

Supporting Information

Presence and Formation of Fluorescence Carbon Dots in Grilled Hamburger

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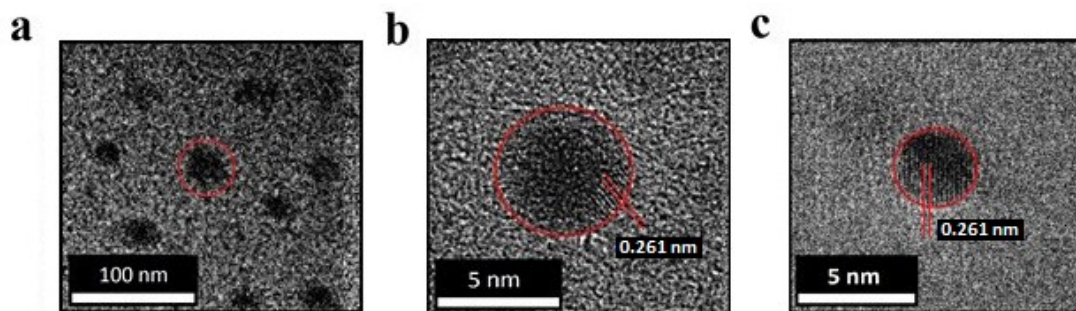


Fig. S1. (a) (b) (c) HRTEM image and corresponding particle size distribution of C-dots from grilled hamburger heated at 220, 260 and 300 °C, respectively.

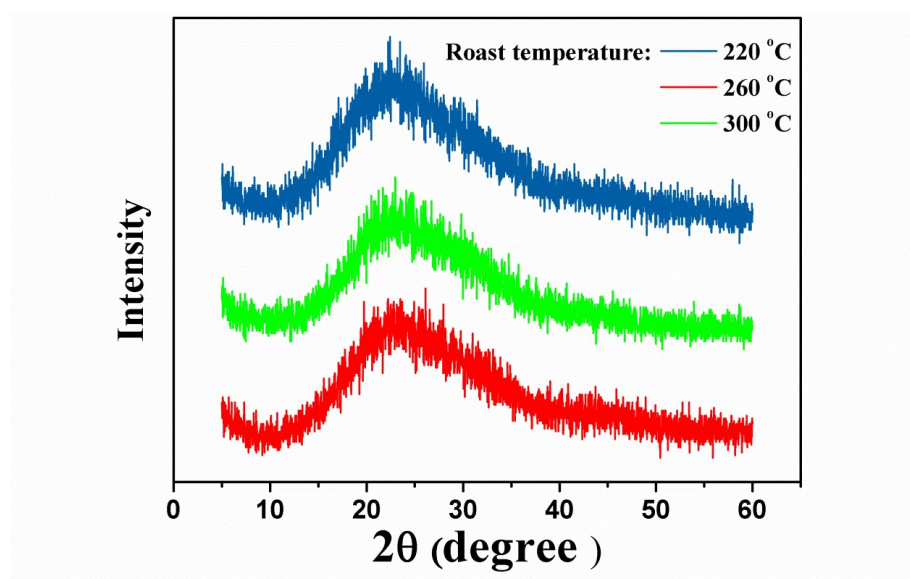


Fig. S2. XRD spectra of the resulting C-dots in grilled hamburger.

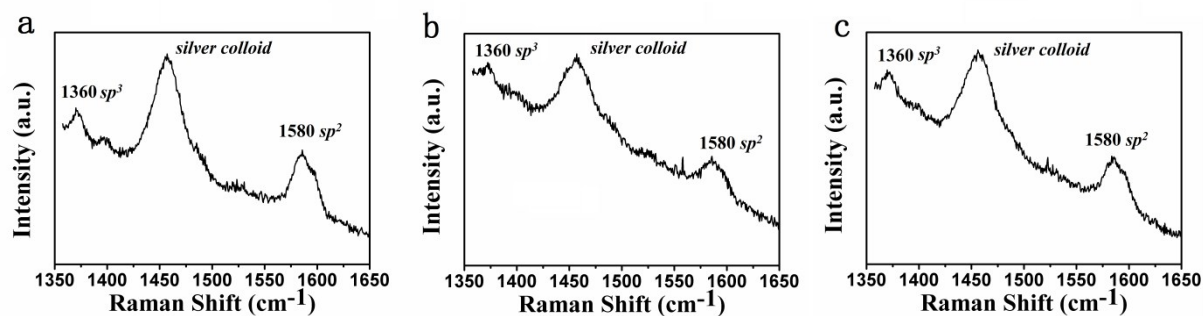


Fig. S3 (a) (b) (c) Raman spectra of the C-dots extracted from the roast beef samples processed at 220, 260, and 300 °C, respectively.

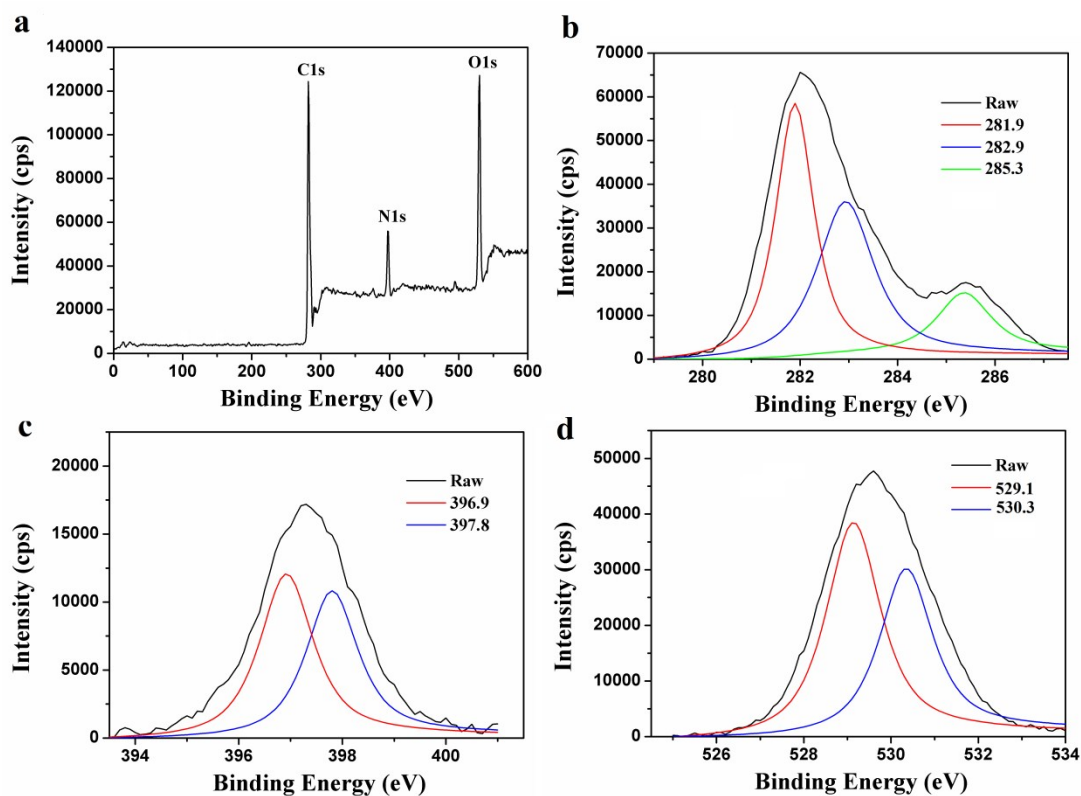


Fig. S4. XPS spectra of C-dots from hamburger samples heated at 260 °C: (a) survey spectrum; (b) C_{1s} spectrum; (c) N_{1s} spectrum, and (d) O_{1s} spectrum.

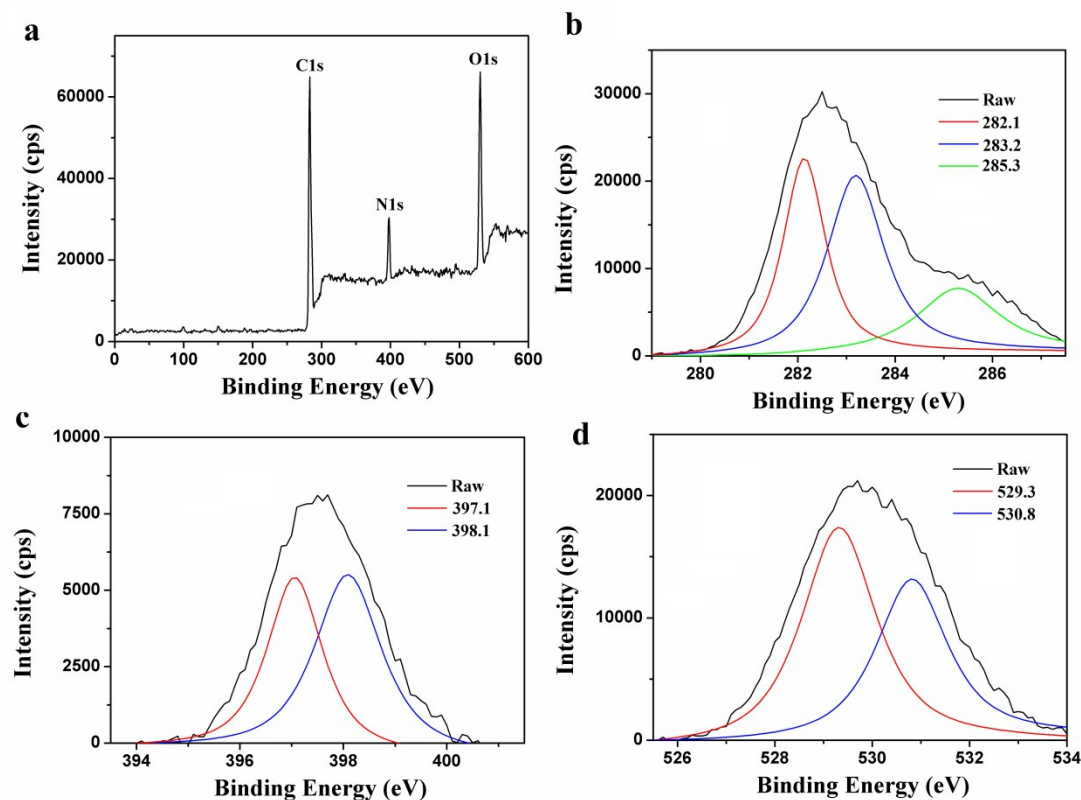


Fig. S5. XPS spectra of C-dots from hamburger samples heated at 300 °C: (a) survey spectrum; (b) C_{1s} spectrum; (c) N_{1s} spectrum, and (d) O_{1s} spectrum.

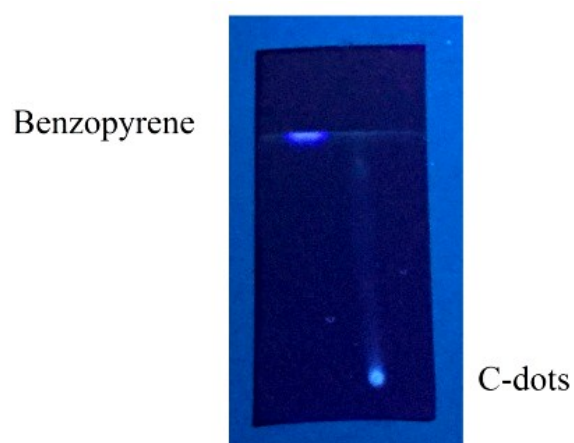


Fig. S6. Thin layer chromatography (TLC) result of C-dots derived from 220 °C and benzopyrene by silica gel chromatography using chloroform : methanol = 20:1 as an eluant.

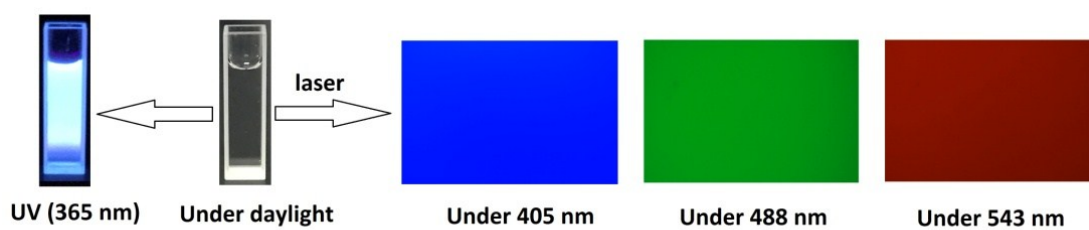


Fig. S7. Visible blue emission under UV (365 nm), and blue, green and red emissions under a fluorescent microscope when excited by 405, 488 and 543 nm lasers, respectively.

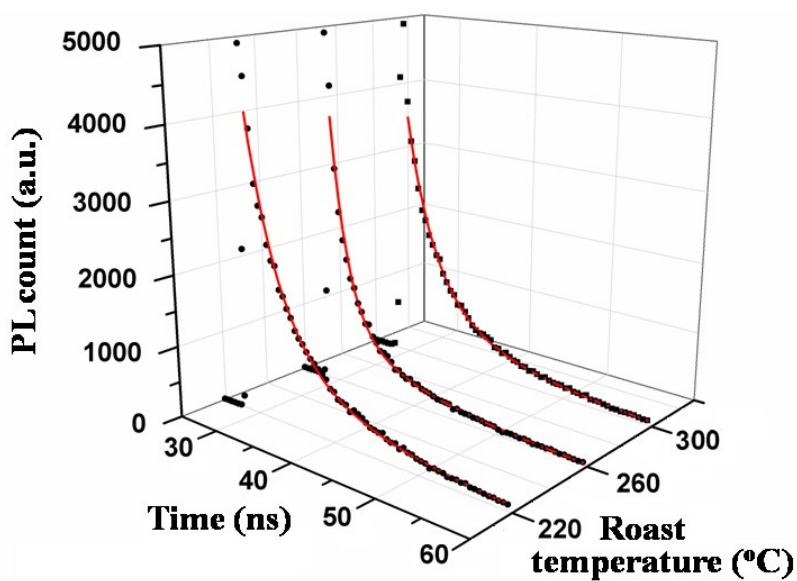


Fig. S8. Photoluminescence lifetime decay curves of the C-dots from hamburger samples heated at different temperature.

Table S1. Elementary composition of the C-dots in hamburger samples.

C-dots	C	O	N	S	P
C-dots(220 °C)	68.60	17.34	13.38	0.56	0.12
C-dots(260 °C)	70.67	19.80	8.86	0.58	0.09
C-dots(300 °C)	69.02	20.72	9.82	0.36	0.08