

Supplementary Materials

Wafer-scale Synthesis of Ultrathin CoO Nanosheets with Enhanced Electrochemical Catalytic Properties

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Supplementary figures

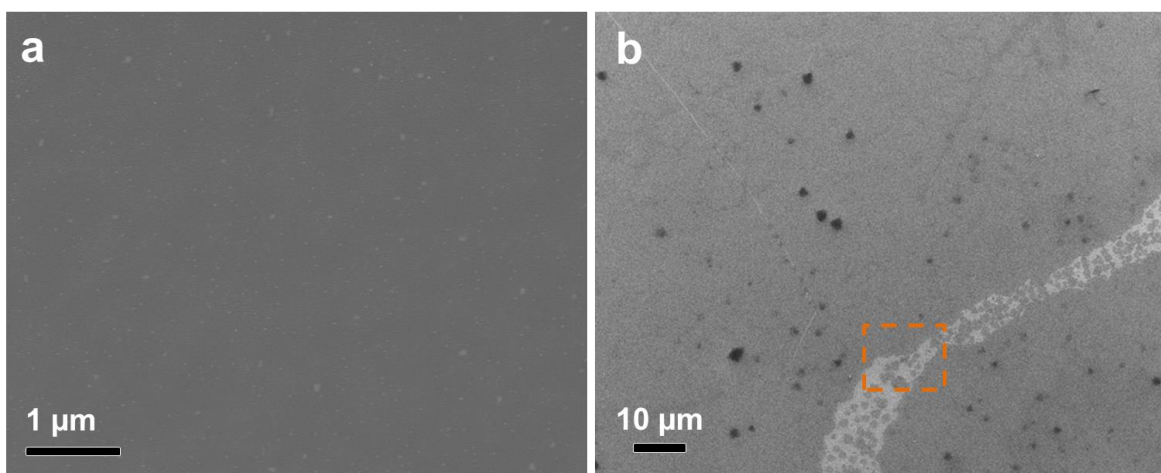


Figure S1. High (a) and low (b) magnification SEM images of a CoO nanosheet on Si wafer.

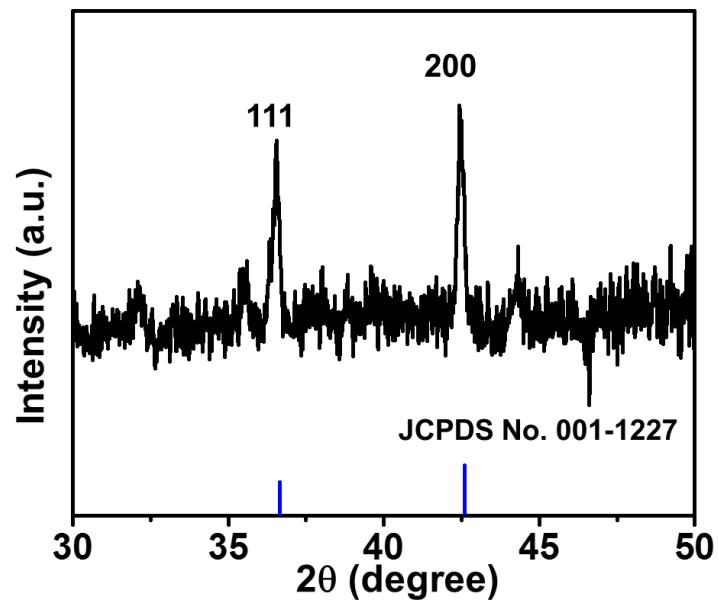


Figure S2. Grazing-angle X-ray diffraction (GAXRD) of CoO nanosheet, showing the (111) and (200) peaks of CoO (JCPDS No. 001-1227).

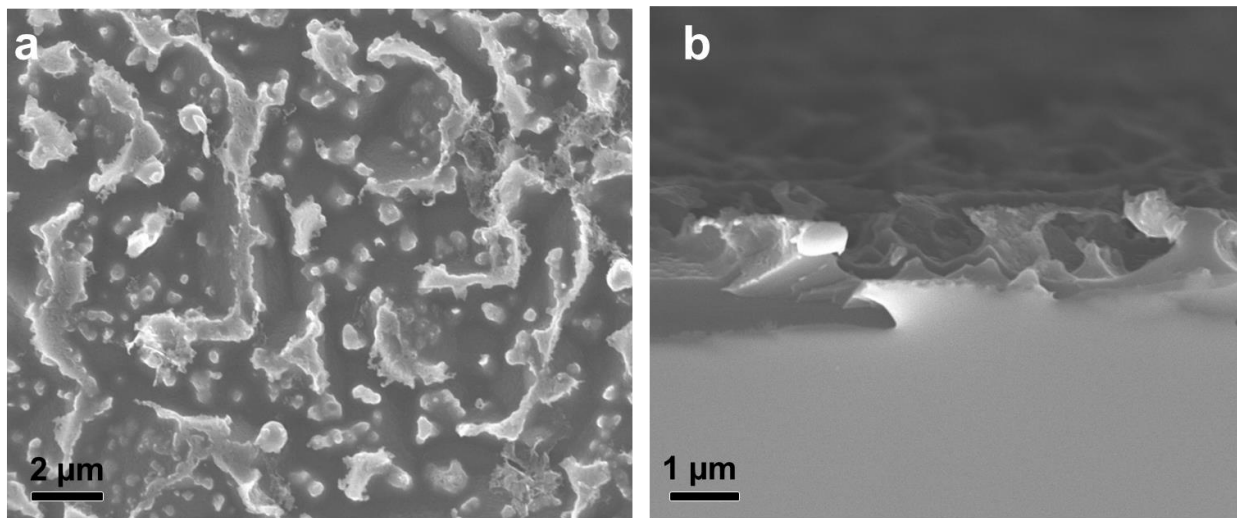


Figure S3 (a) Top view and (b) cross-sectional view SEM image of bulk CoO film on Si wafer.

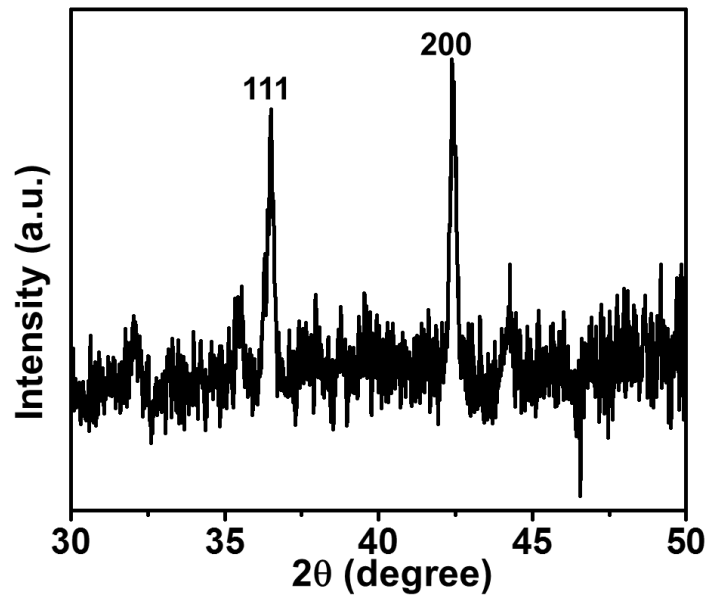


Figure S4. XRD of bulk CoO on Si wafer.

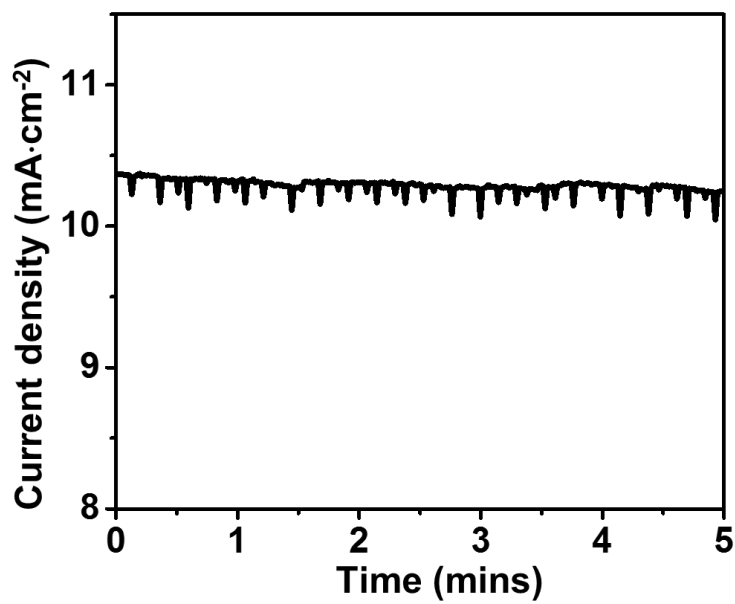


Figure S5. Current density vs. time curve measured at a constant bias of 1.8 V vs. RHE in 1 M NaOH solution. The stable current density indicates the steady state of the CoO nanosheet during PEC measurement.

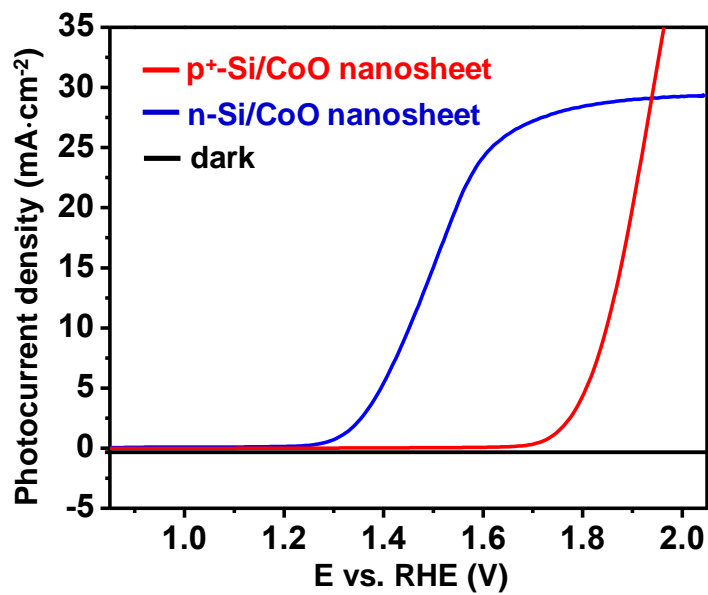


Figure S6. $J_{\text{ph}}-V$ characteristics of n-Si/CoO nanosheet and p⁺-Si/CoO nanosheet, showing a photovoltage of 340 mV produced by n-Si wafer.

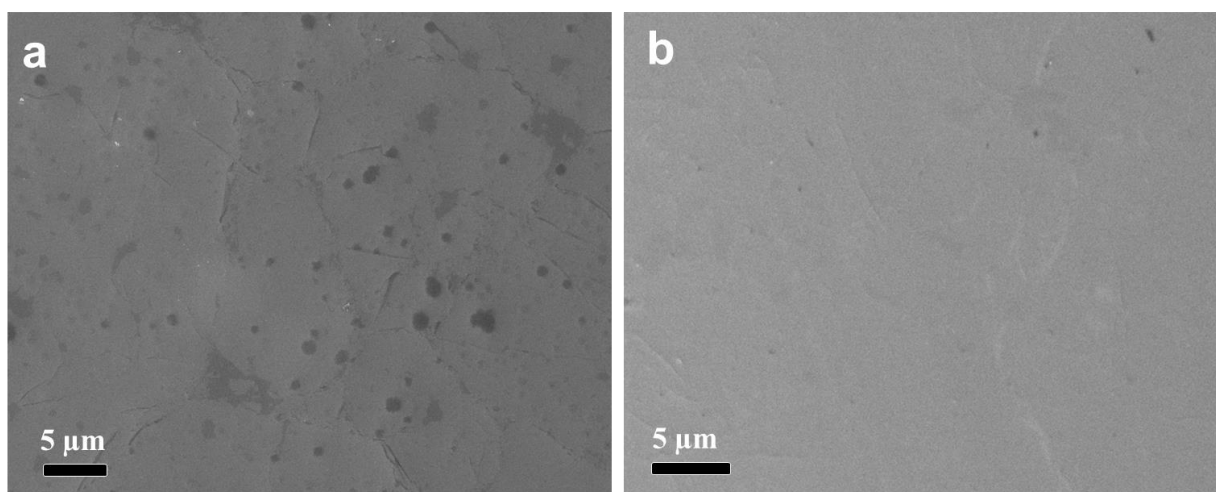


Figure S7. SEM images of CoO nanosheets before (a) and after (b) the PEC measurement.

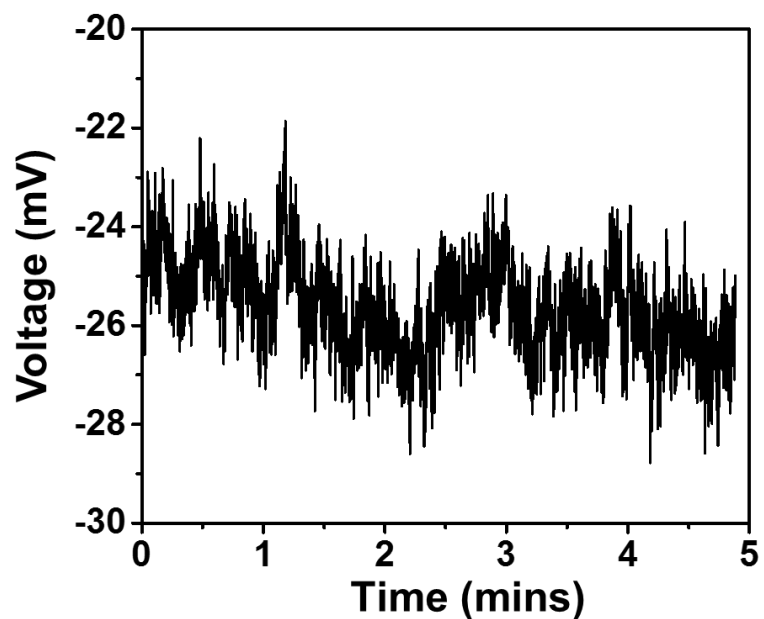


Figure S8. The chronopotentiometry measurement for evaluating the stability of the SCE electrode in 1M NaOH aqueous solution. Two electrode setup was adopted. The SCE electrode was used as the working electrode and a standard Ag/AgCl electrode was employed as the reference/counter electrode. Within 5 min testing period, the voltage remained at a constant value of ~ -25 mV, suggesting the SCE potential could operate stably in NaOH solution within the short testing window.