

Electronic Supporting Information

An efficient utilization of the photogenerated electrons and holes for photocatalytic selective organic syntheses in one reaction system through narrow band gap CdS photocatalyst

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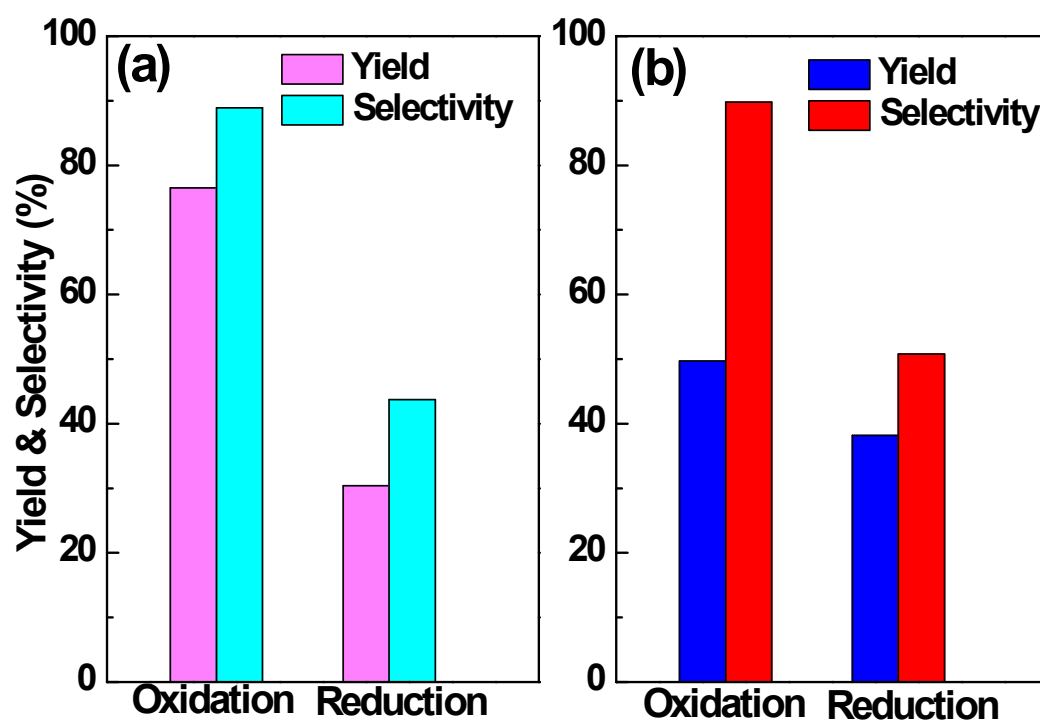


Fig. S1 The activity of CdS-G for photocatalytic (a): oxidation of benzyl alcohol into benzaldehyde and reduction of nitrobenzene into aniline; (b): oxidation of benzyl alcohol into benzaldehyde and reduction p-chloronitrobenzene into p-chloroaniline under visible light irradiation for 4 h.

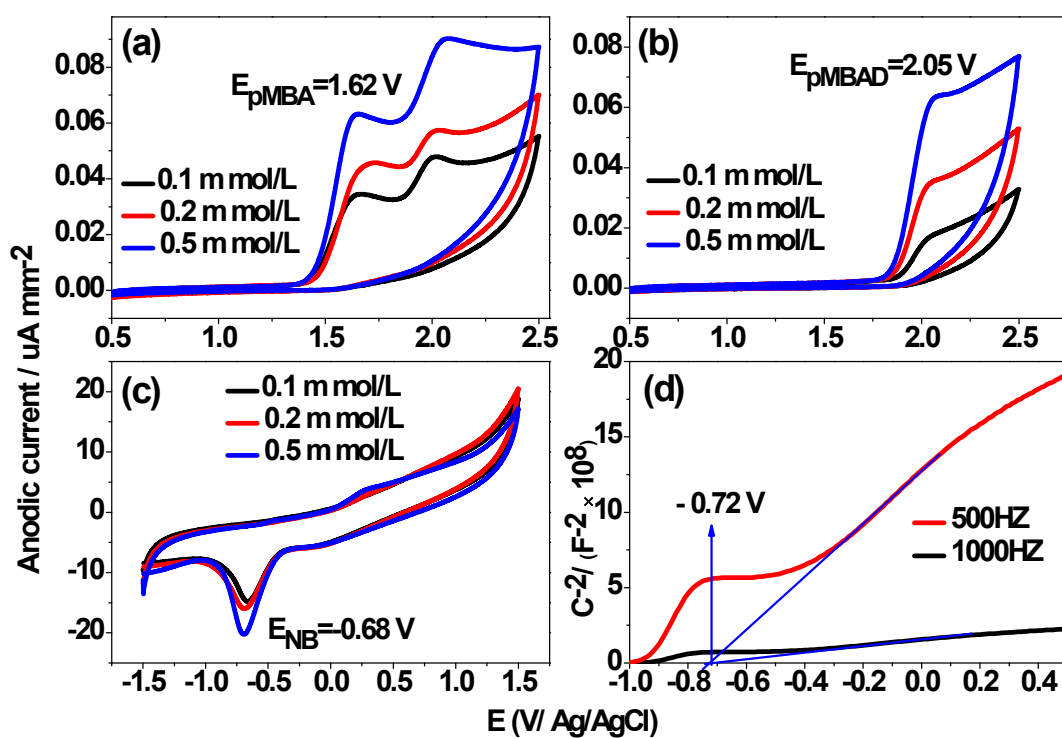


Fig. S2 The cyclic voltammogram of (a) pMBA, (b) pMBAD and (c) NB with different concentrations (0.1, 0.2, and 0.5 mmol/L), (d) Mott-Schottky plots for the CdS-G electrodes.

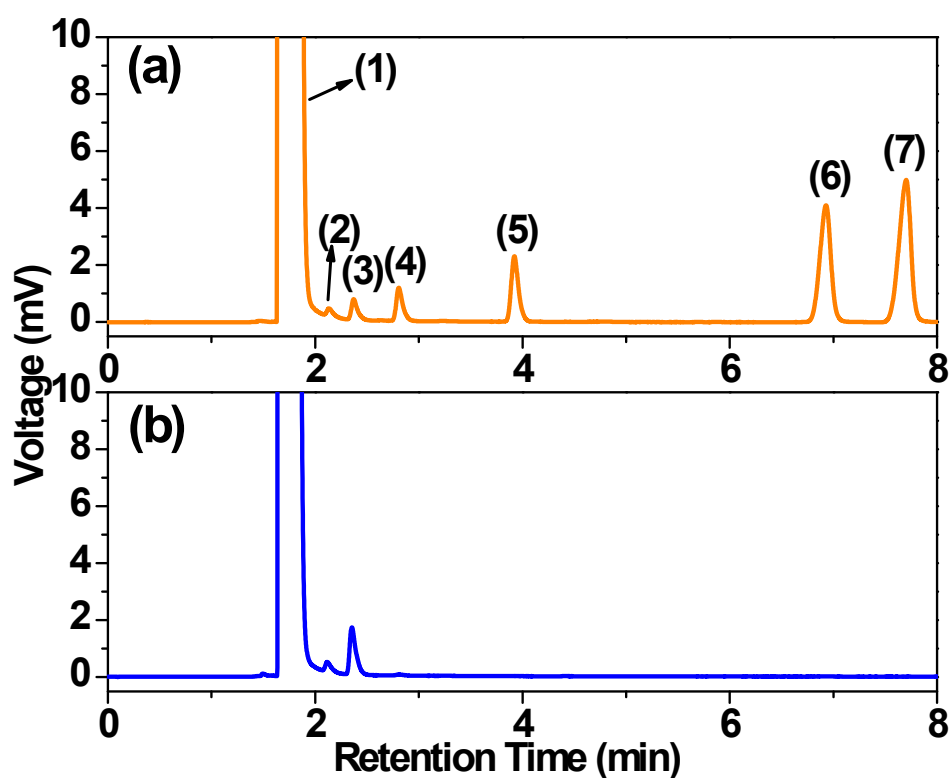


Fig. S3 The GC spectra of (a) the reaction system was irradiated for 0.5 h and (b) BTf solvent contained NSB to verify the existence of NSB in the reaction process.

- (1): Benzotrifluoride solvent (BTf);
- (2): Impurity in BTf solvent;
- (3): Nitrosobenzene (NSB);
- (4): Aniline (AL);
- (5): Nitrobenzene (NB);
- (6): p-methoxybenzyl alcohol (pMBA);
- (7) p-methoxybenzaldehyde (pMBAD).