## **Supplementary Information**

## **Biomass-derived Carbon Quantum Dots for Visible-Light-Induced Photocatalysis and Label-Free Detection of Fe(III) and Ascorbic acid**

Gouri Sankar Das<sup>a</sup>, Jong Pil Shim<sup>b</sup>, Amit Bhatnagar<sup>c</sup>, Kumud Malika Tripathi<sup>\*a</sup>, and TaeYoung Kim<sup>\*a</sup>

<sup>a</sup> Department of Bionanotechnology, Gachon University, 1342 Seongnam-daero, Sujeong-gu Seongnamsi, Gyeonggi-do 13120, South Korea

<sup>b</sup> Department of Materials Science and Engineering, Korea University, 145 Anam-ro, Seongbuk-gu, Seoul 02841, Korea

<sup>c</sup> Department of Environmental and Biological Sciences, University of Eastern Finland, FI-70211, Kuopio, Finland

<sup>d</sup> Department of Materials Science and Engineering, Gachon University, 1342 Seongnam-daero, Sujeonggu Seongnam-si, Gyeonggi-do 13120, South Korea

Corresponding Author: <u>kumud20010@gmail.com</u>, <u>taeykim@gachon.ac.kr</u>



Figure S1. Wide-angle XPS spectrum of CQDs.

Element	Weight%	Atomic %
C K	73.22	78.45
O K	26.78	21.55
Totals	100.00	

Table S1. EDS analysis of CQDs.

## **Photostability of CQDs**



Figure S2. PL emission of CQDs under continuous UV (365 nm) irradiation for 60 min.

## Photocatalytic degradation of MB dye under visible-light irradiation



Figure S3. UV-vis absorption spectra of MB in presence of CQDs under visible light irradiation;