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Figure S1. Excitation/Emission Matrix for all water-soluble CDs with a concentration of $100 \mu g/mL$ in water.



Figure S2. pH-dependence emission spectra for the water-soluble CDs: (a) $CDs_{1:0.8}$, (b) $CDs_{1:1}$ and (c) $CDs_{1:2}$ with a concentration of 100 μ g/mL. In water. pH adjust made using 0.1M of HCl and NaOH aqueous solution.



Figure S3. XPS core level spectra of water-soluble $CDs_{1:0.8}$ (a) C 1s; (b) O 1s and (c) N 1s.



Figure S4. XPS core level spectra of water-soluble $CDs_{1:2}$ (a) C 1s; (b) O 1s and (c) N 1s.



Figure S5. Excitation/Emission Matrix for all water/hydroxide-soluble CDs with a concentration of $100 \mu g/mL$ in water.



Figure S6. pH-dependence emission spectra for the hydroxide-soluble CDs: (a) $CDs_{1:0.8}$, (b) $CDs_{1:1}$ and (c) $CDs_{1:2}$ with a concentration of 100 μ g/mL. In water. pH adjust made using 0.1M of HCl and NaOH aqueous solution.



Figure S7. XPS core level spectra of hydroxide-soluble $CDs_{1:0.8}$ (a) C 1s; (b) O 1s and (c) N 1s.



Figure S8. XPS core level spectra of hydroxide-soluble $CDs_{1:2}$ (a) C 1s; (b) O 1s and (c) N 1s.



Fig. S9 % lost mass for water- and hydroxide-soluble CDs(a) CDs_{1:0.8}, (b) CDs_{1:1} and (c) CDs_{1:2}. Initial mass of 50 mg. Oven temperature of 400°C / 1 hour.



Figure S10. Fluorescent spectra of water-soluble $CD_{1:1}$ (a), and hydroxide-soluble $CD_{1:1}$ (b), at two different times: T0 (after CD preparation) and T1 (60 days after synthesis).