Selective dehydrogenation of aromatic alcohols photocatalyzed by Pd-deposited CdS-TiO_2 in aqueous solution using visible light

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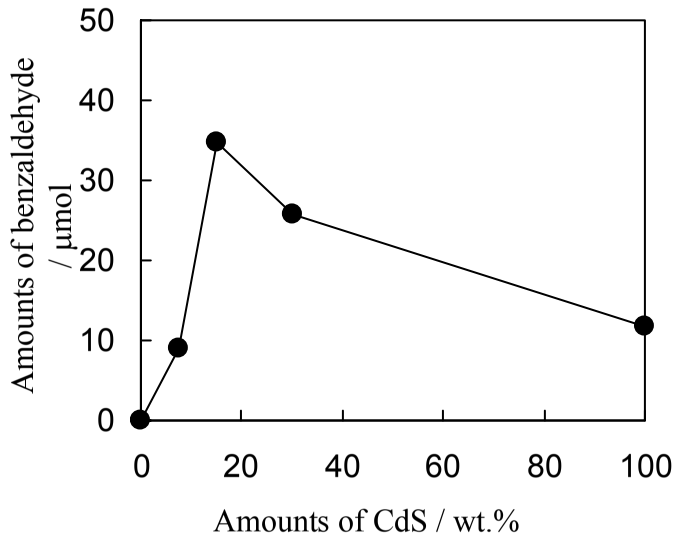

Figure S1 Effect of CdS amounts (*x* wt.%) on the formation of benzaldehyde for the dehydrogenation of benzyl alcohol. Reaction conditions: 0.4Pd/*x*CdS-TiO_2 catalyst (50 mg); benzyl alcohol (50 μmol); argon (1 atm); blue LED (λ_{max} = 460 nm, ca. 10 mW/cm^2); reaction time (2h).

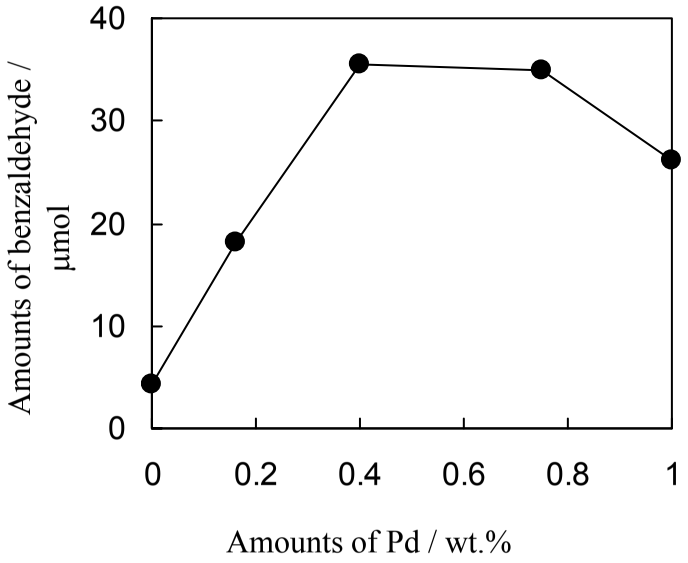

Figure S2 Effect of Pd amounts (*y* wt.%) on the formation of benzaldehyde for the dehydrogenation of benzyl alcohol. Reaction conditions: *y*Pd/15CdS-TiO_2 catalyst (50 mg); benzyl alcohol (50 μmol); argon (1 atm); blue LED (λ_{max} = 460 nm, ca. 10 mW/cm^2); reaction time (2h).

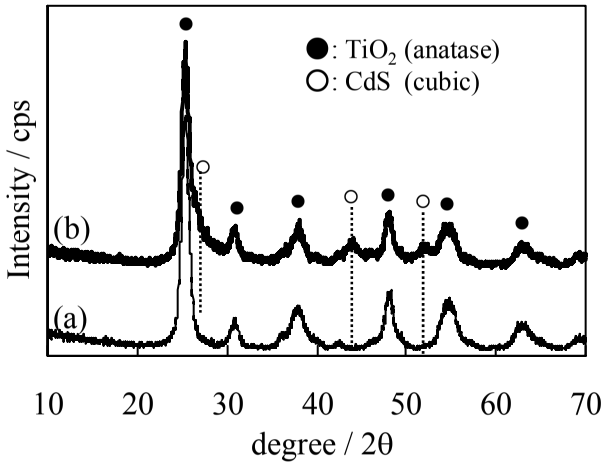

Figure S3 XRD patterns of (a) TiO_2 and (b) 0.4Pd/15CdS-TiO_2.

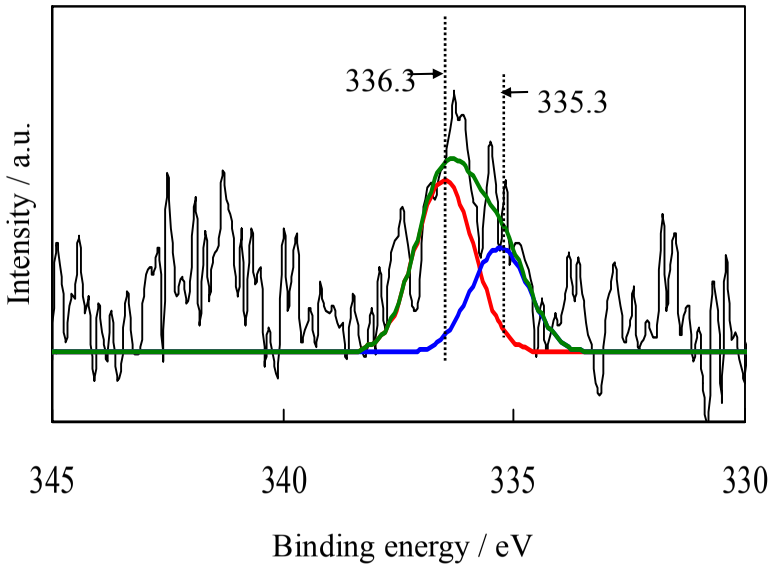

Figure S4 XPS spectrum of the Pd 3d5/2 peaks of 0.4Pd/15CdS-TiO_2. The spectrum can be deconvoluted into two gauss functions peaked at 336.3 and 335.3 eV.