

Supporting Information

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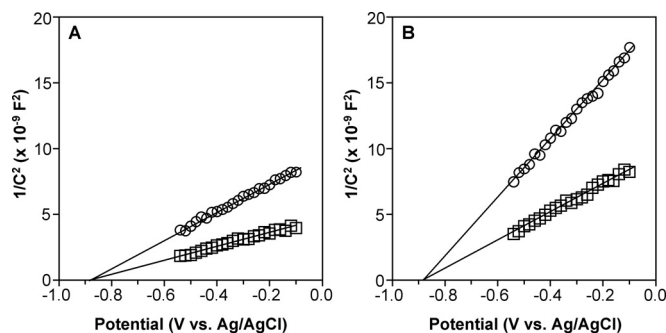


Fig. S1. Mott-Schottky plots. (A) ZnO and (B) ZnO/Co-catalyst electrodes obtained at 500 Hz (\square) and 5000 Hz (\circ) in 0.1 M potassium phosphate (pH 11.5) bubbled with Ar. The X-intercepts (V_0) were consistent regardless of the changes in frequencies, and were used to obtain the flat band potential, V_{fb} ($V_0 = V_{fb} + kT/e$) (1). The flatband potentials obtained for ZnO and ZnO/Co-catalyst electrodes were comparable as $V_{fb} = -0.90$ V vs. Ag/AgCl. This value is in a good agreement with the literature values. The capacitance values were not corrected for surface areas of ZnO rods, but this does not affect the determination of the flatband potentials.

1. Cardon F, Gomes WP (1978) On the determination of the flat-band potential of a semiconductor in contact with a metal or an electrolyte from the Mott-Shottky plot. *J Phys D: Appl Phys* 11:L63–L67.