

Electronic Supplementary Information

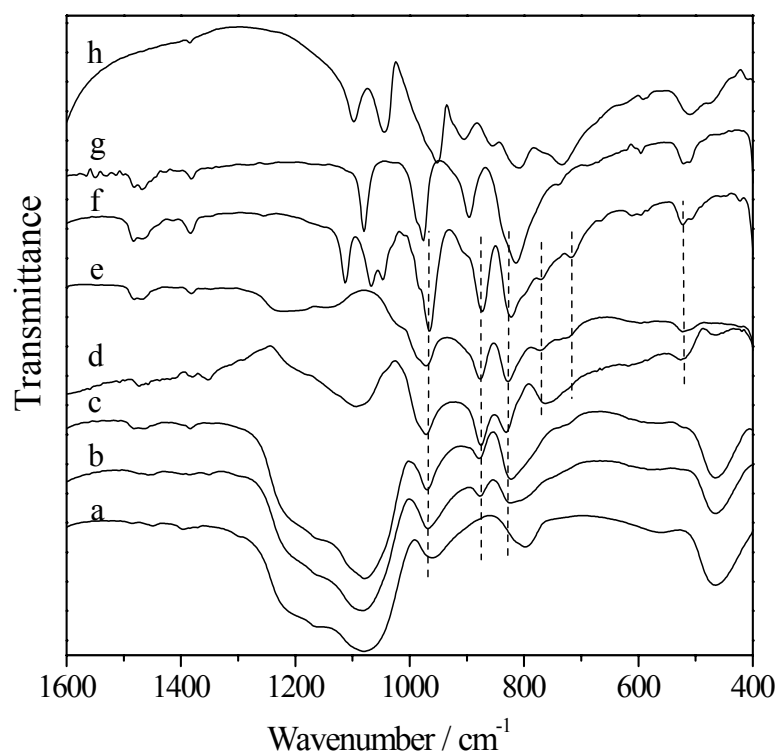


Fig. S1 IR spectra of (a) SBA-15, (b) 5%PW₁₁/MHS, (c) TBAPW₁₁Si₂/MHS, (d) Subtracting (a) from (b), (e) subtracting (a) from (c), (f)TBAPW₁₁Si₂, (g) PW₁₂ and (h) PW₁₁

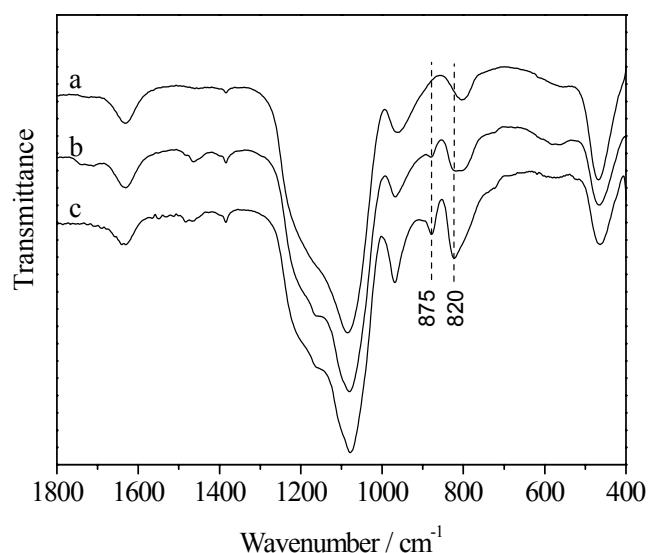


Fig. S2 IR spectra of (a) product in control experiment 1, in which PW₁₁ instead of TBAPW₁₁Si₂ was introduced as POM precursor, (b) product in control experiment 2, in which the sample was washed directly without calcination at 200°C after introduction of TBAPW₁₁Si₂, and (c) TBAPW₁₁Si₂/MHS.

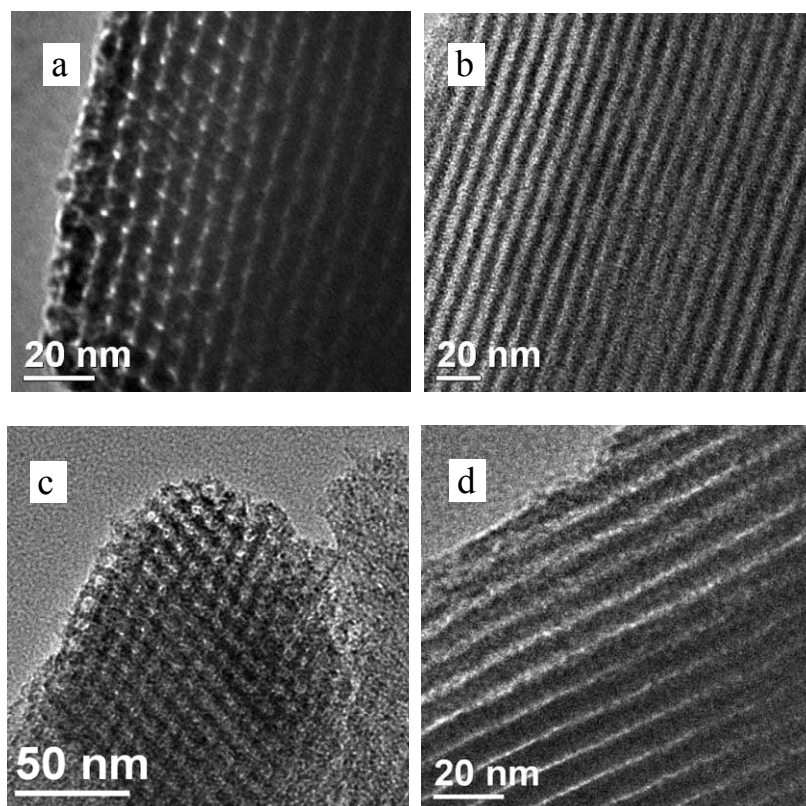


Fig. S3 TEM images of 5%PW₁₁/MHS viewed along the pore axis (a) and perpendicularly to the pore axis (b), and TBAPW₁₁Si₂/MHS viewed along the pore axis (c) and perpendicularly to the pore axis (d).

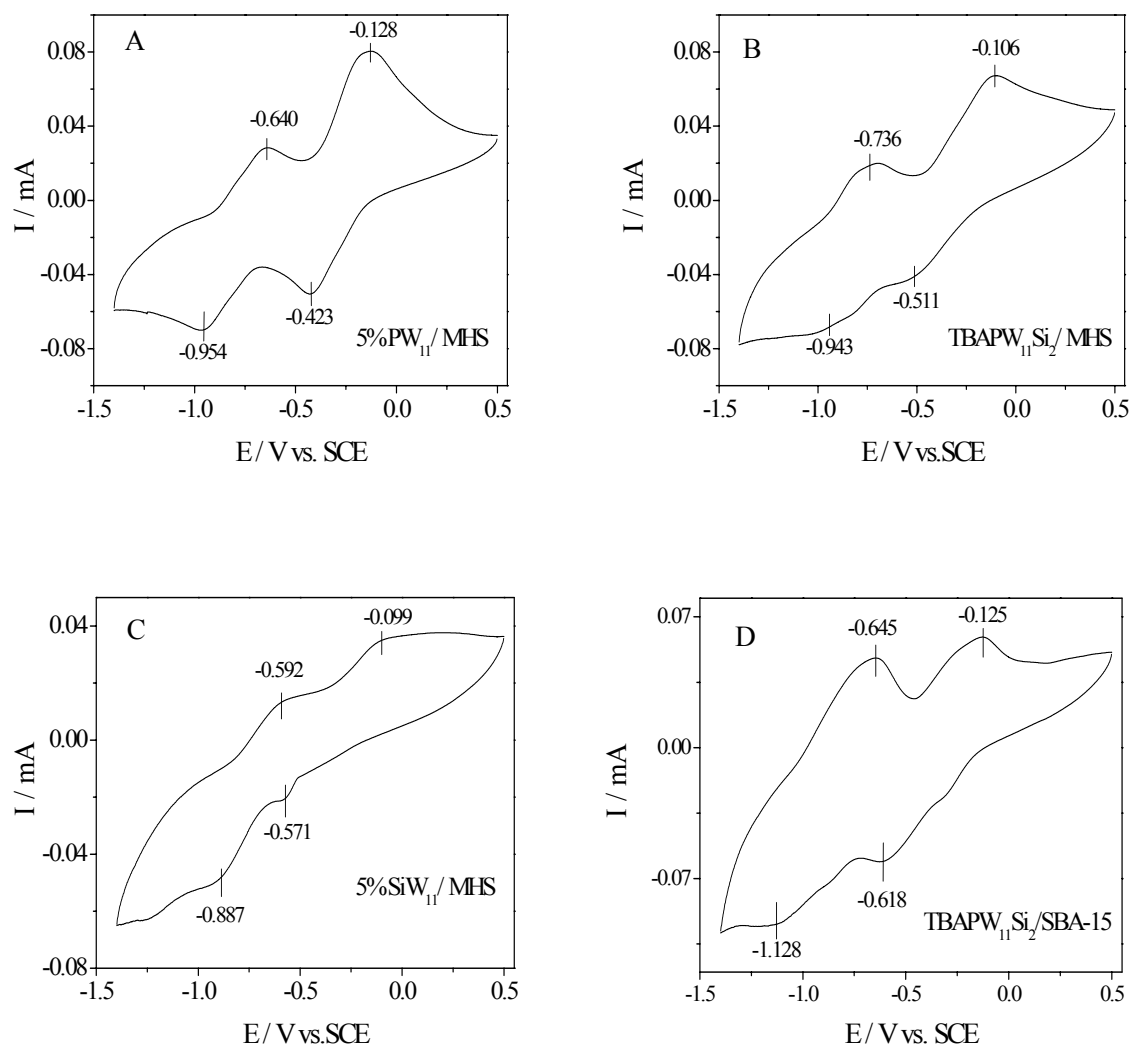


Fig. S4 Cyclic voltammograms of (A) 5%PW₁₁/MHS, (B) TBAPW₁₁Si₂/MHS, (C) 5% SiW₁₁/MHS and (D) TBAPW₁₁Si₂/SBA-15 in CH_3CN solution with $0.1 \text{ M } (\text{Bu}_4\text{N})\text{ClO}_4$ as supporting electrolyte. Scan rate: 10 mV/s .

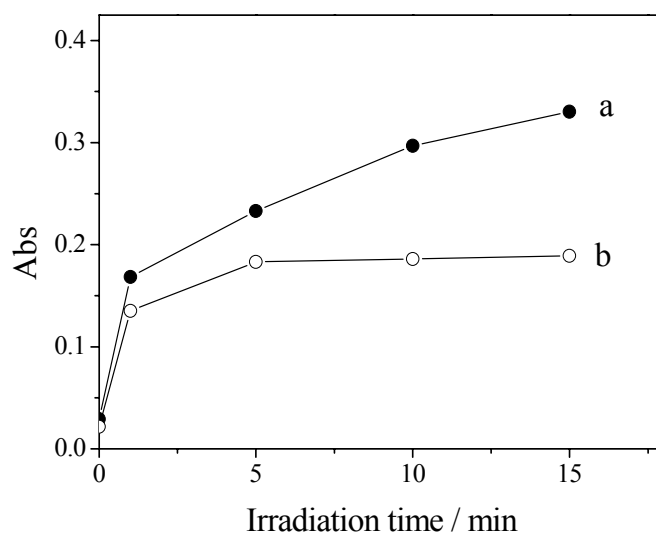


Fig. S5 UV-vis absorbance at 730 nm of 5%PW₁₁/MHS versus irradiation time. (a) before removal of template, (b) after removal of template.

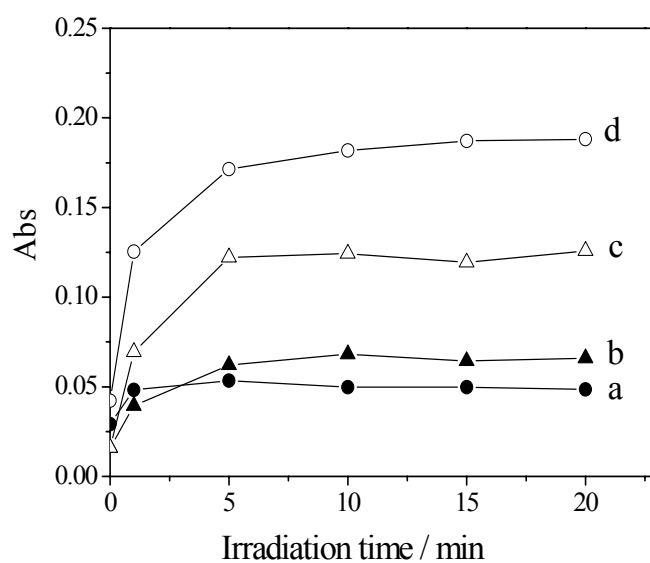


Fig. S6 UV-vis absorbance at 730 nm versus irradiation time. (a) TBAPW₁₁Si₂//MHS, (b) H₃PW₁₂O₄₀/SBA-15, (c) H₃PW₁₂O₄₀/SBA-15 adsorbing ethanol for 18 h, (d) TBAPW₁₁Si₂//MHS adsorbing ethanol for 18 h.