Electronic Supplementary Material (ESI) for New Journal of Chemistry
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Supporting Information

C/N-sensitized self-assembly of mesostructured TiO_2 nanospheres with significantly enhanced photocatalytic activity

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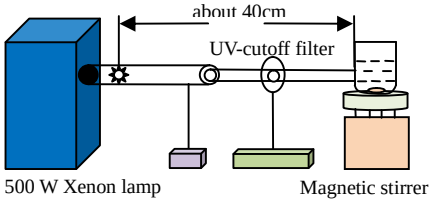

Figure S1. The schematic diagram of photodegradation progress, illumination distance and strength, initial amounts of RhB and photocatalysts, stirring speed were all maintained the same.

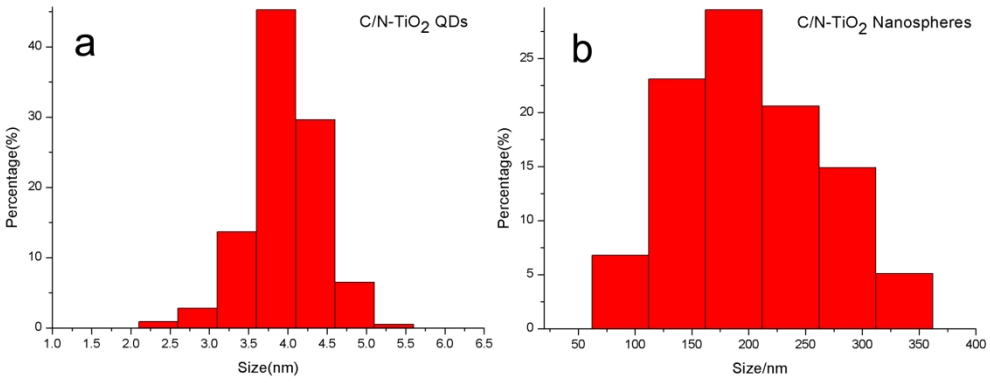

Figure S2. Size distribution histogram of (a) C/N-TiO_2 QDs and (b) C/N-TiO_2 nanospheres. ~300 particles are measured to get the size distribution.

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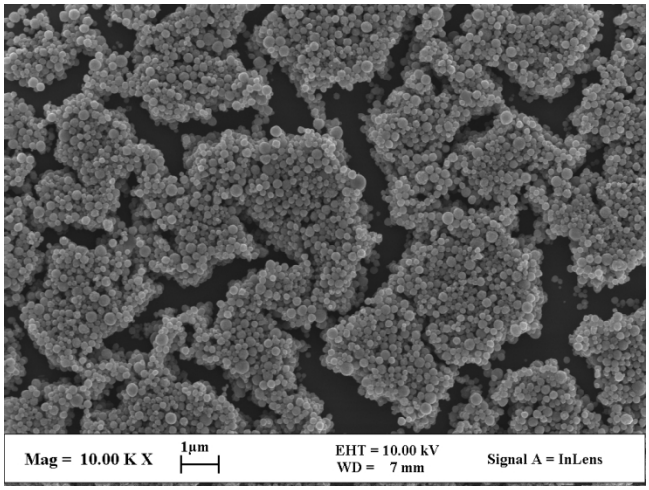

Figure S3. SEM images of miroporous C/N-TiO_2 nanospheres after degradation of RhB several cycling uses.

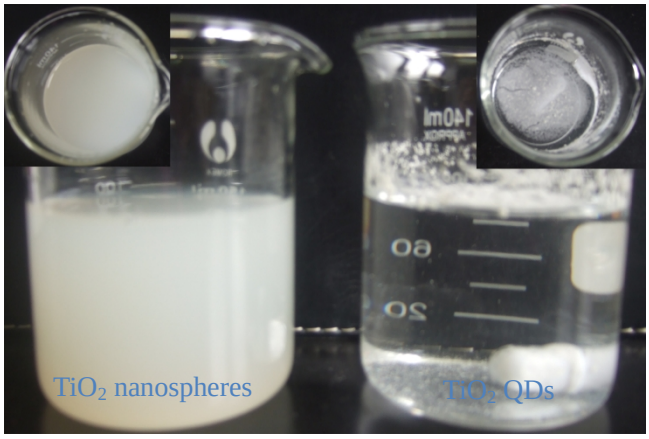

Figure S4. C/N-TiO_2 nanospheres and C/N-TiO_2 QDs dissolved in deionized water.

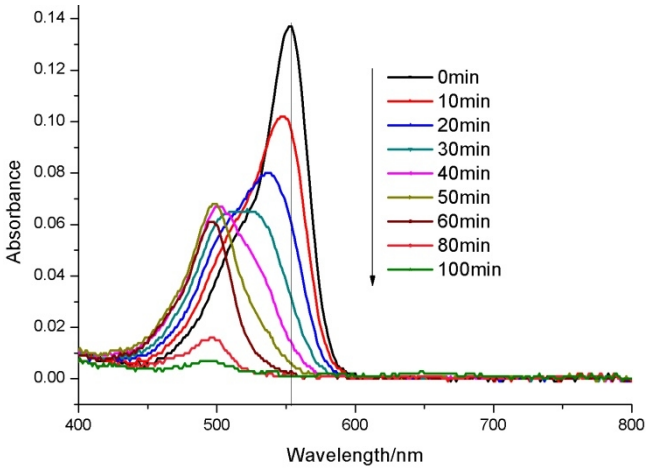

Figure S5. UV-vis spectral changes of RhB as a function of irradiation time and the wavelength position of its major absorption band moved toward the blue region. The wavelength shift is caused by de-ethylation of RhB because of attack by one of the active oxygen species on the N-ethyl group[1].

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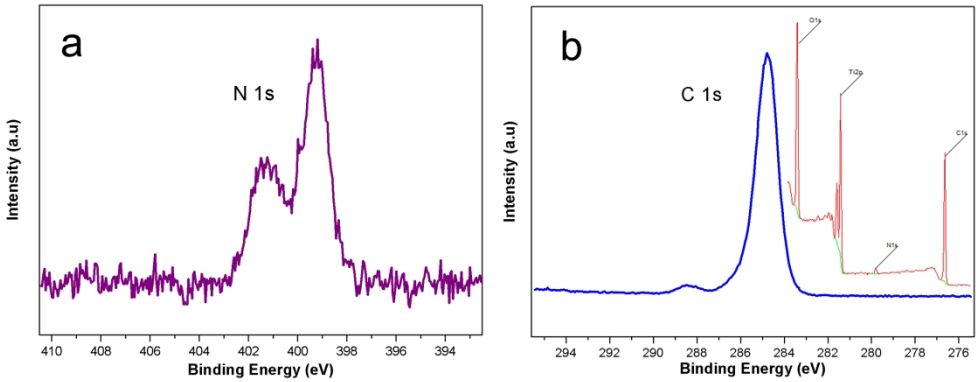

Figure S6. XPS spectra of (a) N 1s and (b) C 1s region for C/N-TiO_2 nanospheres after degradation of RhB several cyclings.

Table S1. Values, Standard Error and R^2 of TiO_2 based catalysts during degrading rhodamine B (according to Figure 7,8,9).

Samples	*Mean Value*	*Standard Error*	R^2
P25	0.00192	0.000109	0.9838
C/N-TiO_2 QDs-300	0.00198	0.000154	0.9704
C/N-TiO_2 QDs-200	0.00108	0.000101	0.9571
C/N-TiO_2 QDs	0.00807	0.000254	0.9950
C/N-TiO_2 nanospheres-300	0.00763	0.000476	0.9808
C/N-TiO_2 nanospheres-200	0.00559	0.000260	0.9892
C/N-TiO_2 nanospheres	0.147	0.0159	0.9715
C/N-TiO_2 nanospheres (2.5×)	0.0913	0.00626	0.9769
First Cycling	0.147	0.0102	0.9715
Second Cycling	0.139	0.00667	0.9886
Third Cycling	0.160	0.0145	0.9621
Fourth Cycling	0.143	0.0167	0.9354

[1] T. X. Wu, G. M. Liu, J. C. Zhao, H. Hidaka and N. Serpone, *J. Phys. Chem. B.*, 1998, **102**, 5845.