## **Electronic Supplementary Information (ESI)**

## Unlocking the Full Potential of Citric Acid-Synthesized Carbon Dots as Supercapacitor Electrode Material via Surface Functionalization

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|             | Calculation band gap energy (eV) |      | Size by TEM (d.nm) | Hydrodynamic radius<br>(d.nm) |
|-------------|----------------------------------|------|--------------------|-------------------------------|
| Sample name | UV/Vis                           | PL   |                    |                               |
| CD          | 2.58                             | 2.53 | $24.72 \pm 2.34$   | 46.86± 7.75                   |
| CD-bis16    | 2.61                             | 2.70 | $19.17 \pm 3.13$   | 31.40± 5.21                   |
| CD-bis64    | 2.63                             | 2.64 | $23.58 \pm 2.70$   | 41.39± 6.92                   |

Table S1: Calculation of Energy Band Gap, TEM size, and Hydrodynamic Radius for CD and CD-bis.



Figure S1. Tauc plot graphs which calculated from UV/Vis data of CDs.



Figure S2. Determination of Band Gap Energy from the Photoluminescence of CDs.