Supporting information

Green and facile synthesis of water-soluble carbon dots from ethanolic shallot extract for chromium ions sensing in milk, fruit juices, and wastewater samples

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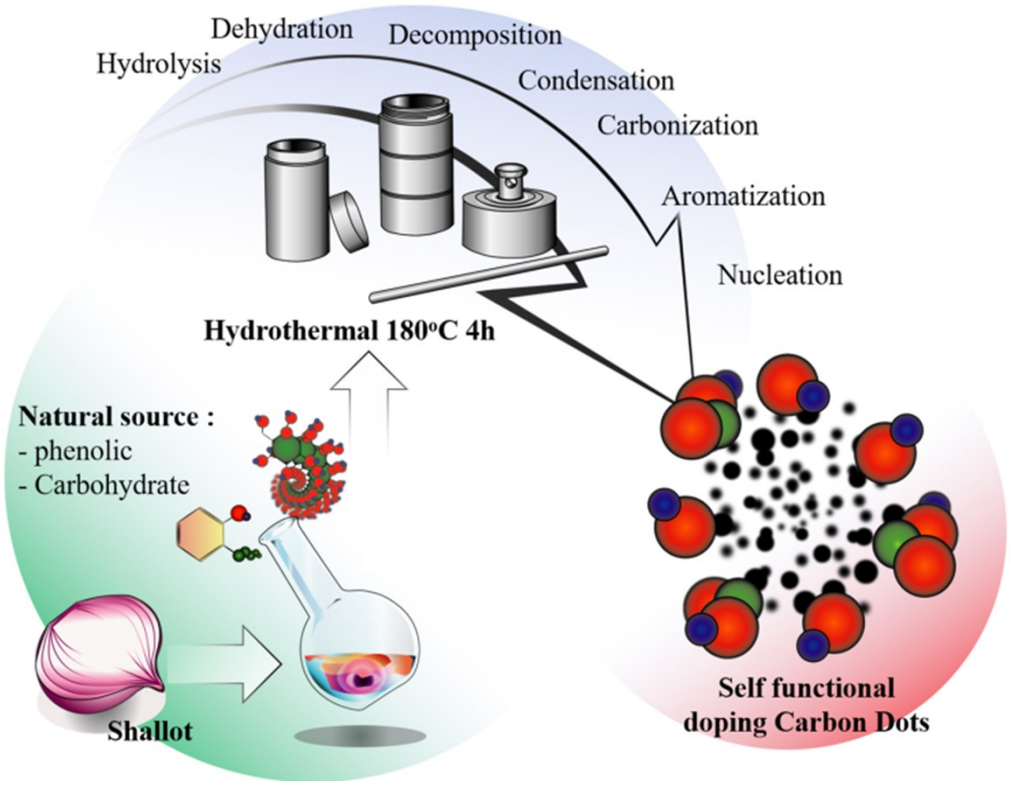
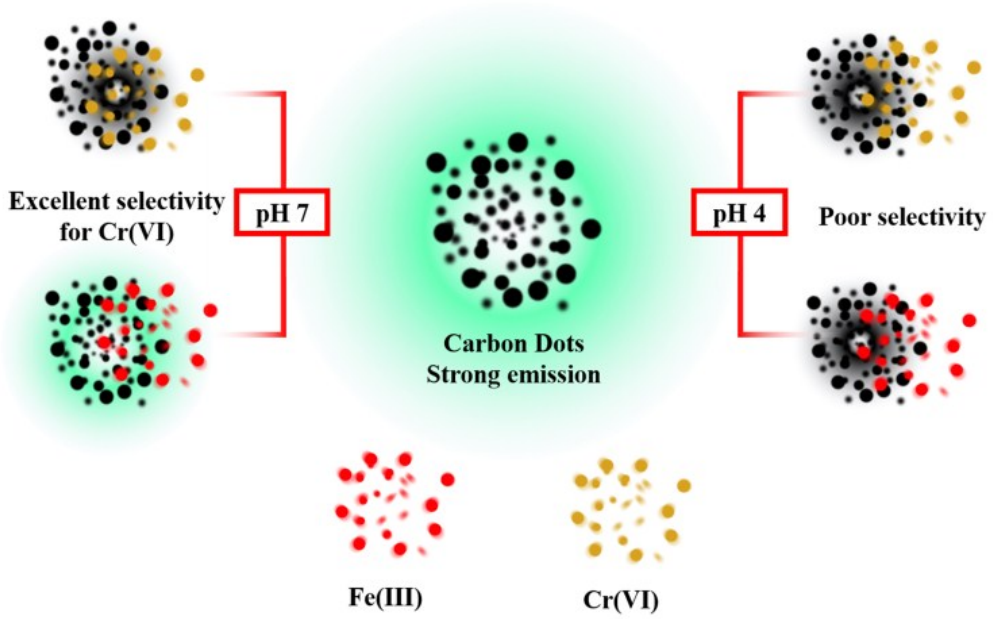


Scheme S1. Extraction and hydrothermal step for CDs synthesis from shallot.



Scheme S2. Quenching mechanisms of Cr(VI) and Fe(III) at pH 4 and pH 7.

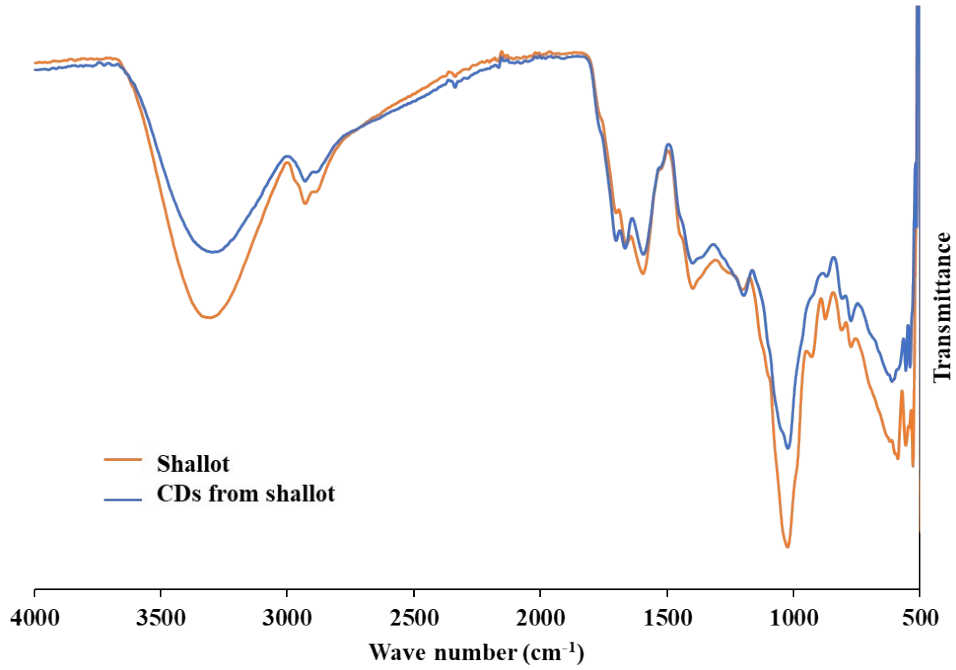


Fig. S1. FTIR spectra of shallot extract and its CDs.

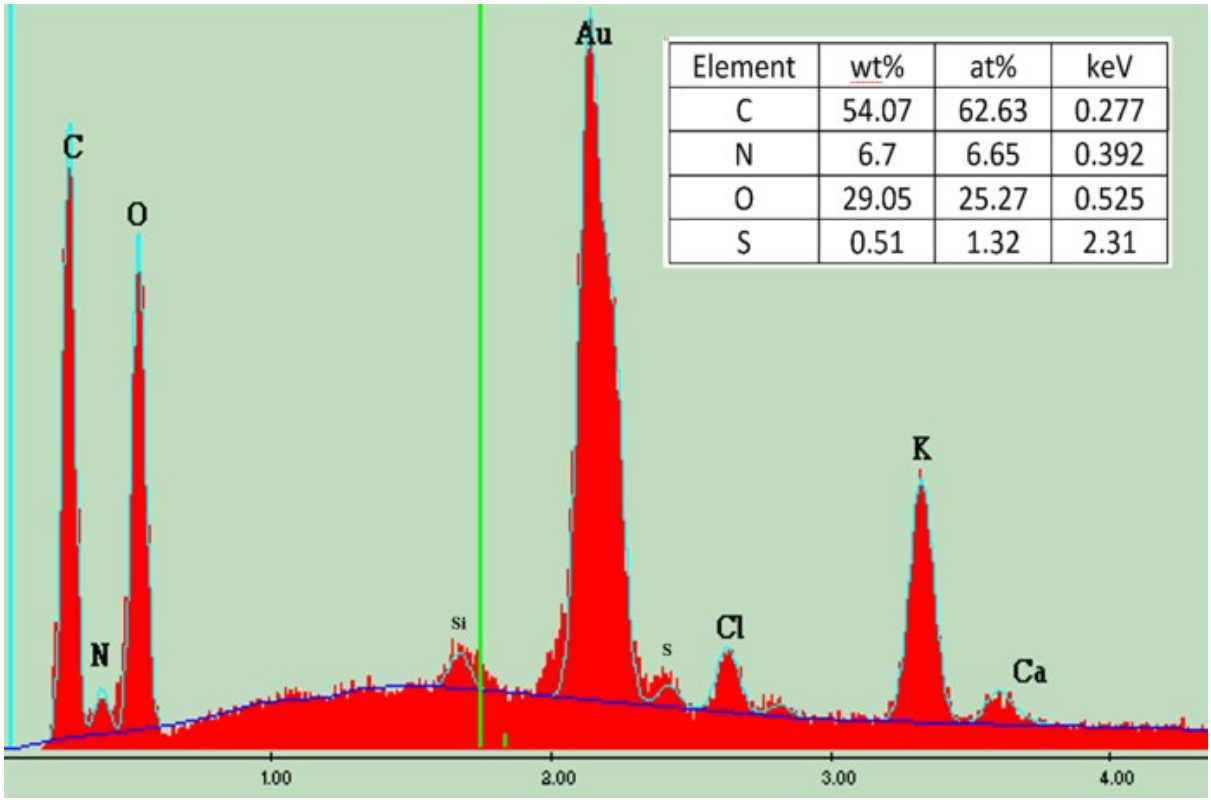


Fig. S2. EDX pattern of CDs.

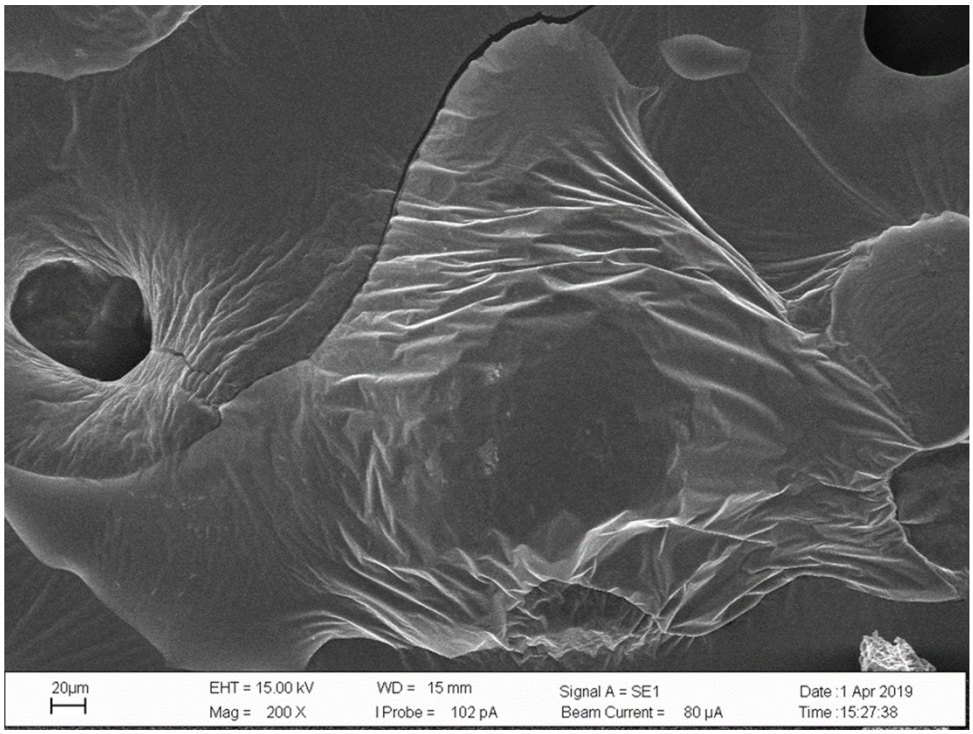


Fig. S3. SEM image of CDs.

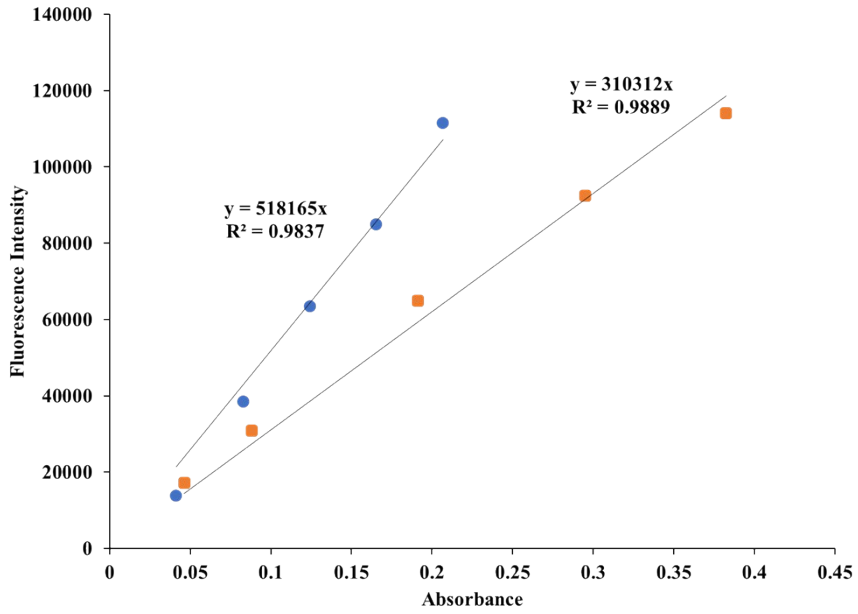


Fig. S4. Relative quantum efficiency of CDs and quinine sulfate.

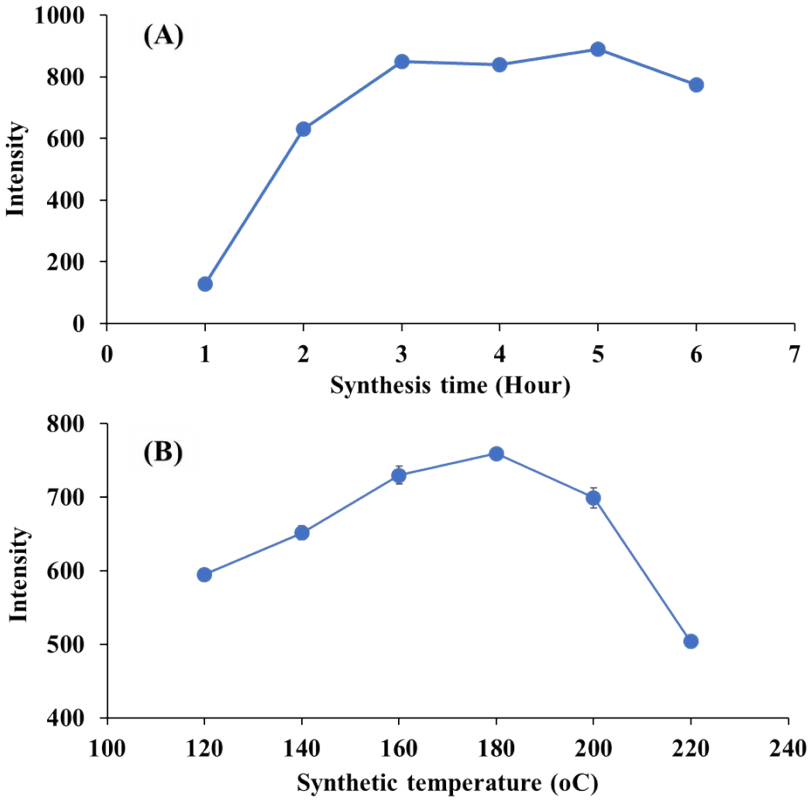


Fig. S5. (A) Effect of incubation time on fluorescence intensity of CDs for hydrothermal step. (B) Effect of incubation temperature on fluorescence intensity of CDs for hydrothermal step.

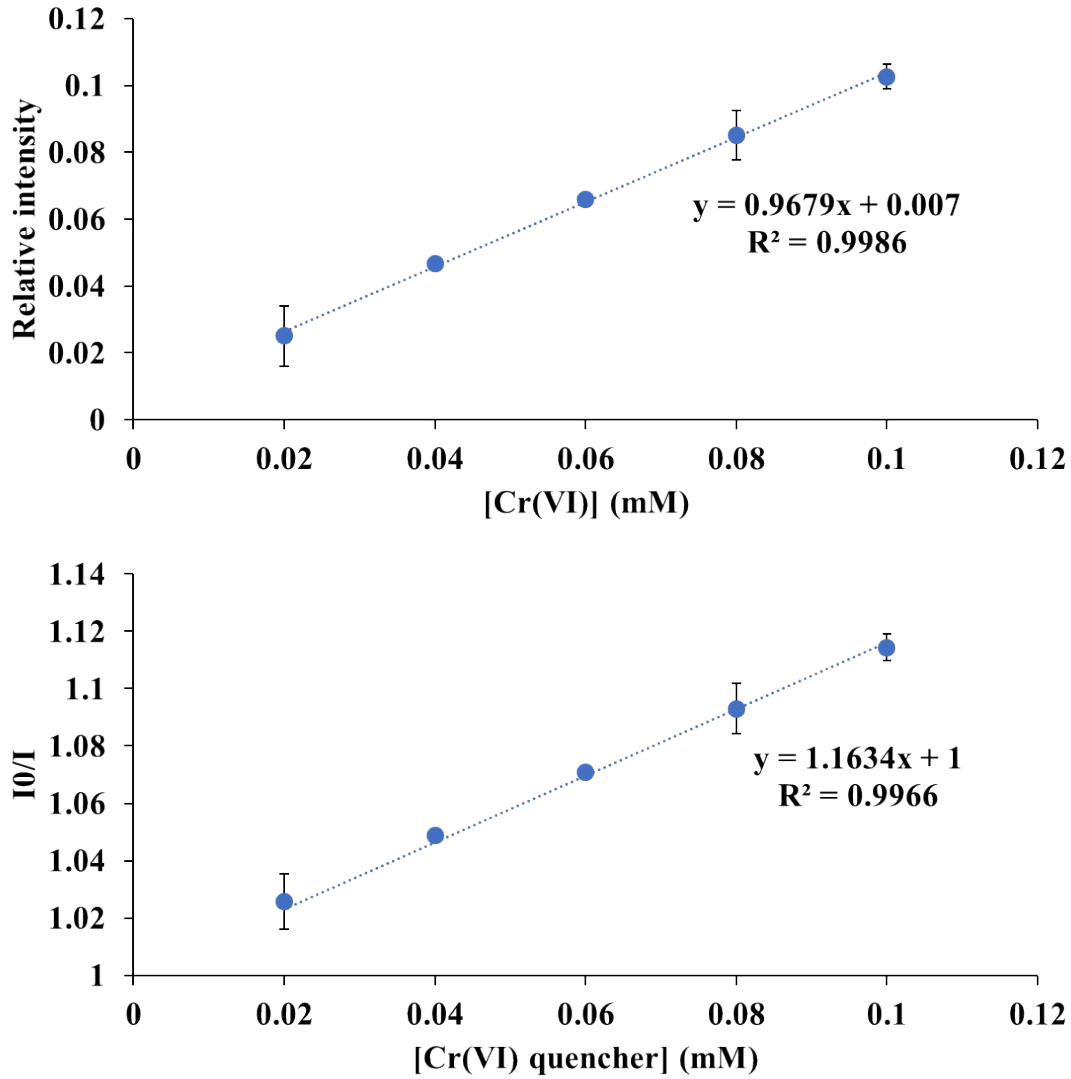


Fig. S6. (A) Effect of various concentrations of Cr(VI) quenching of CDs. (B) The Stern Volmer plot for Cr(VI) quenching effect.

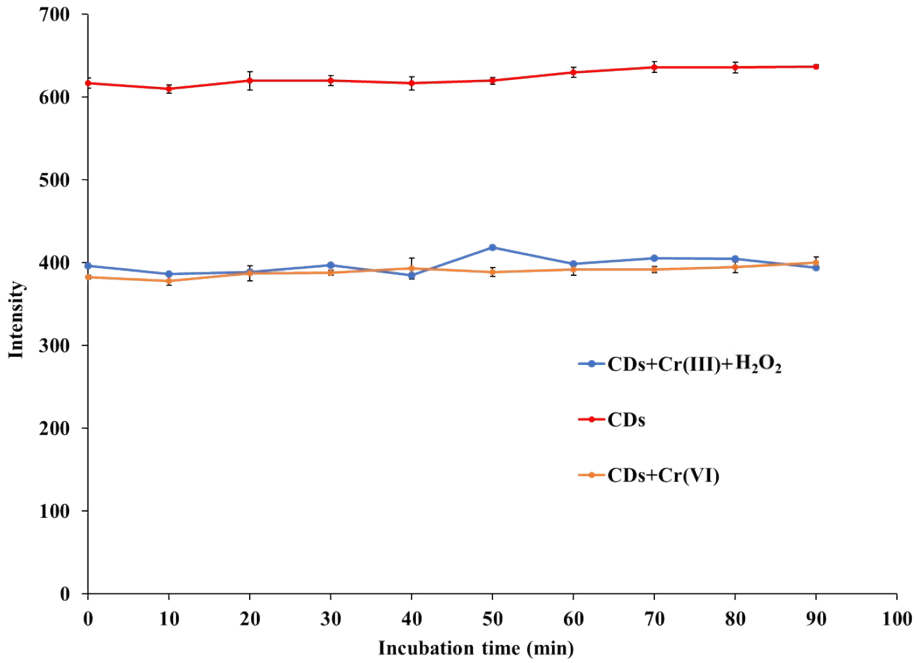


Fig. S7. Effect of incubation time (conversion reaction) of Cr(III) to Cr(VI) by oxidation with H_2O_2

85 **Table S1.** Analytical characteristics of the proposed method

Analytical parameter	Analytical feature
Linearity (μM)	20-100
Linear equation ((0,0) intersection) for	
20 - 100 (μM)	y = 2.2346x
100-1000 (μM)	y = 1.0928x
Correlation coefficient (R^2) for	
20-100 (μM)	0.9981
100-1000 (μM)	0.4725
Limit of detection (LOD), (μM), (n = 11)	3.5
Limit of quantification (LOQ), (μM), (n = 11)	11.7
Relative standard deviation (RSD), (%) for	
Intra-day analysis (n = 3x3)	2.78
Inter-day analysis (n = 5x3)	5.29

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