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Supporting Information

A post-grafting strategy to modify g-C_3N_4 with aromatic heterocycles for enhanced photocatalytic activity

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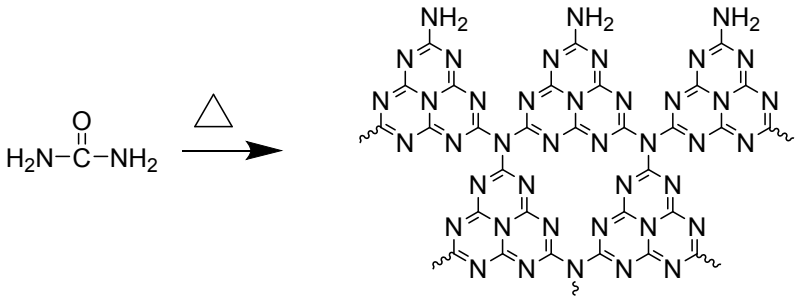

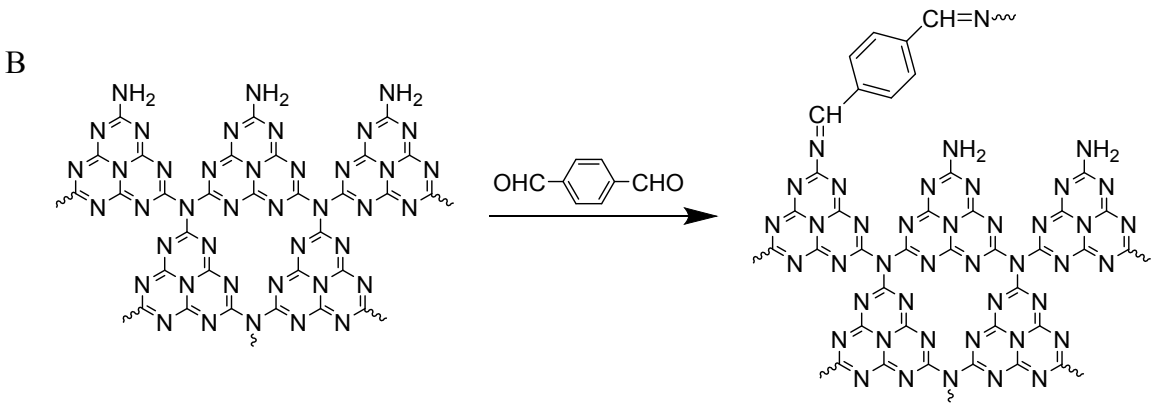

Fig. S1 Scheme of the synthesis of CNTE-x sample

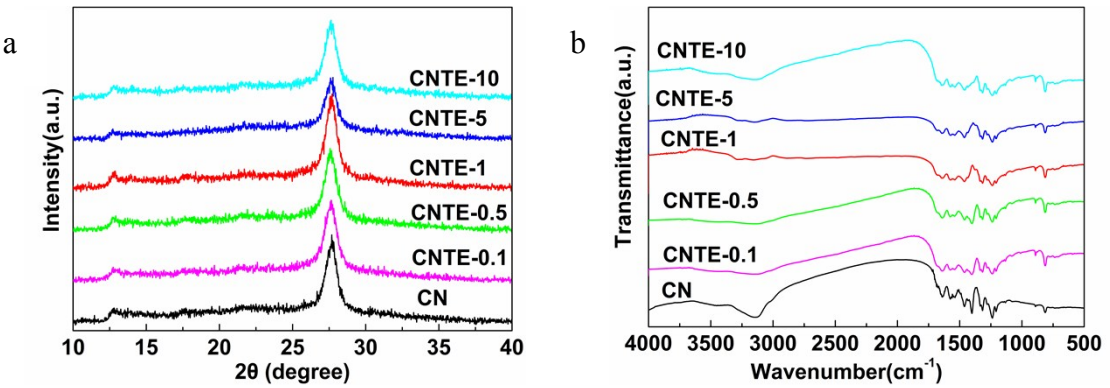

Fig. S2 (a) XRD patterns and (b) FT-IR spectra of CN and CNTE-x samples.

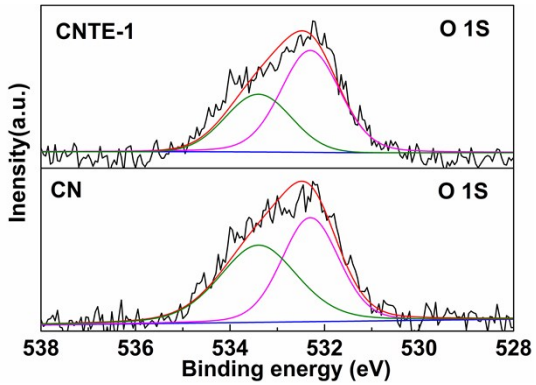

Fig. S3 O 1S XPS spectra of CN and CNTE-1.

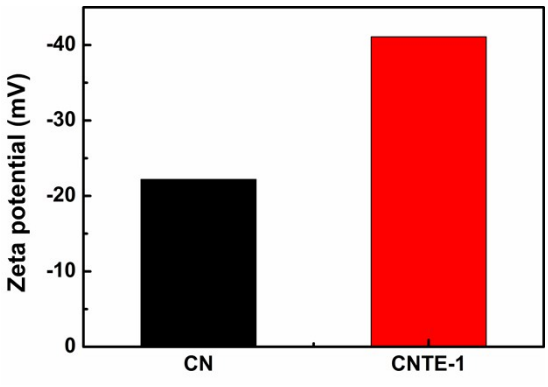

Fig. S4 Zeta potentials of CN and CNTE-1.

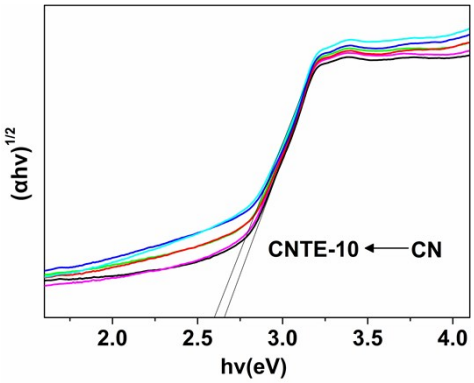

Fig. S5 The corresponding band gap of CN and CNTE-x samples estimated by related curves of $(\alpha h\upsilon)^{1/2}$ vs photon energy plotted.

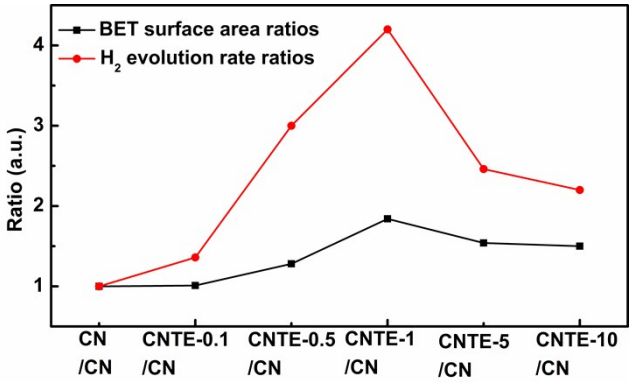

Fig. S6 The BET surface area ratios and H_2 evolution rate ratios of CNTN-x/CN.

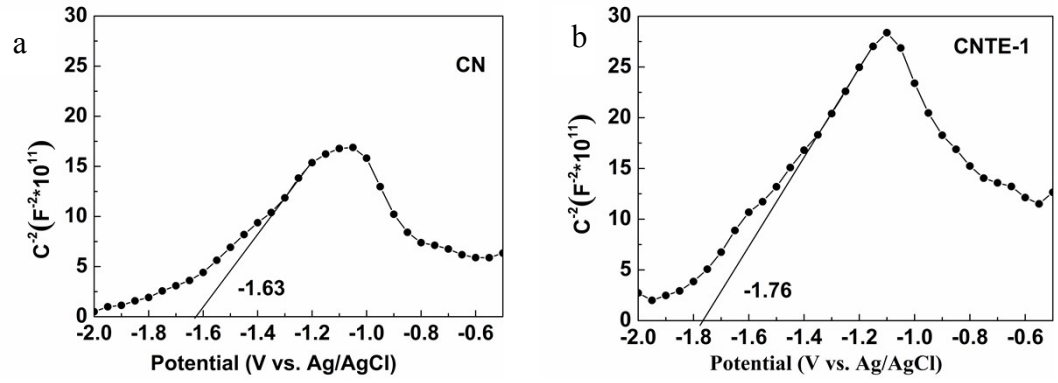

Fig. S7 Mott–Schottky plots collected for CN (a) and CNTE-1(b) at a frequency of 962 Hz in the dark.

Mott–Schottky tests were carried out in order to confirm the electronic potentials of CN and CNTE-1. The measured potentials can be converted to the reversible hydrogen electrode (RHE) scale via the Nernst equation: $E_{RHE} = E_{Ag/AgCl} + 0.05916\ pH + E^0_{Ag/AgCl}$.

Where E_{RHE} is the converted potential vs. RHE, $E_{Ag/AgCl}$ is the experimental potential measured against the Ag/AgCl reference electrode, and $E^0_{Ag/AgCl}$ is the standard potential of Ag/AgCl at 298 K (0.1976 V). The calculated conduction band edges of CN and CNTE-1 are -1.02 eV and -1.15 eV, respectively.

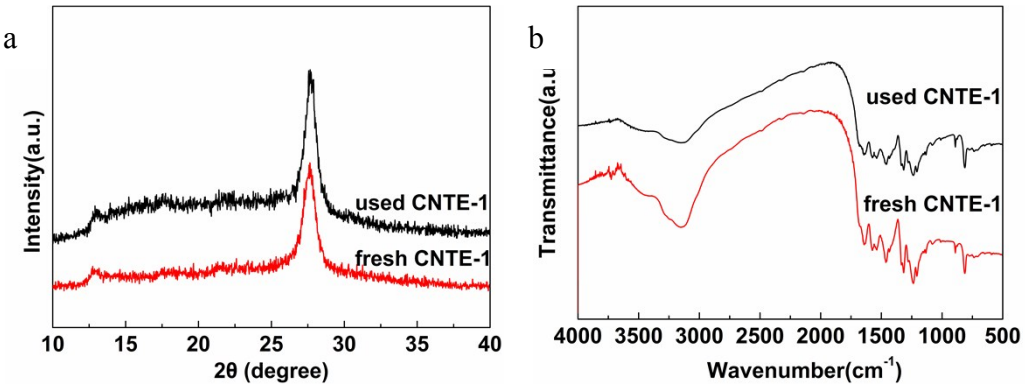

Fig. S8 (a) XRD patterns and (b) FT-IR spectra of fresh CNTE-1 and used CNTE-1 samples.

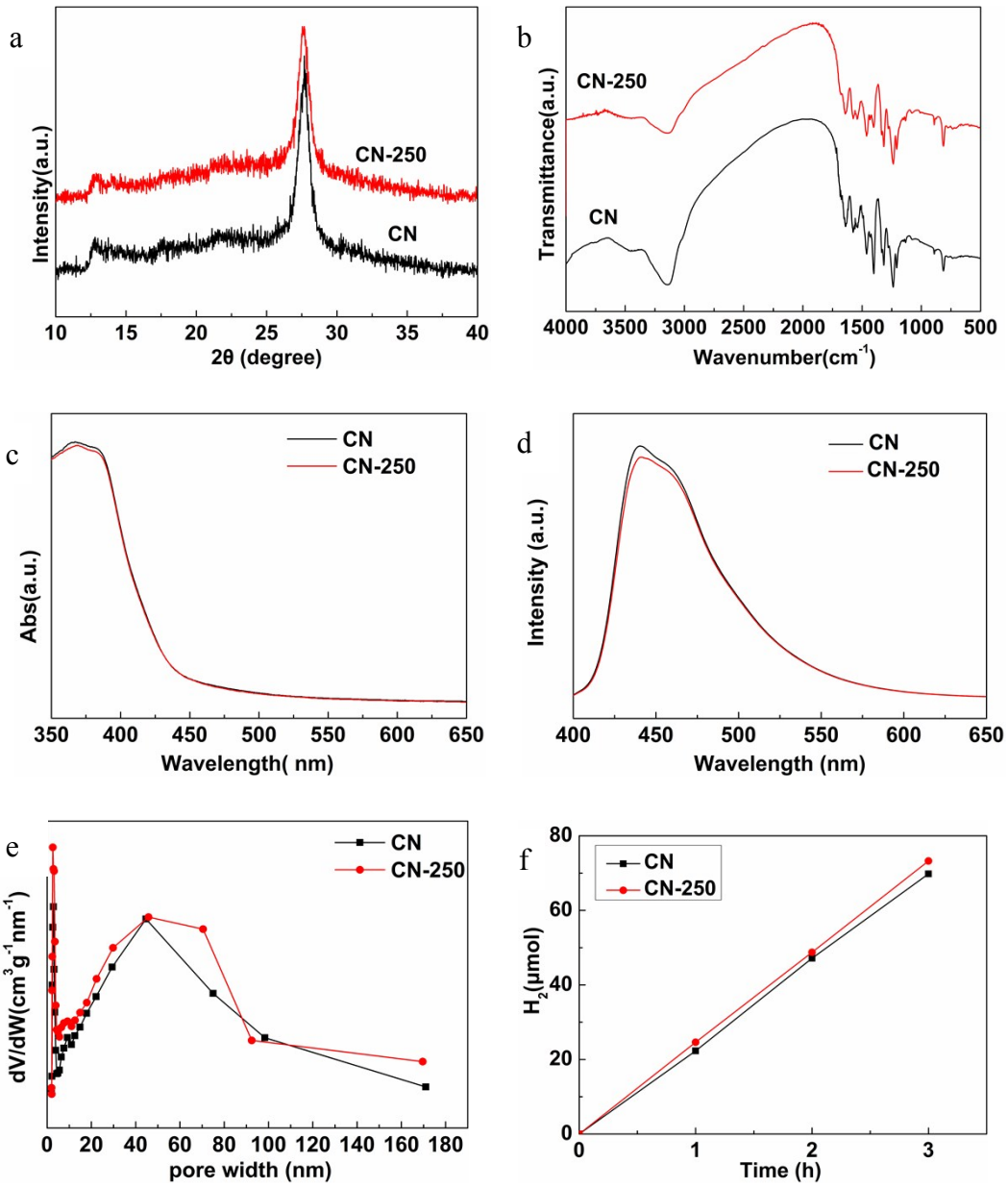

Fig. S9 (a) XRD patterns and (b) FT-IR spectra and (c) UV-vis absorption spectra and (d) PL spectra (excitation wavelength=380 nm) and (e) Pore size distributions and (f) Hydrogen evolution rates of CN and CN-250.