

Supporting Information

Cobalt phosphide as a highly active non-precious-metal cocatalyst for photocatalytic hydrogen production under visible light irradiation

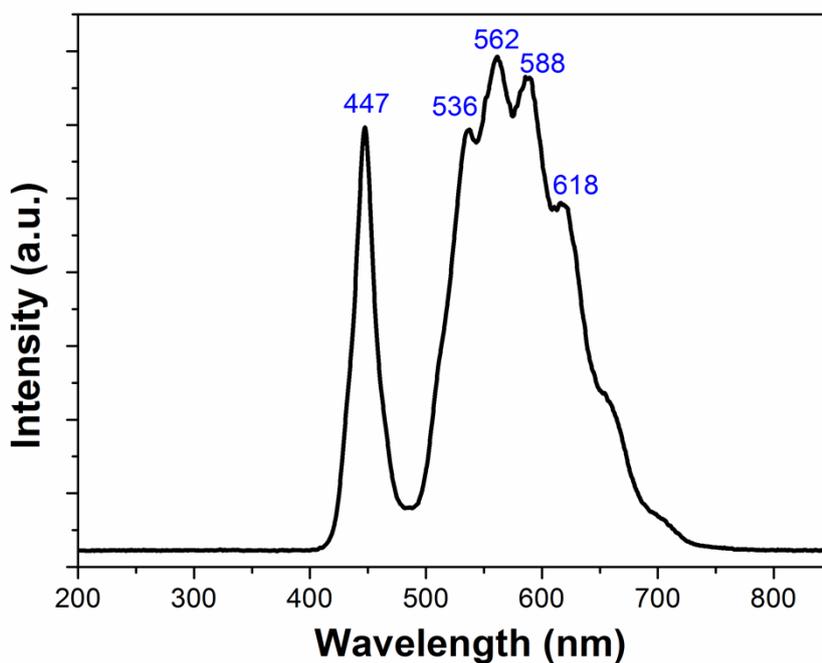


Figure S1. The emission spectrum of the white LED light.

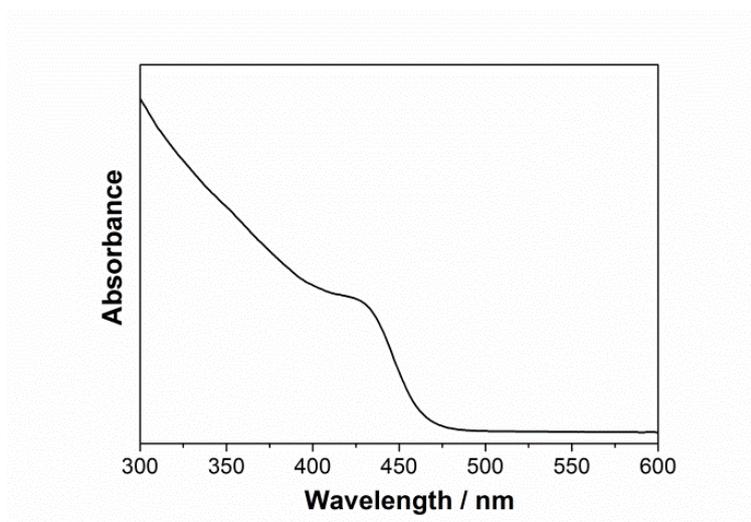


Figure S2. UV-vis spectrum of the obtained CdS NRs.

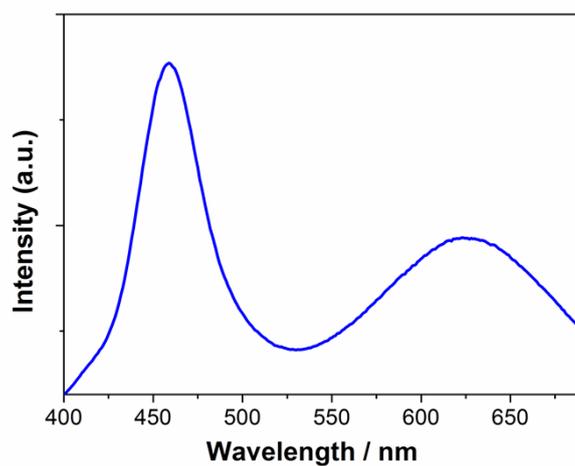


Figure S3. Fluorescent spectrum of the CdS NRs excited at 365 nm.

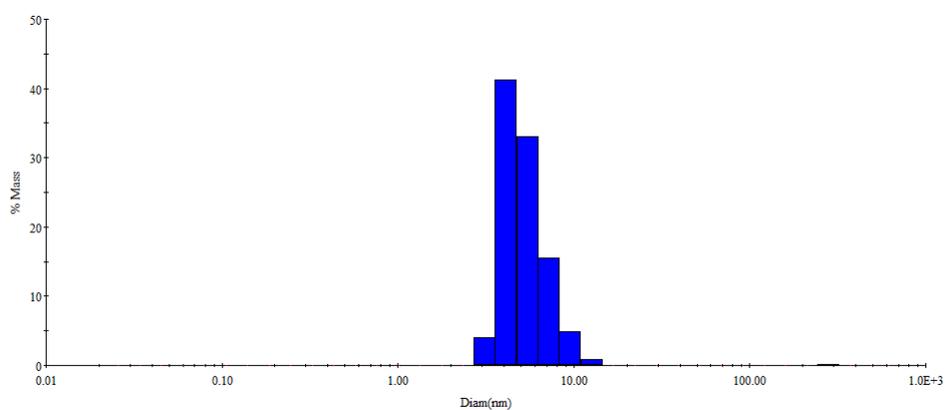


Figure S4. Dynamic light scattering (DLS) measurement of the Co₂P NPs.

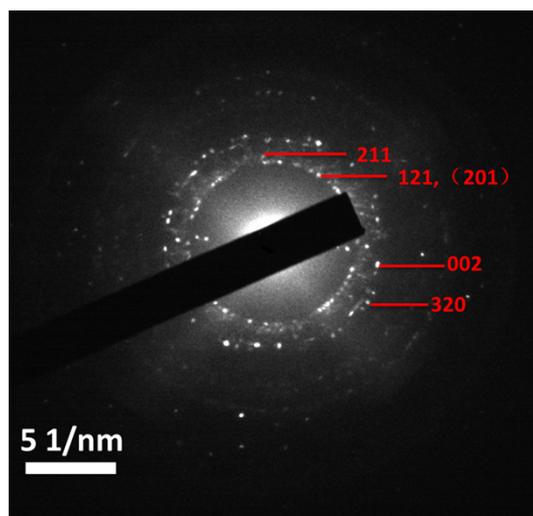


Figure S5. SAED pattern recorded from the Co₂P NPs.

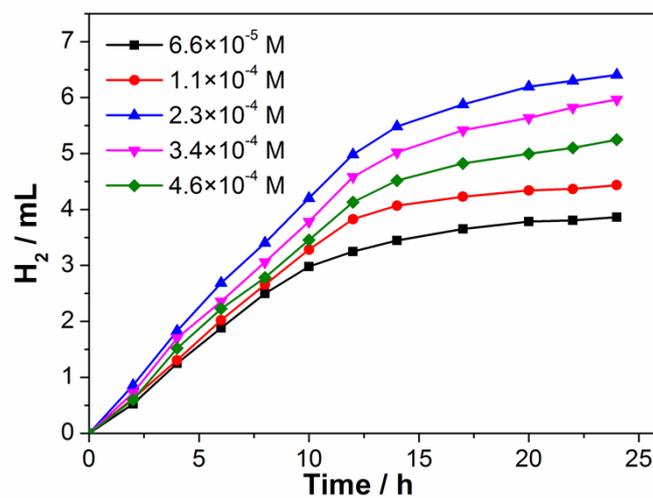


Figure S6. H₂ evolution as a function of CdS NRs concentrations for the system containing 1.0×10^{-4} M Co₂P NPs and 0.5 M DL-mandelic acid at pH 6.0 in 15 mL aqueous solution under visible light irradiation.

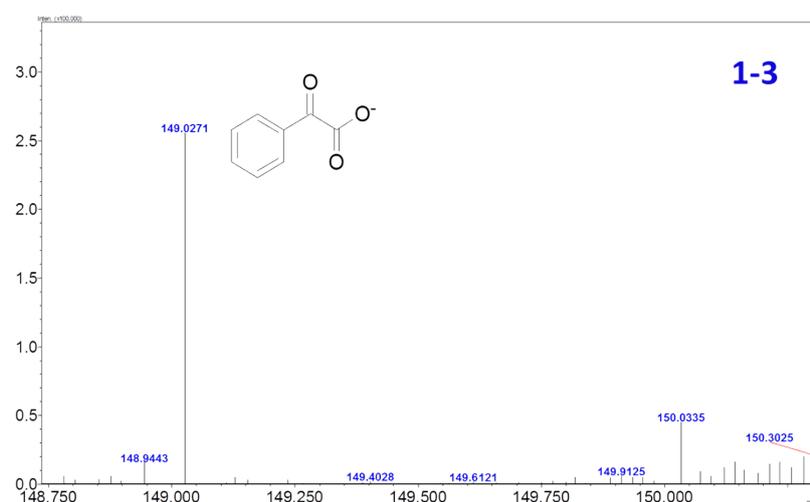
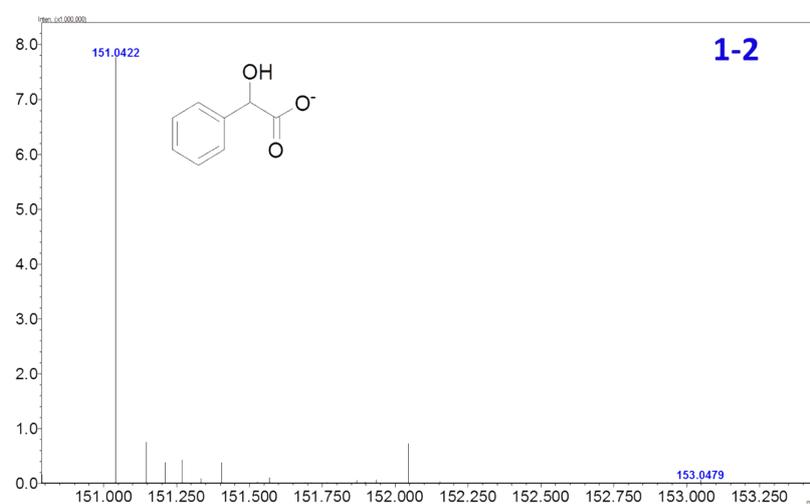
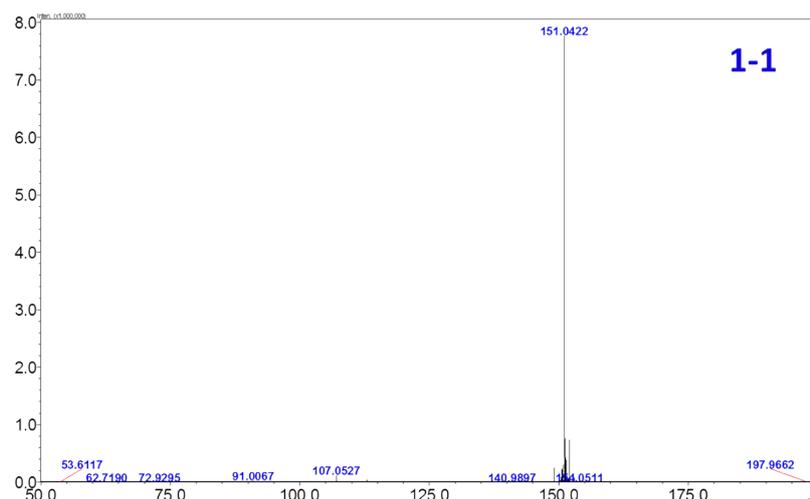


Figure S7. ESI-MS spectra of the reaction solution after 10 h of photocatalytic reaction for the system containing 2.3×10^{-4} M CdS NRs, 1.0×10^{-4} M Co₂P NPs and 0.5 M DL-mandelic acid. The signals with m/z at 149 and 151 are assigned to benzoylformic acid and DL-mandelic acid, respectively. Figures (1-2, 1-3) are the amplification of Figure (1-1), respectively.

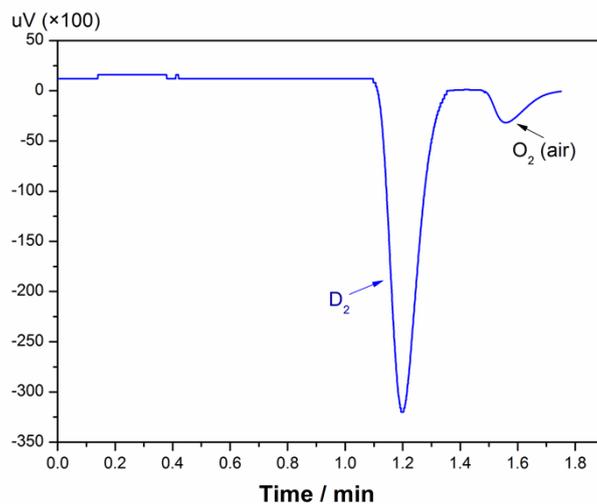


Figure S8. GC signals obtained using He (instead of Ar) as the carrier gas. The system contained 2.3×10^{-4} M CdS NRs, 1.0×10^{-4} M Co_2P NPs and 0.5 M DL-mandelic acid in 6 mL D_2O solution.

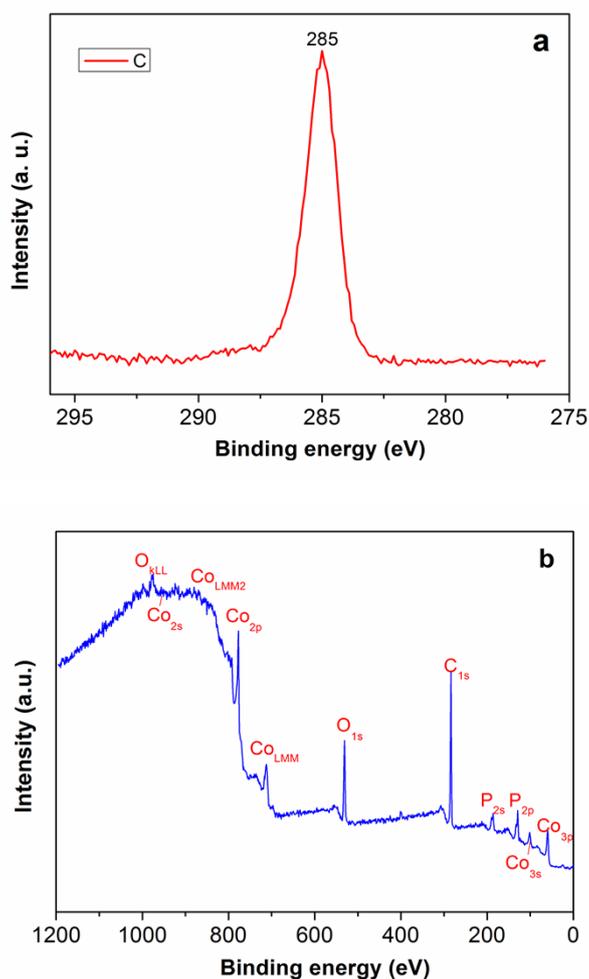


Figure S9. XPS spectrum of the (a) C (1s) regions and (b) survey spectrum of the obtained Co_2P nanoparticles.