

Electronic Supplementary Material (ESI) for New Journal of Chemistry

Electronic Supporting Information (ESI)

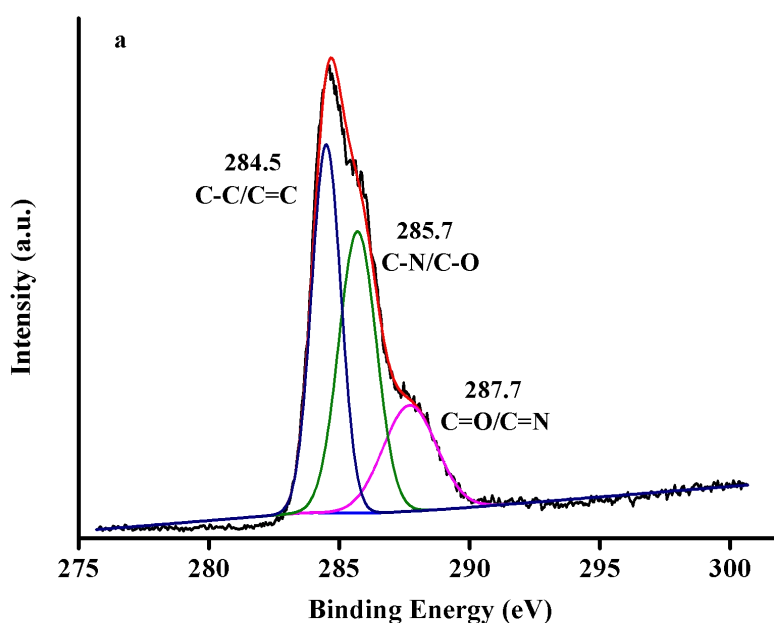
A sandwich-type ECL immunosensor for sensitive determination of CEA content based on red emission carbon quantum dots as luminophores

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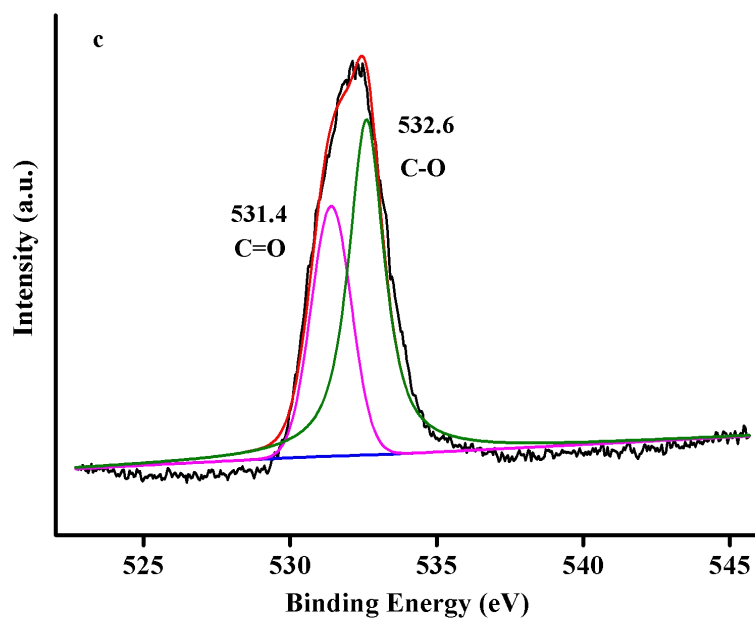
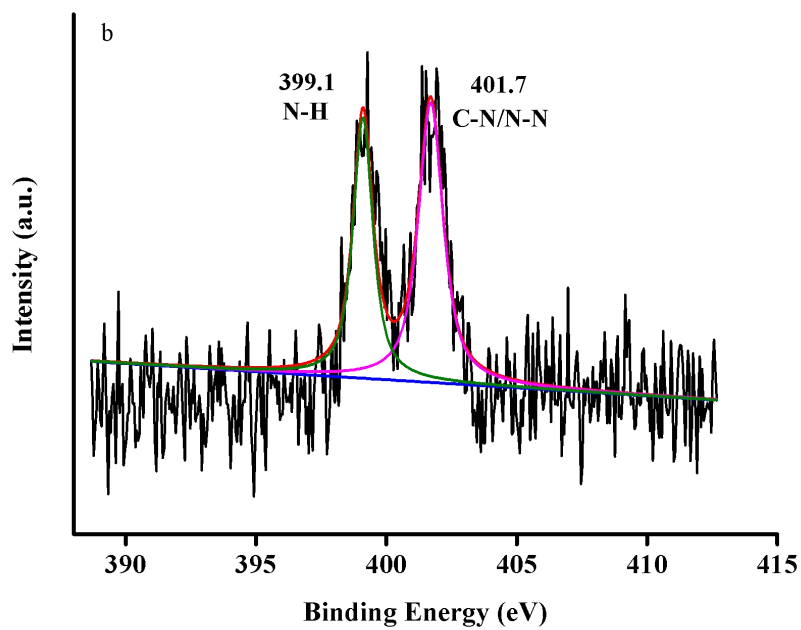


Fig. S1. The high-resolved XPS spectrum of C 1s (a), N 1s (b), O 1s (c) peak

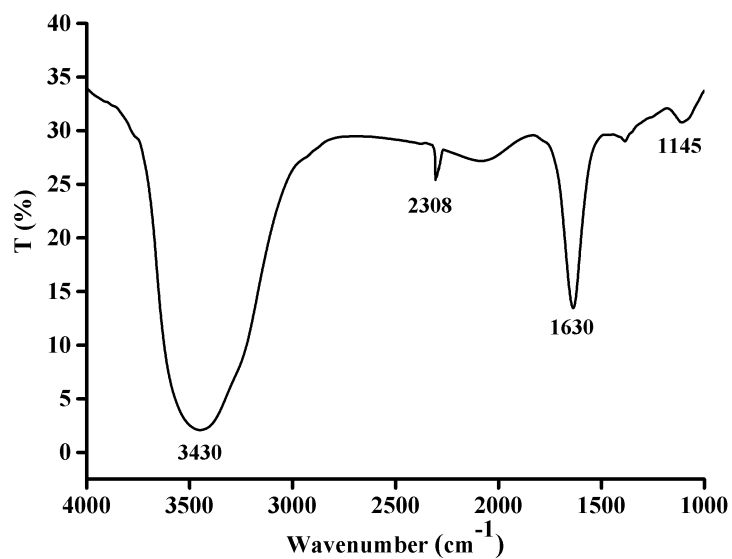


Fig. S2. The FT-IR spectrum of NH₂-G

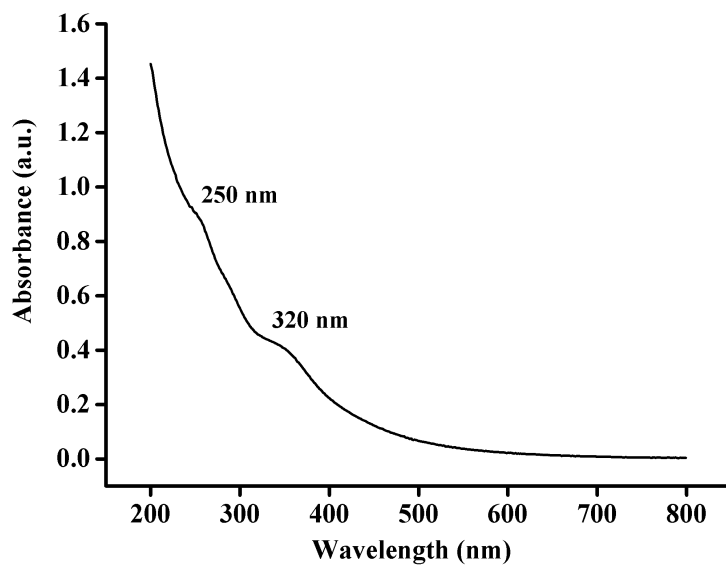


Fig. S3. The UV-vis spectrum of NH₂-G

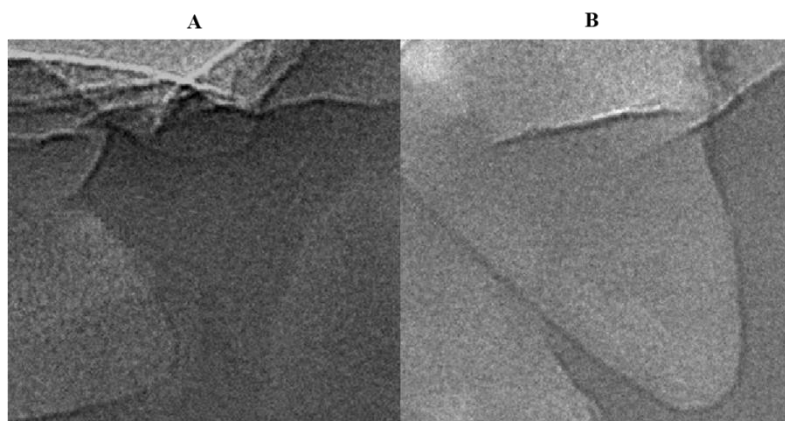


Fig. S4. The TEM and SEM images of NH₂-G.

Table S1 The atomic percent information of the RCQDs.

Elements	Atomic %	Start BE	Peak BE	End BE	Height CPS
C1s	66.42	296.7	284.78	280.15	8423.69
N1s	2.69	408.7	399.15	394.7	530.4
O1s	30.89	540.7	532.12	526.7	10771.87

Table S2 Human serum sample analysis using the proposed method and the ELISA method.

Sample	This method (ng/mL)	ELISA (ng/mL)	Relative error (%)
1	3.25	3.37	-1.7
2	6.50	6.55	-2.0
3	13.00	13.22	2.5