A convenient method for isolating carbon quantum dots in high yield as alternative to dialysis process and fabrication of full-band UV blocking polymer film

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Figure S1

Fig. S1. The particle size histogram from TEM image
A broad absorption band observed in the range 3000–3600 cm\(^{-1}\), associated to the stretching modes of the hydroxyl (–OH) group. Other absorption bands at 3072 cm\(^{-1}\) and 2985 cm\(^{-1}\) are due to sp\(^2\) and sp\(^3\) C–H stretching modes, respectively. Also, an alkene (C=C) and carboxylic acid (C=O) stretching mode are observed at 1540 cm\(^{-1}\) and 1651 cm\(^{-1}\), respectively. An intense and sharp bands at range 905 cm\(^{-1}\), which corresponded to asymmetric and symmetric C–O–C stretching vibrations and secondary C–OH stretching modes.
**Figure S3**

![XPS spectrum](image)

Fig. S3. The full survey XPS spectrum of CQD isolated via a solvent extraction method.
Figure S4

Fig. S4. UV absorbance (top) and transmittance (bottom) spectra of CQD dispersed polymer films
Fig. S5. UV shielding capability as the function of increasing CQD content under the illumination of a UV lamp. [Inset: photograph of polymer films after curing]