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Nanocomposite of N-doped Carbon Dots with Gold Nanoparticles for Visible Light Active Photosensitisers

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Electronic Supporting information

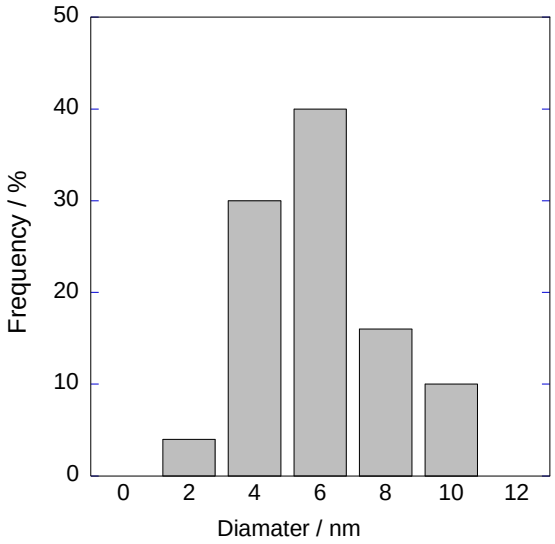

Fig. S1. The size histogram of N-CDs from TEM images .

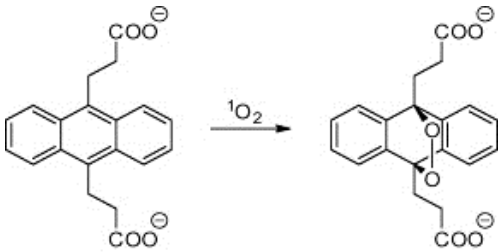

Fig. S2. Schematic Chemical structure figure of ADBA with $^1O_2$ singlet production.

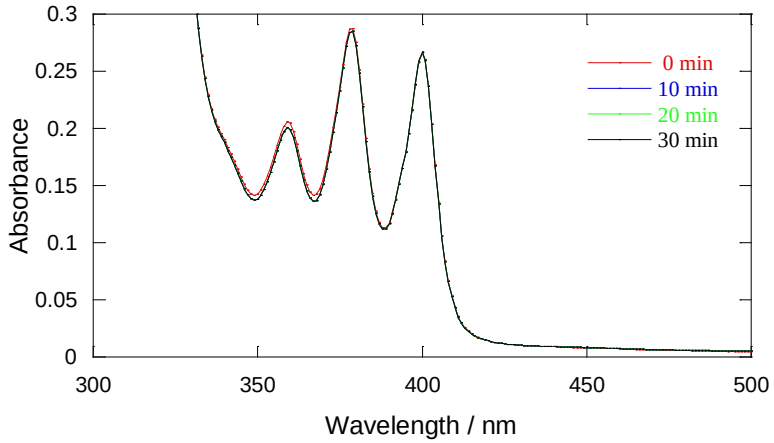

Fig. S3. UV−vis spectra of ADBA aqueous solution in the presence of CDs without N-doping.

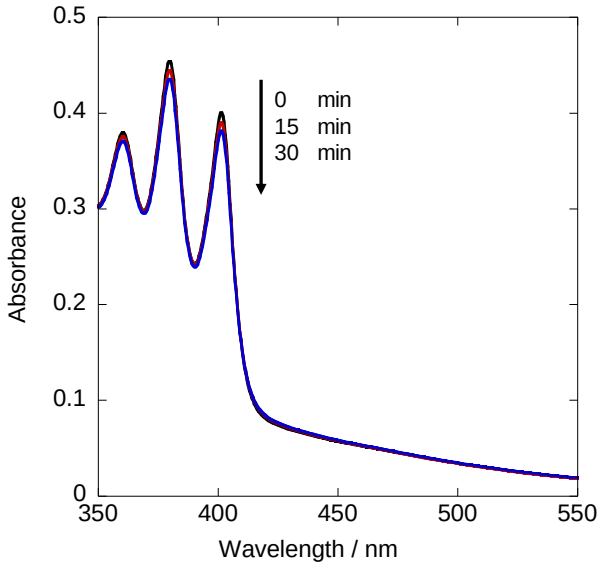

Fig. S4. UV−vis spectra of ADBA aqueous solution in the presence of N-CDs and 10 mM histidine.

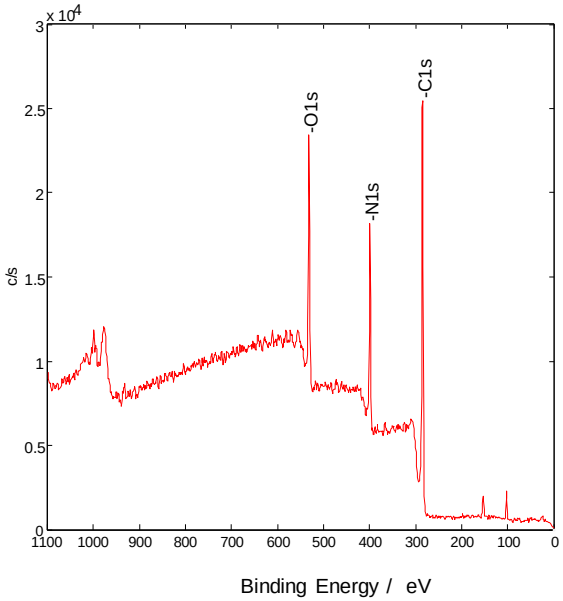

Fig. S5. XPS spectrum of the N-CDs-Au NPs nanocomposite.

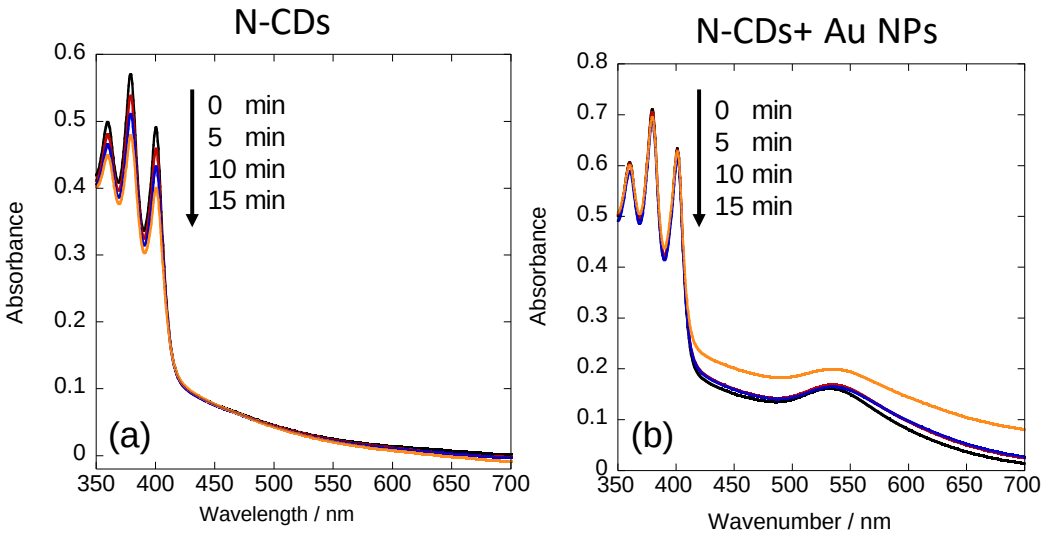

Fig. S6. (a) UV−vis spectra of ADBA aqueous solution in the presence of N-CDs (TA: PEI = 1:1). (b) UV−vis spectra of ADBA in mixed aqueous solution of N-CDs (TA: PEI = 1:1) and citrate-stabilised Au NPs. The N-CD content of sample (a) is consistent with that of sample (b). The peak shift of Au NPs around 550 nm after the light irradiation (Fig. S6b) is attributed to the aggregation of Au NPs.

Synthesis of citrate-stabilised Au NPs[1]:

A 100 mL sample of aqueous $HAuCl_4$ (0.25 mM) was put into a 250 mL flask at room temperature. After the solution was brought to boil while magnetically stirring (400 rpm), 0.7 mL of 5% sodium citrate solution was added. The reaction was completed until the solution became wine red in color.

Reference

(1) Lili Zhao, Di Jiang, Yue Cai, Xiaohui Ji, Renguo Xie and Wensheng Yang, *Nanoscale,* 2012, **4,** 5071–5076.