

Supplementary Information

Multifunctional, fluorescent DNA derived Carbon dots for biomedical applications: bioimaging, luminescent DNA hydrogels and dopamine detection

Pankaj Kumar Pandey¹, Preeti², Kamla Rawat³, Tulika Prasad^{2,4*} and H. B. Bohidar^{1,2*}

¹School of Physical Sciences, Jawaharlal Nehru University, New Delhi, India

²Special Centre for Nanoscience, Jawaharlal Nehru University, New Delhi, India

³Department of Chemistry, School of Chemical and Life Science, Jamia Hamdard, New Delhi, India

⁴Advanced Instrumentation Research and Facility, Jawaharlal Nehru University, New Delhi,

Determination of Quantum Yield: QY was determined using DAPI (4',6-Diamidino-2-Phenylindole, Dilactate) as the reference sample (QY_r in water =43%). QY of the samples were calculated using the following formula,

$$QY = (F A_r QY_r) / (F_r A)$$

where F and A represents the integrated fluorescence intensity and absorbance of the sample and F_r and A_r represents the corresponding reference values, which yields QY= 40%. Yes, Authors tested the fluorescence spectra of the samples over a week and did not find significant change.

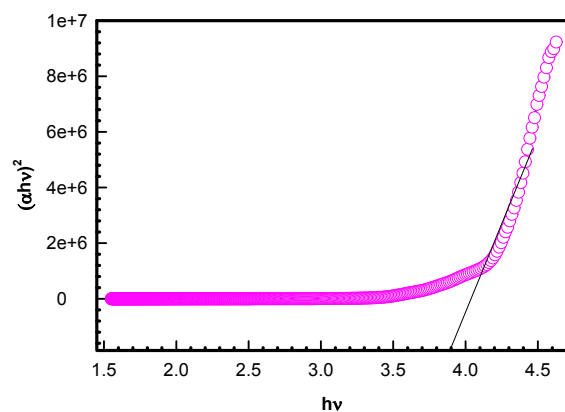


Fig S1. Band gap determination from Tauc plot.

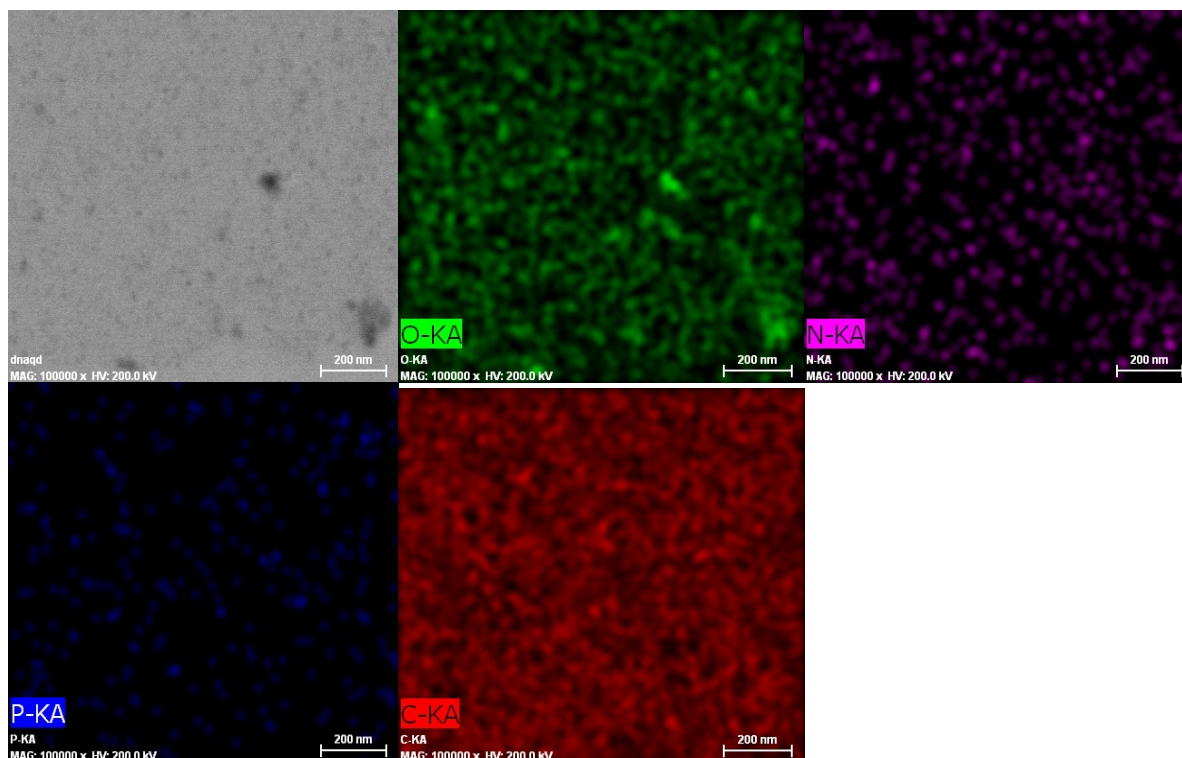


Fig S2. TEM EDX images from DNA derived carbon dots.

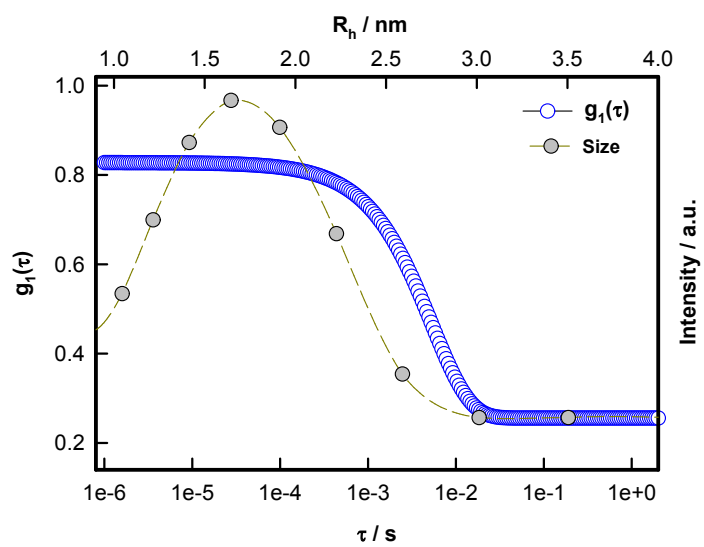


Fig S3. DLS correlation function from carbon dot dispersion.

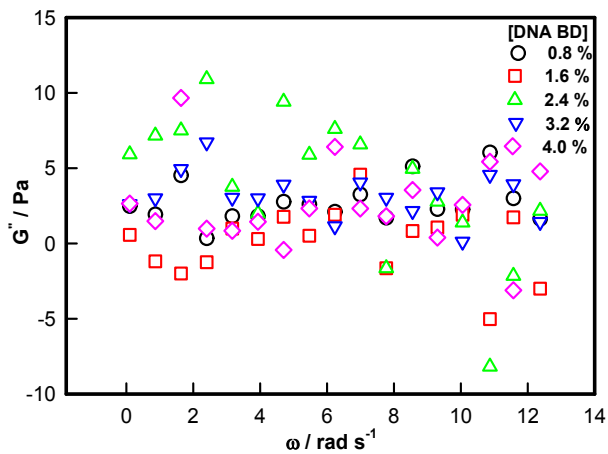


Fig S4. G'' data for carbon dot based DNA hydrogel

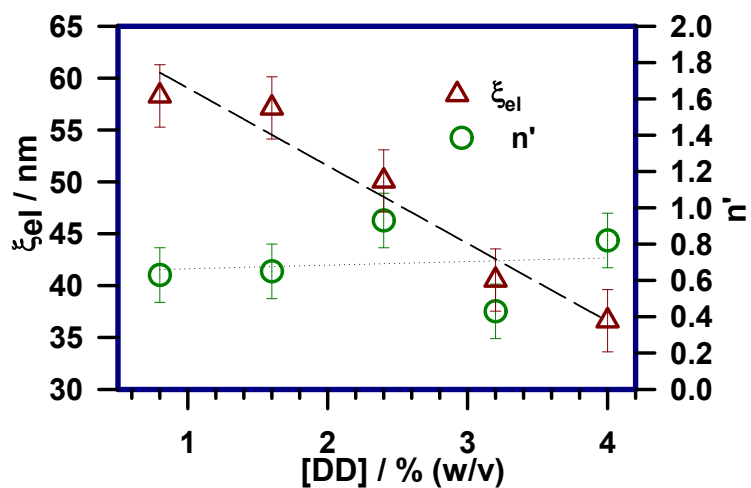


Fig S5. Variation of viscoelastic length and power law exponent n' for DNA-Carbon Dot hydrogel with different DD (C-Dot) concentration.

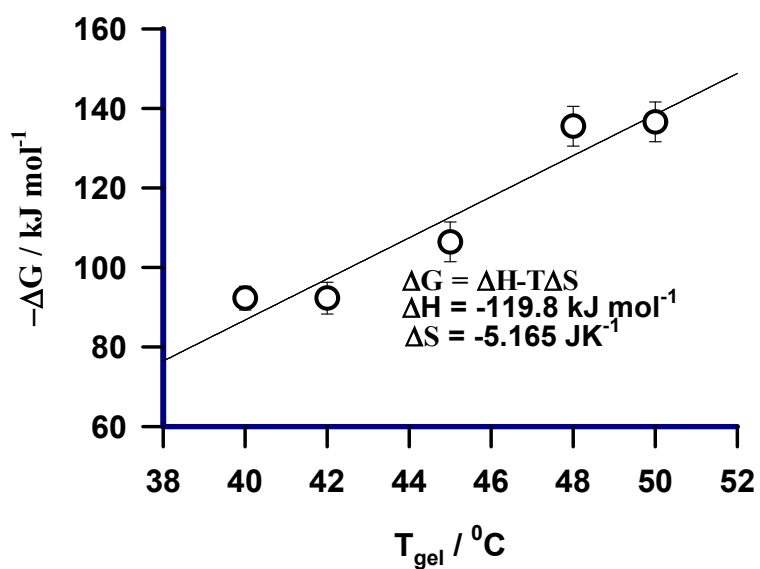


Fig S6. Variation of change in Gibb's free energy for DNA-C-Dot hydrogel with different T_{gel} .

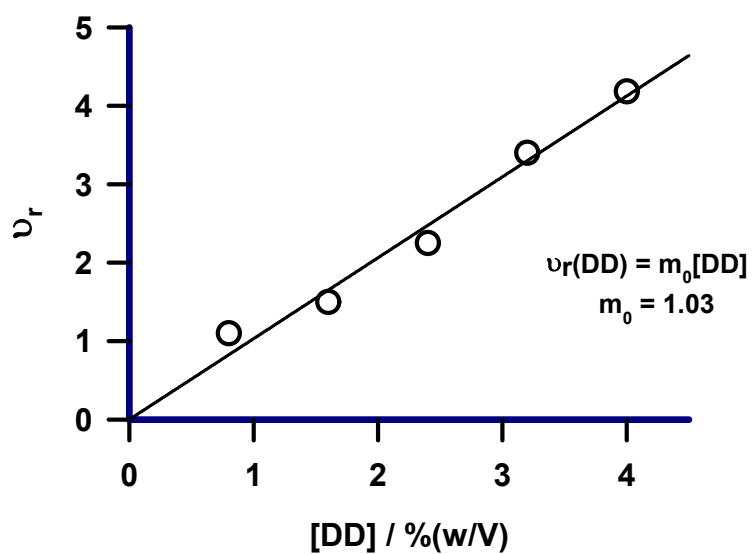


Fig S7. Relative network density of DNA-C-Dot hydrogel with dot (DD) concentration.