# Supporting Information

# Distorted Carbon Nitride Structure with Substituted Benzene Moieties for Enhanced Visible Light Photocatalytic Activities

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Include: Figures S1-S8, Table S1

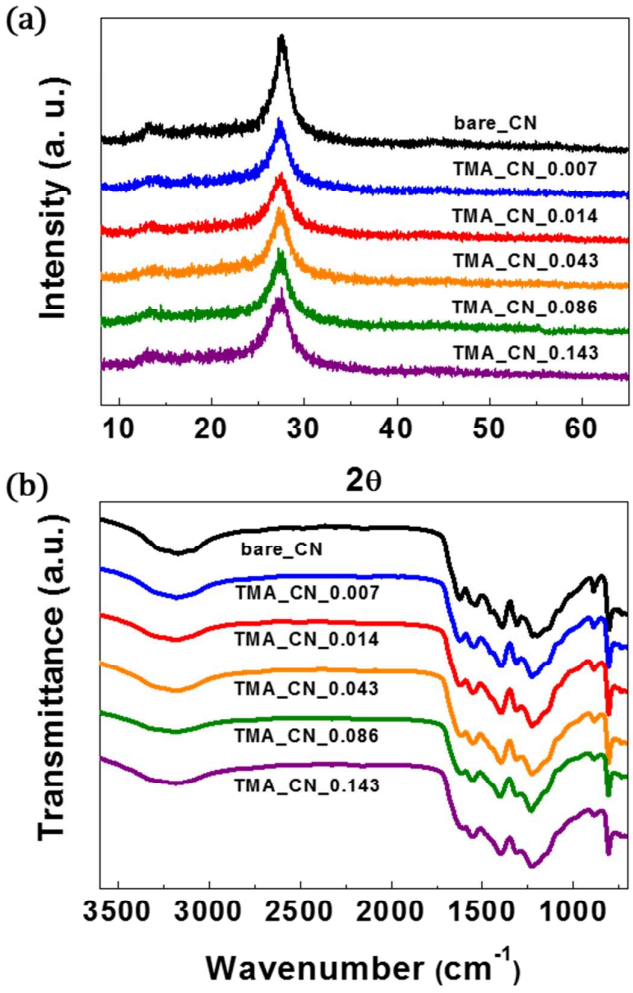
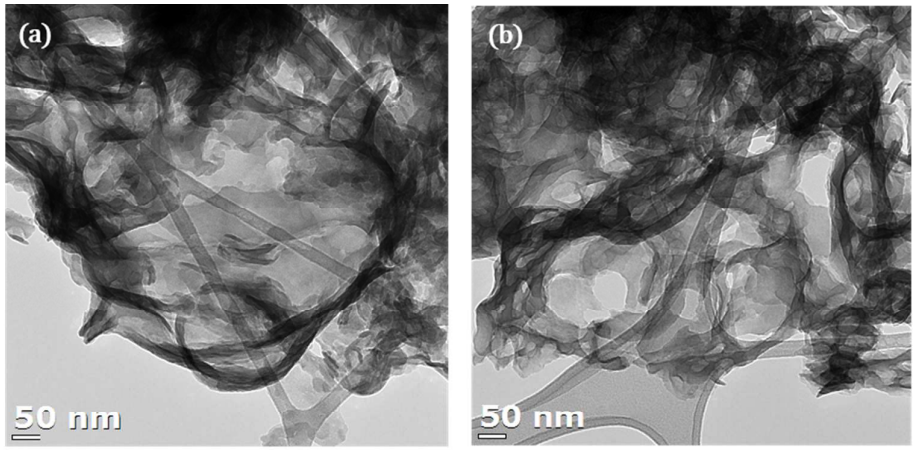
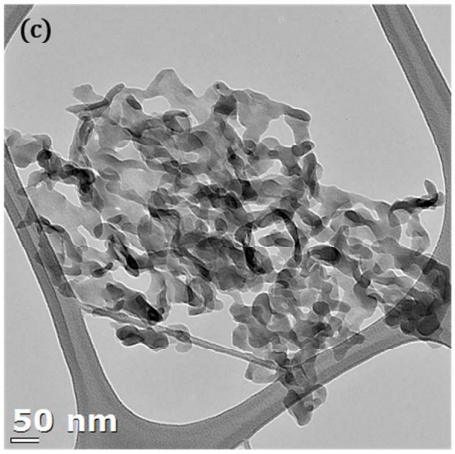



**Figure S1.** (a) XRD spectra and (b) ATR FT-IR spectra of bare_CN and TMA_CN varying content of TMA




(d)

| Sample | C (At %) | N (At %) | O (At %) |
|---|---|---|---|
| bare_CN | 54.17 | 45.83 | 0 |
| TMA_CN_0.014 | 57.19 | 42.81 | 0 |
| TMA_CN_2.8 | 74.51 | 24.42 | 1.07 |

**Figure S2.** TEM images of (a) bare_CN, (b) TMA_CN_0.014 and (c) TMA_CN_2.8 (d) elemental compositions obtained from EDS analysis

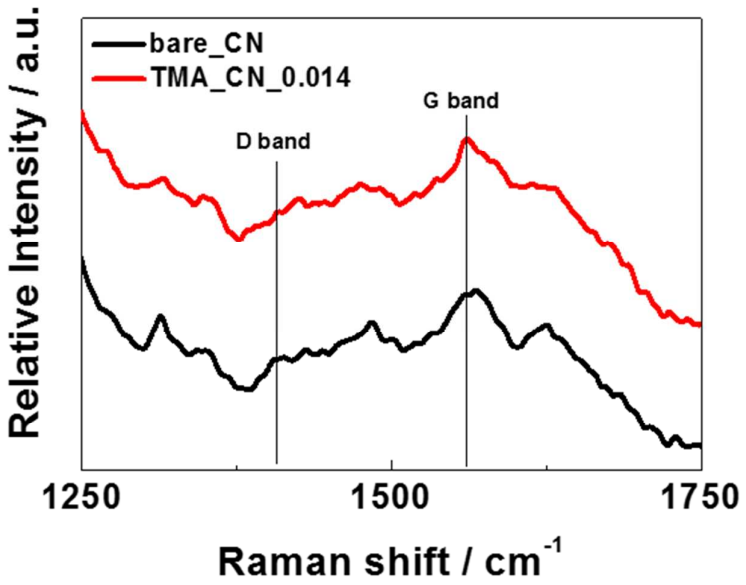



**Figure S3.** Raman spectra of bare_CN and TMA_CN_0.014

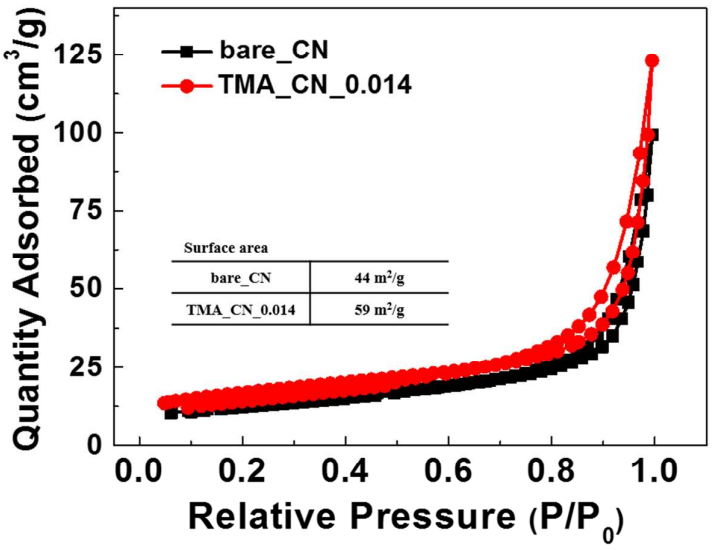



**Figure S4.** The BET surface area analysis of bare_CN and TMA_CN_0.014 by $N_2$-sorption-desorption isotherms

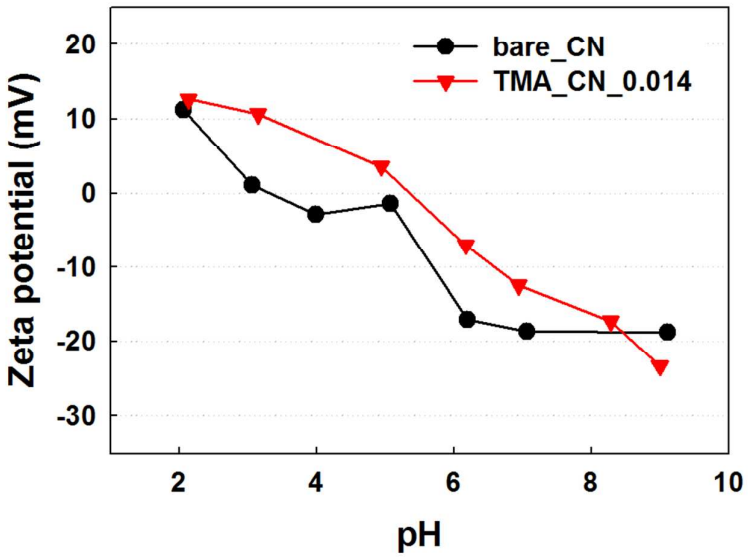



**Figure S5.** Zeta-Potential as a function of pH for bare_CN and TMA_CN_0.014

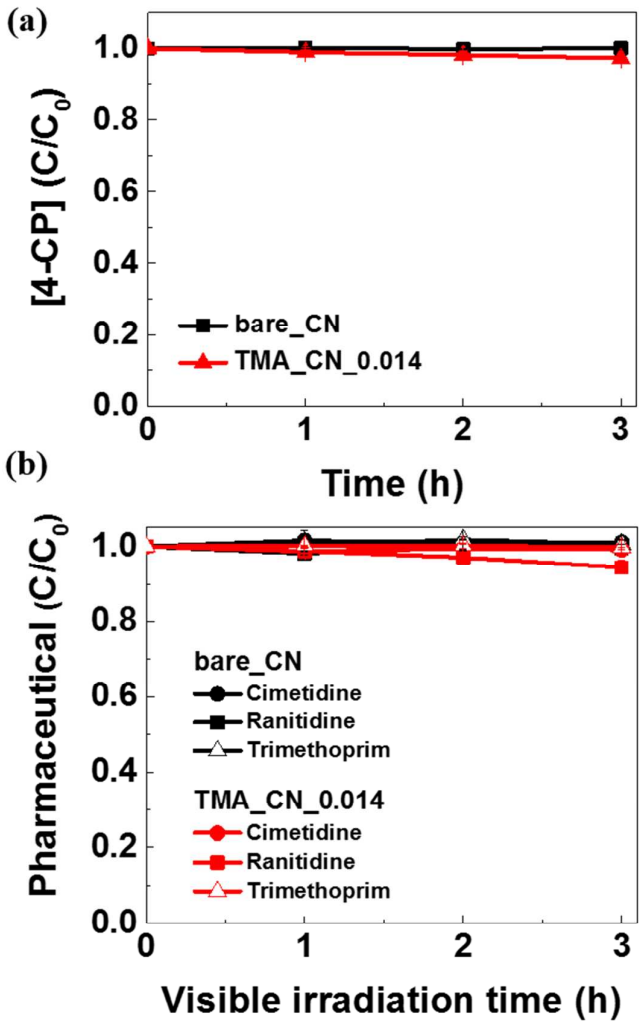



**Figure S6.** The dark control experiments using bare_CN and TMA_CN_0.014 for the removal of (a) 4-CP and (b) pharmaceutical compounds

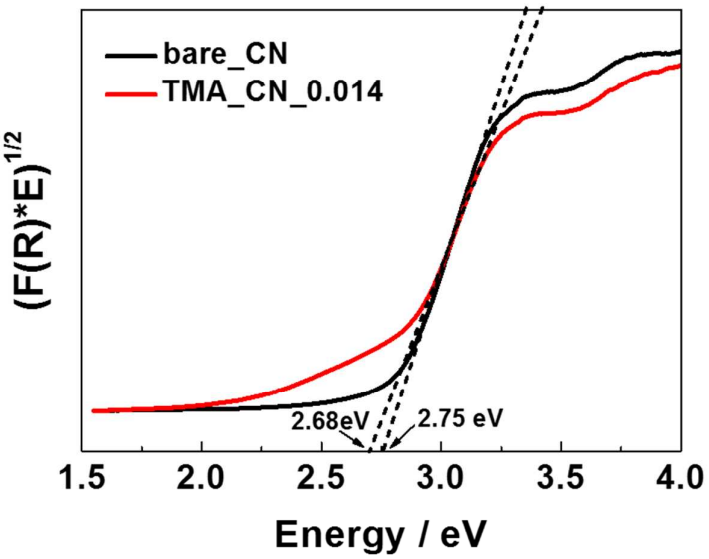



**Figure S7.** Tauc plots for bare_CN and TMA_CN_0.014

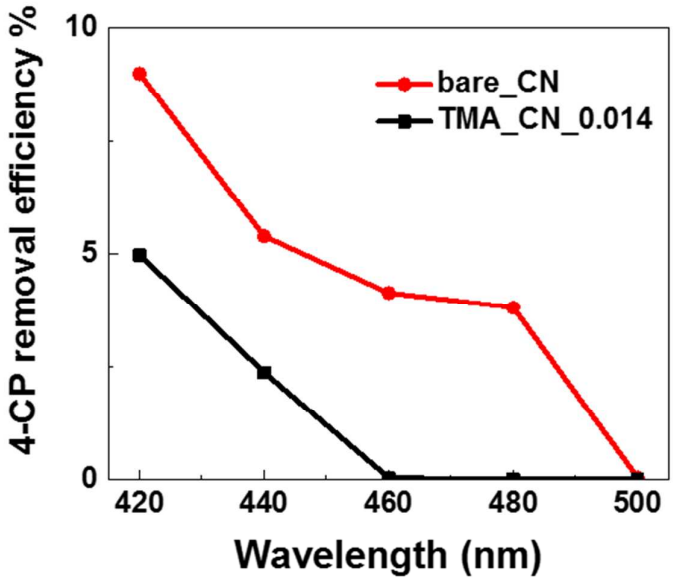



**Figure S8.** Photocatalytic removal efficiency of 4-CP with bare_CN and TMA_CN_0.014 as a function of monochromatic irradiation wavelength.

| | C (wt %) | N (wt %) | H (wt %) | O (wt %) | C/N |
|---|---|---|---|---|---|
| **bare_CN** | **33.70** | **60.55** | **1.90** | **1.23** | **0.556** |
| **TMA_CN_0.007** | **33.59** | **60.20** | **1.68** | **2.08** | **0.558** |
| **TMA_CN_0.014** | **33.50** | **59.65** | **1.71** | **2.84** | **0.562** |
| **TMA_CN_0.043** | **33.44** | **57.98** | **1.84** | **3.83** | **0.577** |
| **TMA_CN_0.086** | **34.10** | **57.84** | **1.78** | **3.84** | **0.589** |
| **TMA_CN_0.143** | **35.00** | **56.47** | **1.80** | **4.16** | **0.620** |

**Table S1.** Elemental analysis of bare_CN and TMA_CN_x.