Electronic Supplementary Material (ESI) for Physical Chemistry Chemical Physics

Supporting Information

Light induced water oxidation on cobalt-phosphate (Co-Pi) catalysts modified semi-transparent, porous SiO_2-$BiVO_4$ electrodes

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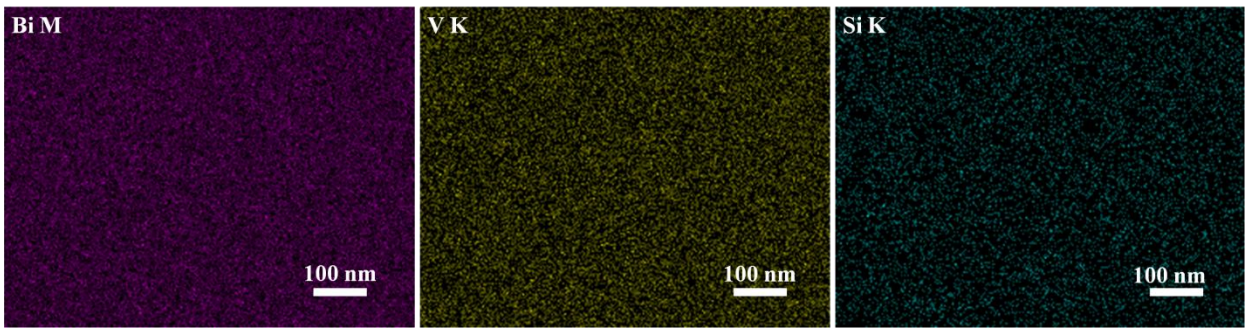

Fig. S1 Energy dispersive X-ray analysis (EDX) maps of SiO_2-$BiVO_4$ electrode investigated in the Bi(M), V(K) and Si (K) transition at 10 keV.

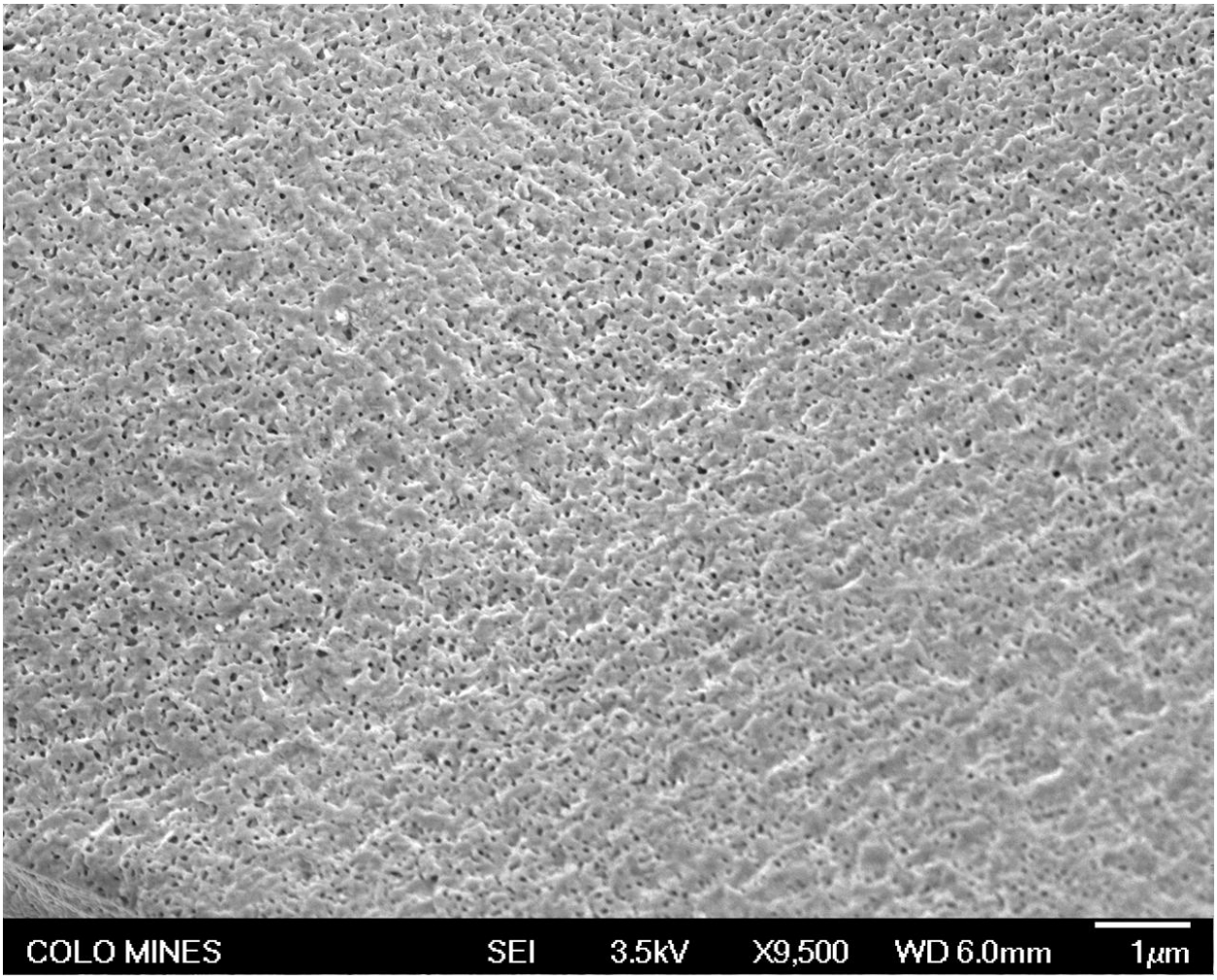

Fig. S2 SEM image of porous $BiVO_4$ electrode.

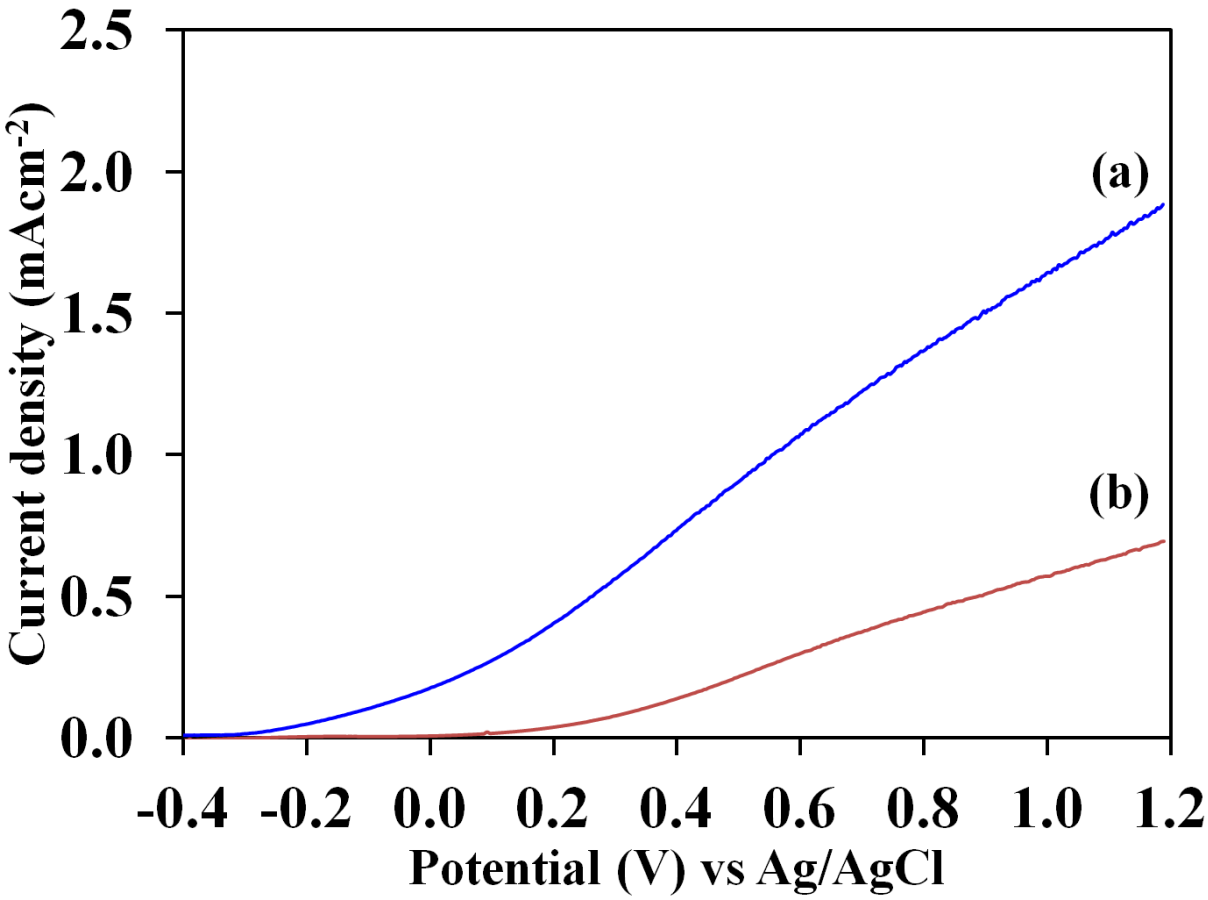

Fig. S3 Linear sweep voltammograms of PED Co-Pi/SiO_2-$BiVO_4$ (a) and SiO_2-$BiVO_4$ (b) electrodes measured (scan rate, 25 mV/s) with continuous light (100 mW/cm^2) in 0.5M Na_2SO_4 (pH7) solution.

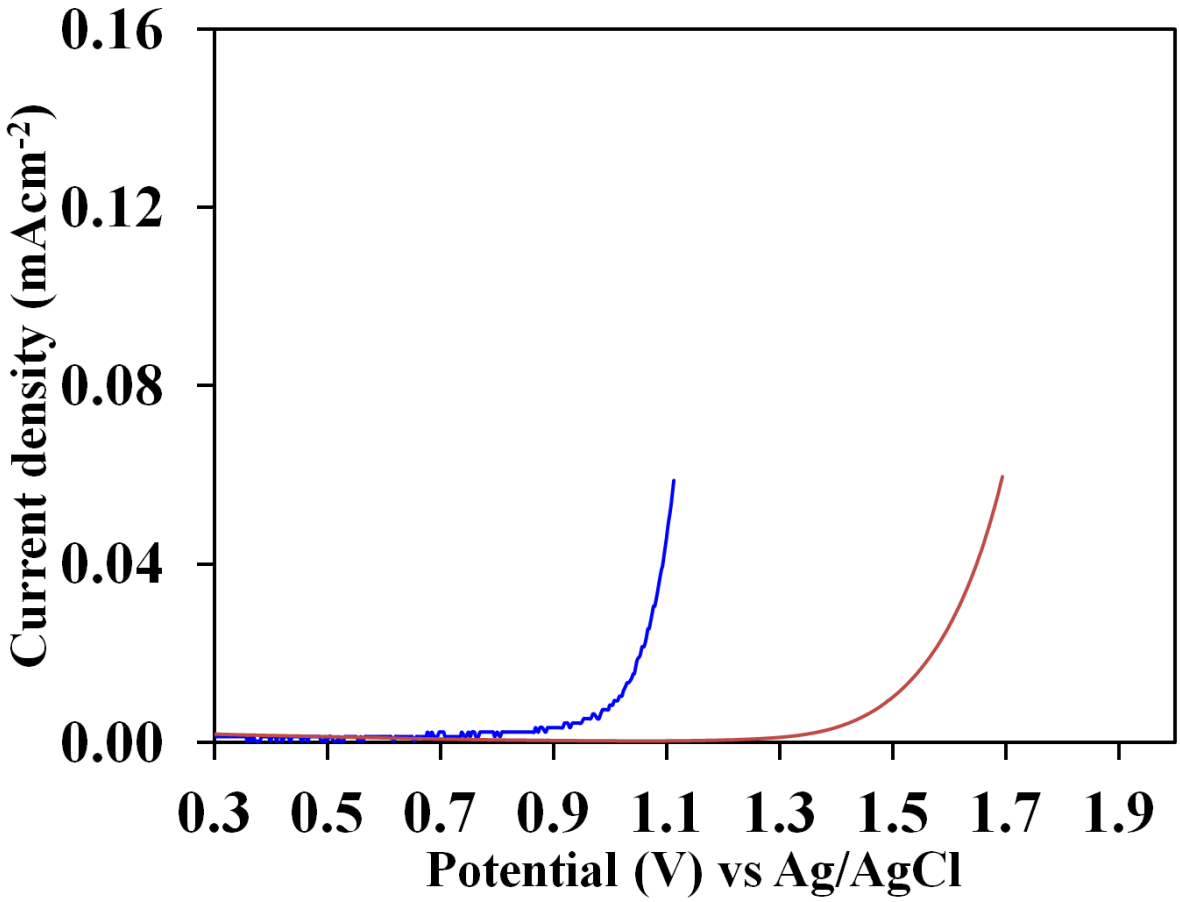

Fig. S4 Linear sweep voltammograms of SiO_2-$BiVO_4$ (red) and PED Co-Pi/SiO_2-$BiVO_4$ (blue) electrodes measured (scan rate, 25 mV/s) under dark using 0.5M Na_2SO_4 aqueous solution in phosphate buffer (pH7) electrolyte.

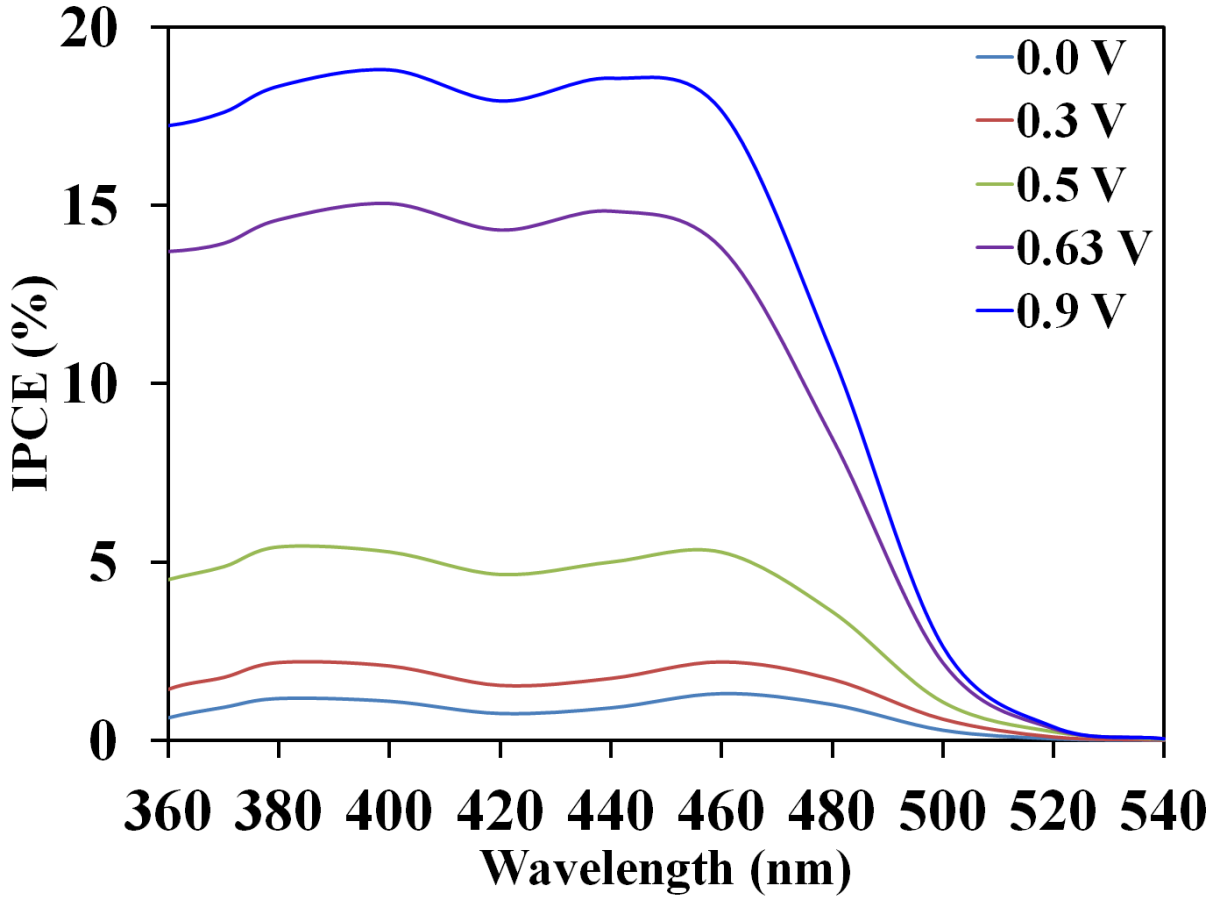

Fig. S5 IPCE plot of SiO_2-$BiVO_4$ electrode measured at 0.0, 0.3, 0.5, 0.63, 0.9 V *vs*. Ag/AgCl in 0.5 M Na_2SO_4 (pH 7 phosphate buffered).

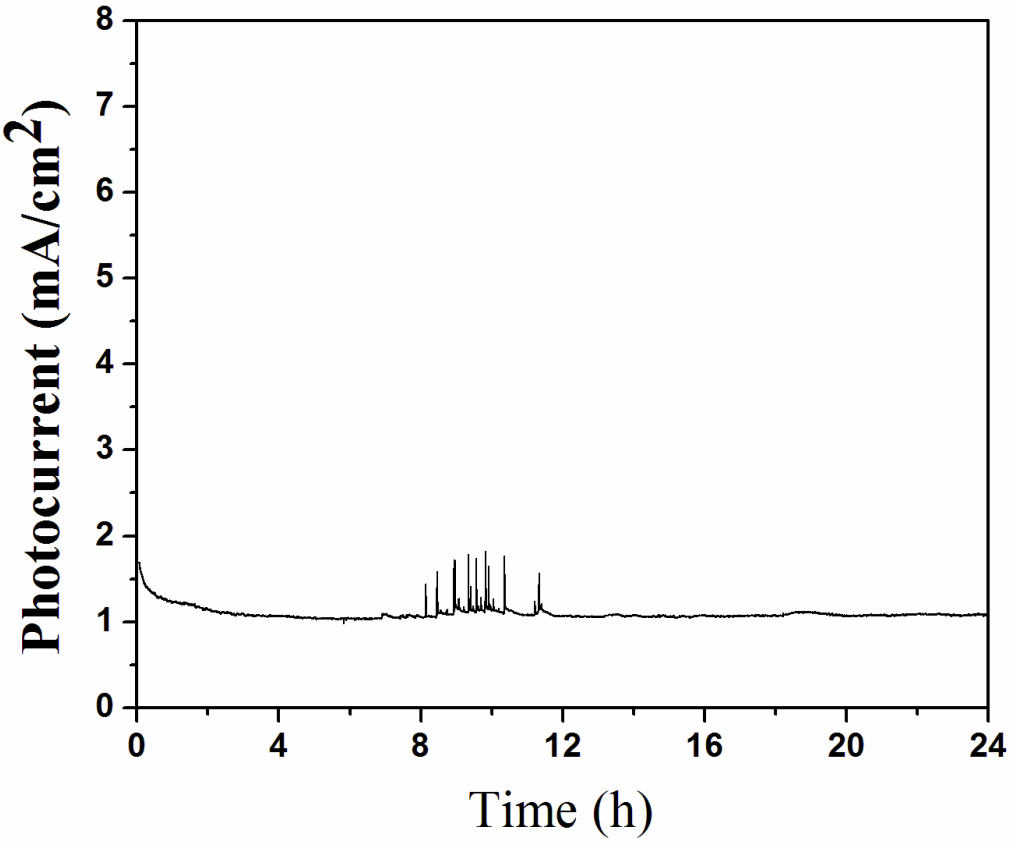

Fig. S6 The photocurrent vs. time (chronoamperometry) plot of PED Co-Pi/SiO_2-$BiVO_4$ photoanode measured under short-circuit conditions at an applied bias of 0.7 V vs. Pt counter electrode in 0.5 M Na_2SO_4. The measurements were performed under continuous 1 sun, AM 1.5 simulated solar irradiation for 24 h.