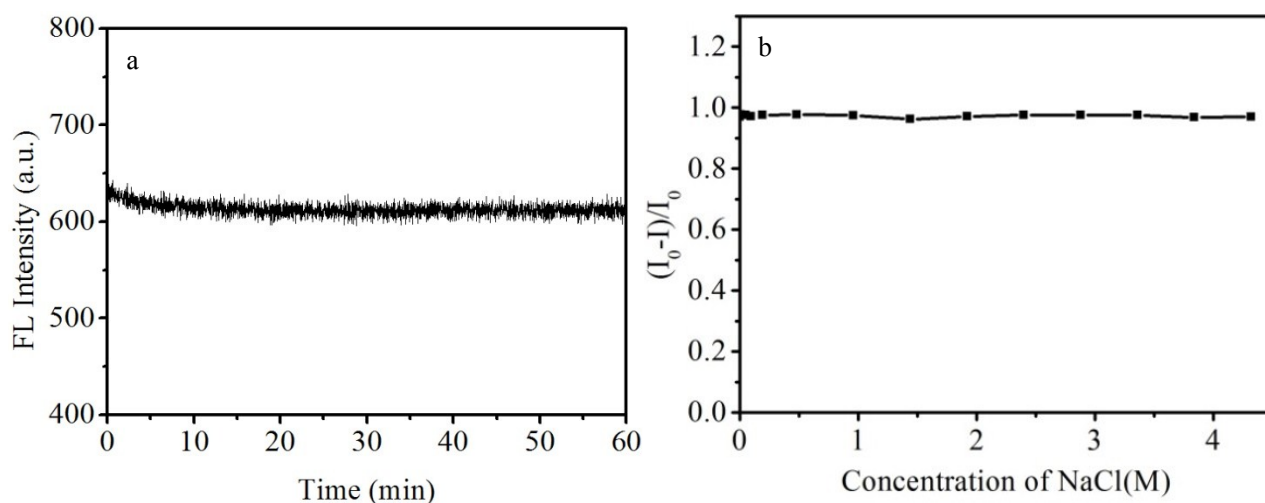
**Fig. S2** Fluorescence spectra of CDs prepared under different temperature (a) and reaction time (b).



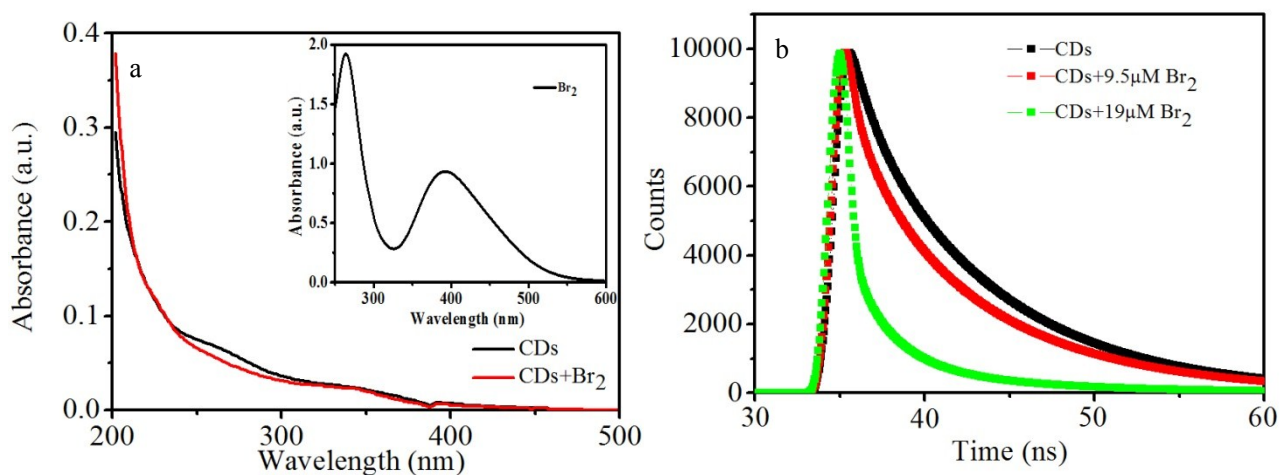
**Fig. S3** XPS spectra of CDs (a), C1s (b), O1s (c) and N1s spectra (d).



**Fig. S4** Effects of pH values on the fluorescence quenching efficiency of CDs.



**Fig. S5** (a) Photostability of CDs under the irradiation of 340 nm; (b) stability in different ionic strengths of NaCl.



**Fig. S6** UV-vis absorption spectra (a) (The inset shows the ultraviolet absorption of  $\text{Br}_2$ ) and fluorescence lifetime (b) of CDs in the absence and presence of  $\text{Br}_2$ .