S1. Characterization of carbon nanodots

Synthesized carbon nanodots from date molasses were characterized by UV-Vis spectroscopy (Shimadzu), fluorescence spectroscopy (Varian Cary), and transmission electron microscopy (TEM, TECHNAI G2).

S2. Physico-chemical properties of carbon nanodots

UV-Vis spectroscopy of the sample was done by diluting the sample solution in distill water in 1:5 ratio. Characteristic features of CNDs were observed at 300 nm (p–p* transition due to surface bending of graphite C-C linkage) and a notch at 350 nm due to n–p* transition as shown in Fig. S1a.¹

Excitation and emission maxima of carbon nanodots were determined using fluorescence spectroscopy. As shown in Fig. S1b, excitation maximum was observed at around 415 nm and emission spectra at around 480 nm. The spectrum was positively skewed in nature with emission spectrum moderately leptokurtic as reported previously.¹

TEM bright field imaging was employed to characterize the nanostructure of the synthesized CNDs. As shown in Fig. S1c, CNDs were observed as tiny black dots with average size of 5–7 nm.

Further characterization of CNDs synthesized from date molasses are provided in our previous report.²
References
