

Supporting Information

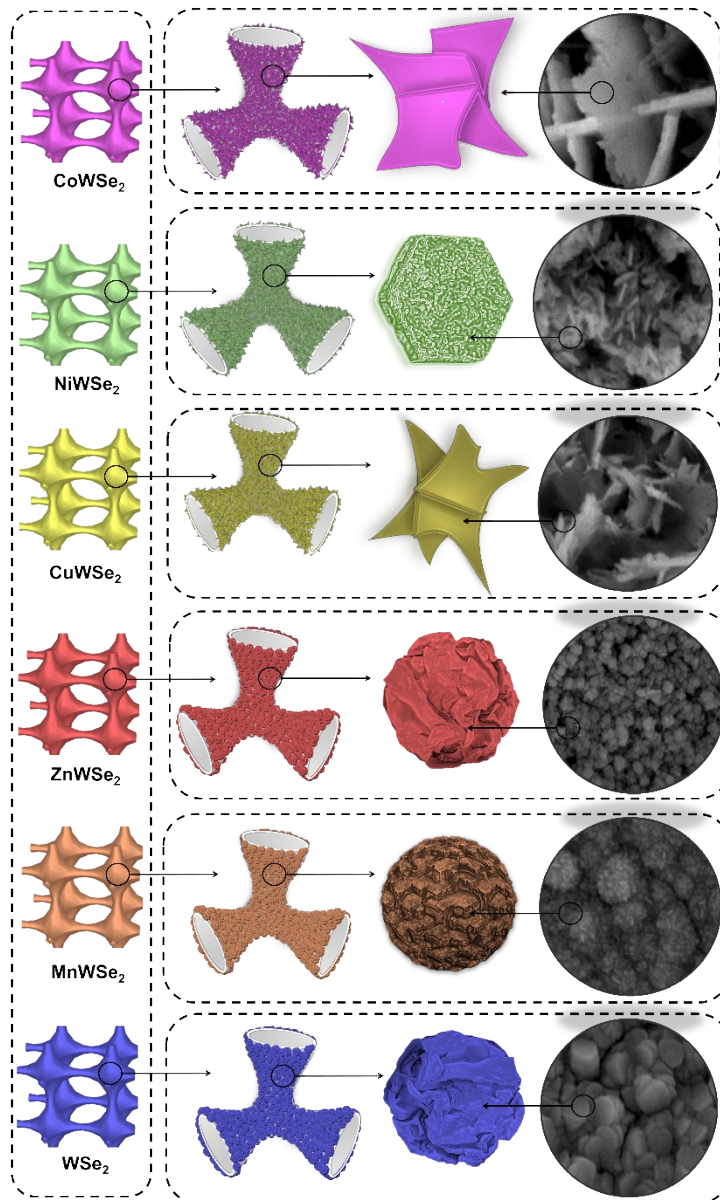
Cobalt Tungsten Diselenides Supported Nickel Foam as a Battery Type Positive Electrode for Asymmetric Supercapacitor Device: Compared with Various MWSe₂ (M= Ni, Cu, Zn, and Mn) on Structural and Capacitance Characteristics

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Scheme S1. Schematic representation for the morphologies of prepared bimetallic chalcogenides.

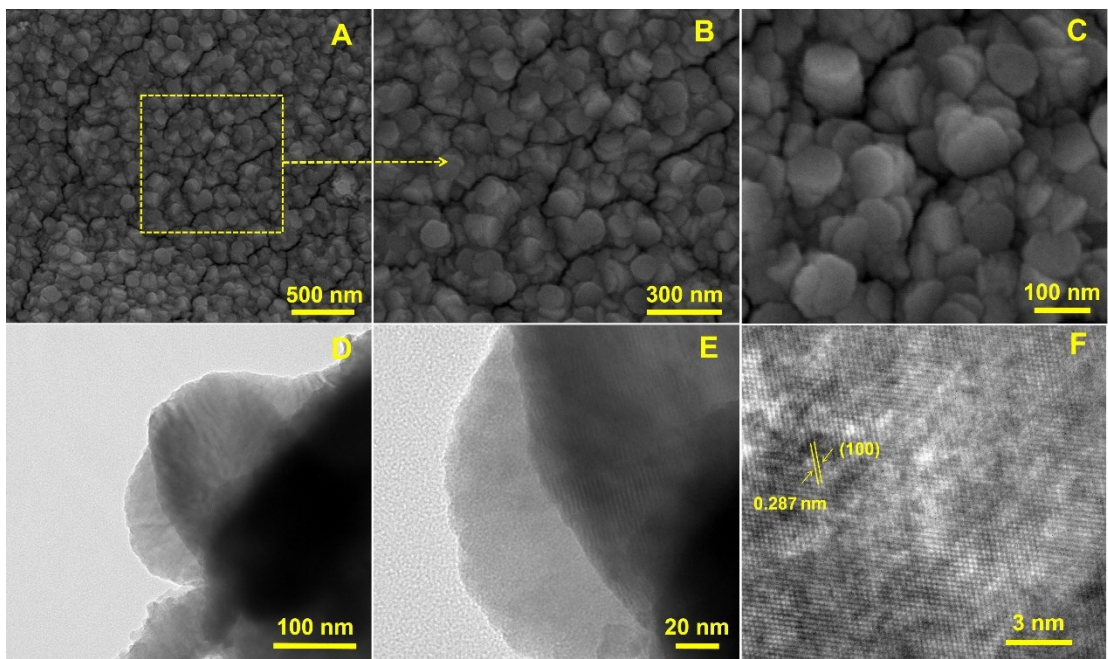


Figure S1. (A-C) Different magnified FESEM and (D-F) TEM images of WSe₂ nano coins.

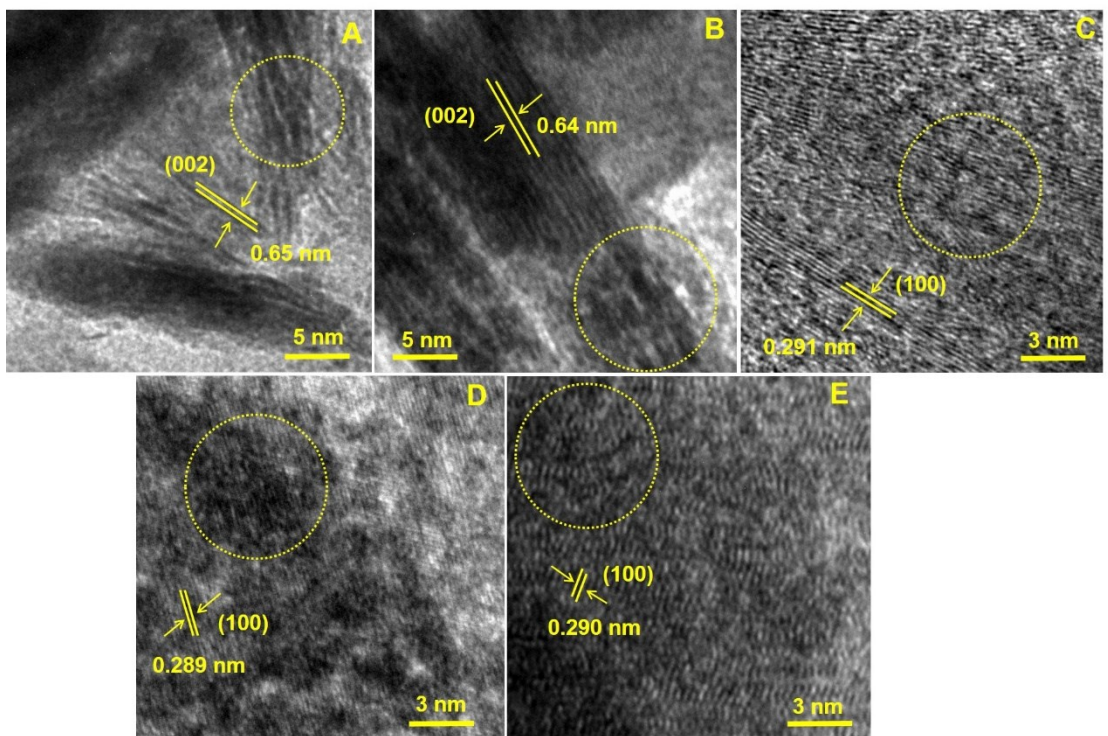


Figure S2. HRTEM images of (A) CoWSe₂, (B) NiWSe₂, (C) CuWSe₂, (D) ZnWSe₂, and (E) MnWSe₂.

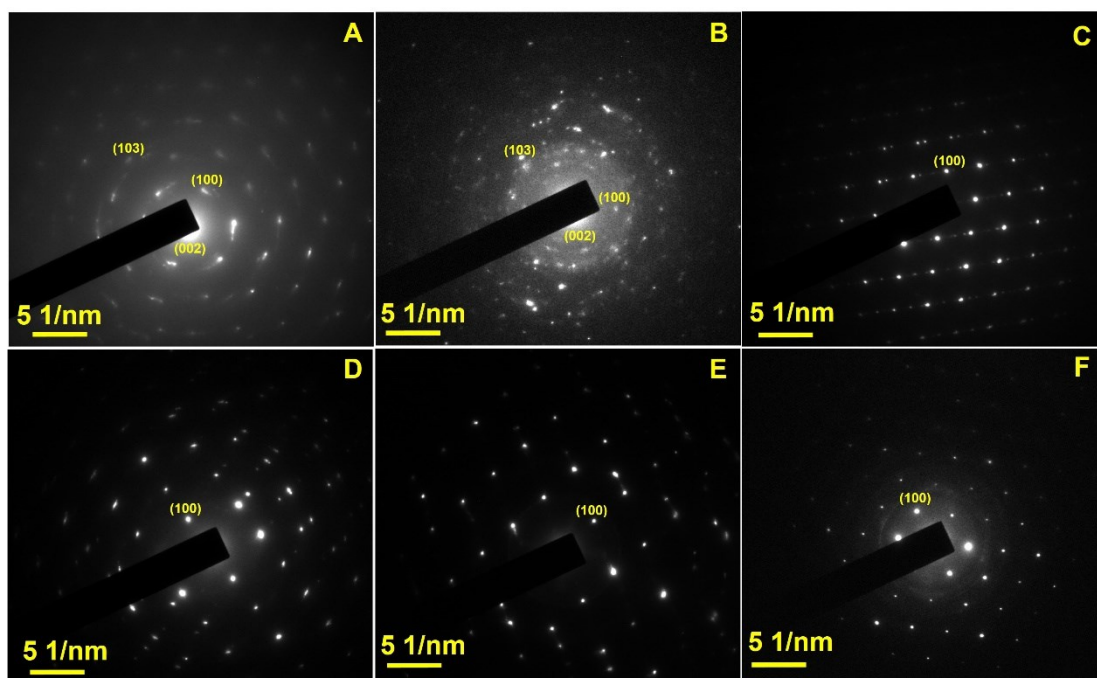


Figure S3. SAED pattern of (A) CoWSe_2 , (B) NiWSe_2 , (C) CuWSe_2 , (D) ZnWSe_2 , (E) MnWSe_2 and (F) WSe_2 .

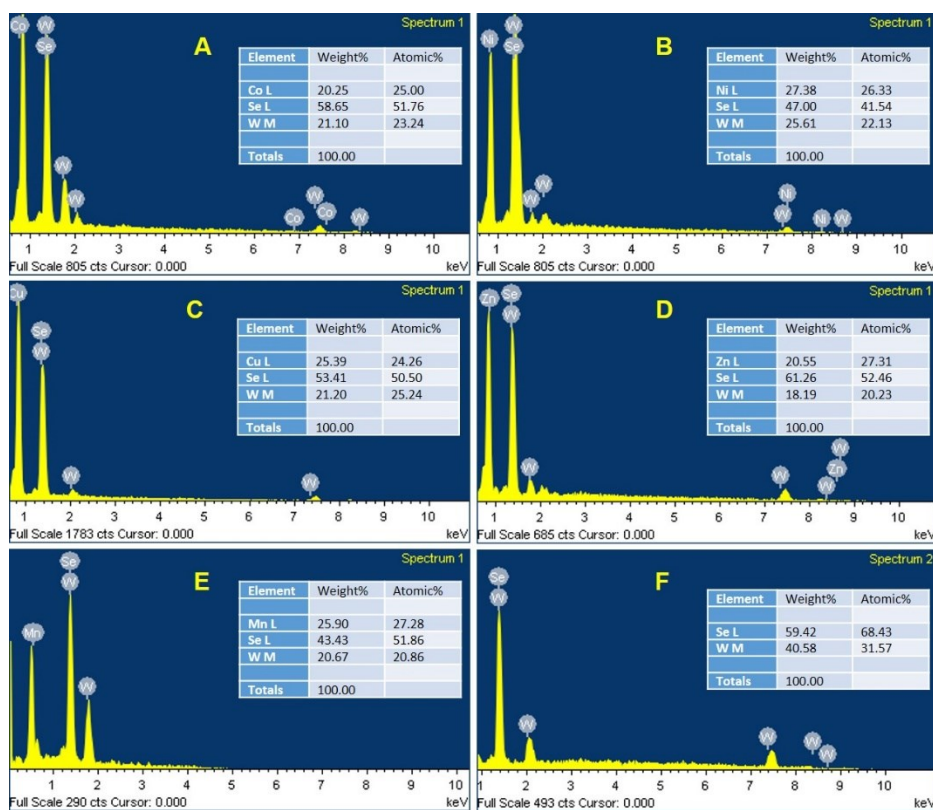


Figure S4. EDX spectra of (A) CoWSe_2 , (B) NiWSe_2 , (C) CuWSe_2 , (D) ZnWSe_2 , (E) MnWSe_2 and (F) WSe_2 .

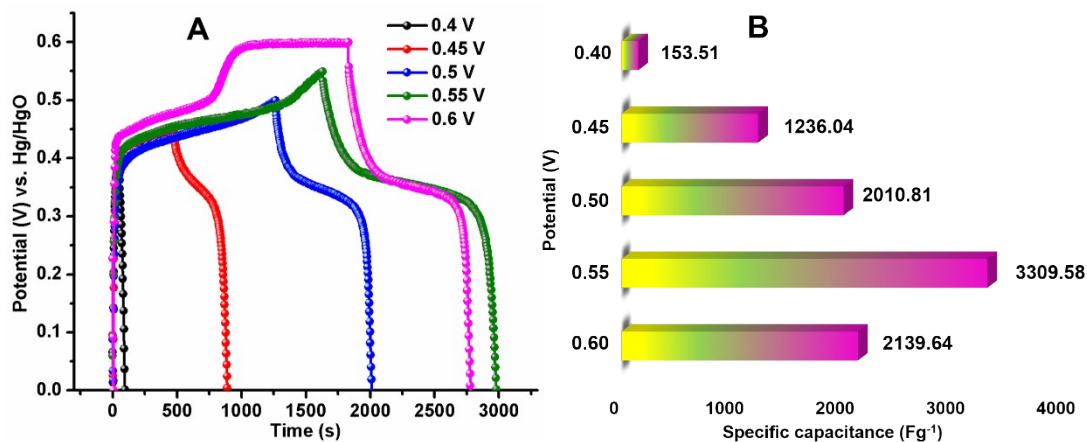


Figure S5. (A) GCD profile of CoWSe₂ at various potential window (B) corresponding bar diagram for the specific capacitance vs. applied potential.

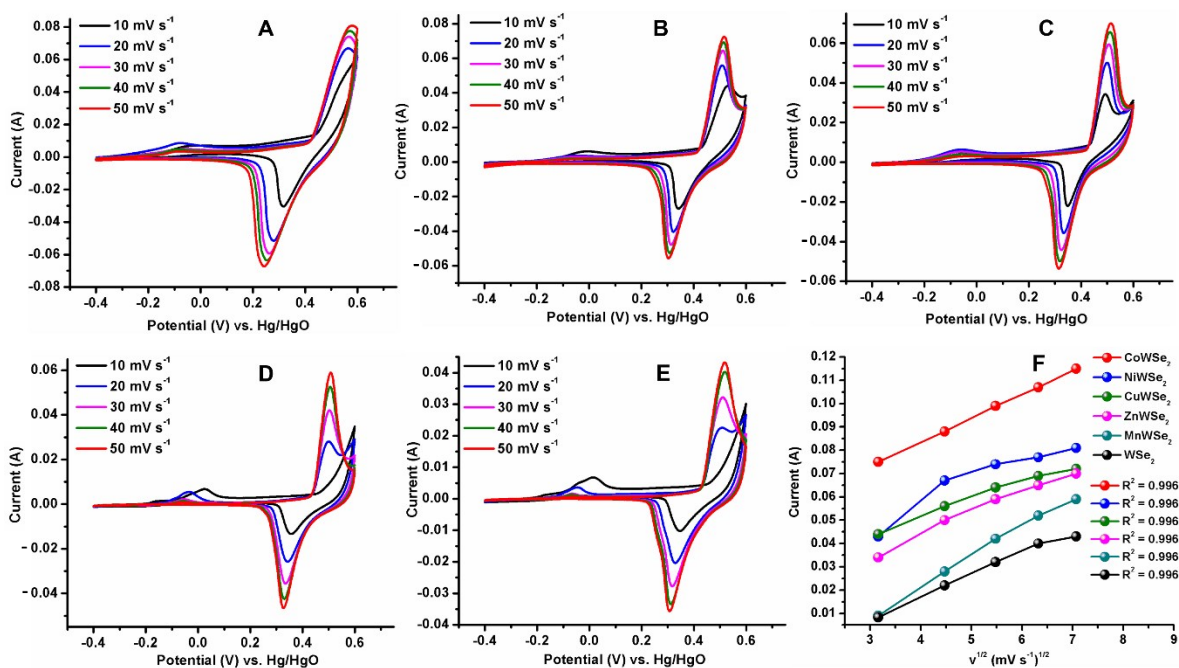


Figure S6. CV profiles of (A) NiWSe₂ (B) CuWSe₂ (C) ZnWSe₂ (D) MnWSe₂ and (E) WSe₂. (F) Calibration plot for square root of scan rate vs. anodic peak current.

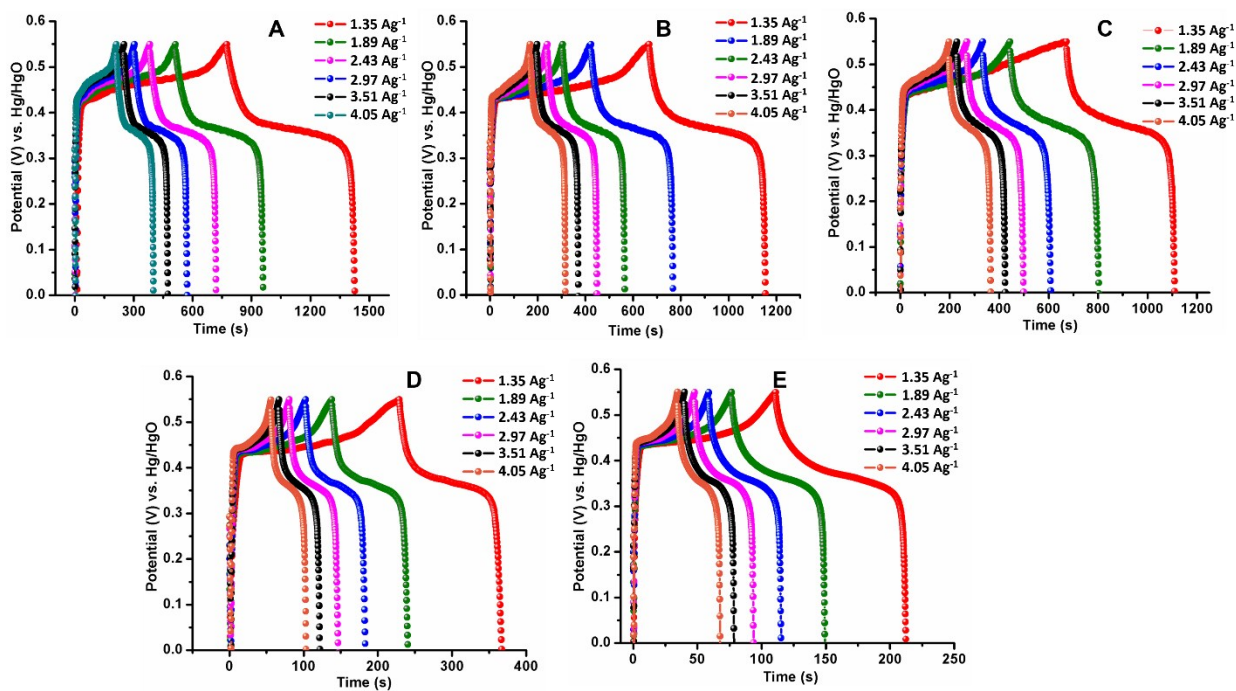


Figure S7. GCD profile of (A) NiWSe₂ (B) CuWSe₂ (C) ZnWSe₂ (D) MnWSe₂ and (E) WSe₂ for 1.35, 1.89, 2.43, 2.97, 3.51 and 4.05 Ag⁻¹.

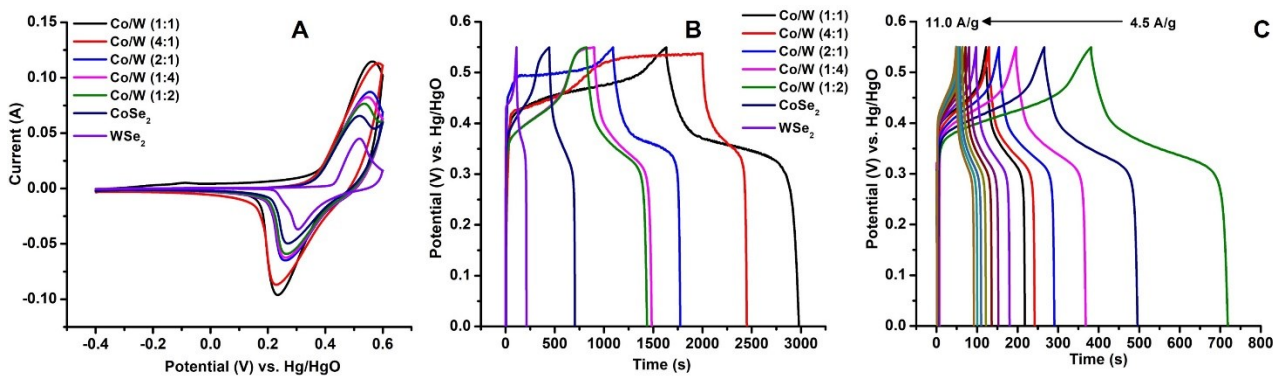


Figure S8. (A) CV and (B) GCD response for CoWSe₂ (Co/W = 1:1, 1:2, 1:4, 2:1, 4:1), CoSe₂ and WSe₂ and (C) GCD of CoWSe₂ at higher applied current densities from 4.5 to 11.0 Ag⁻¹.

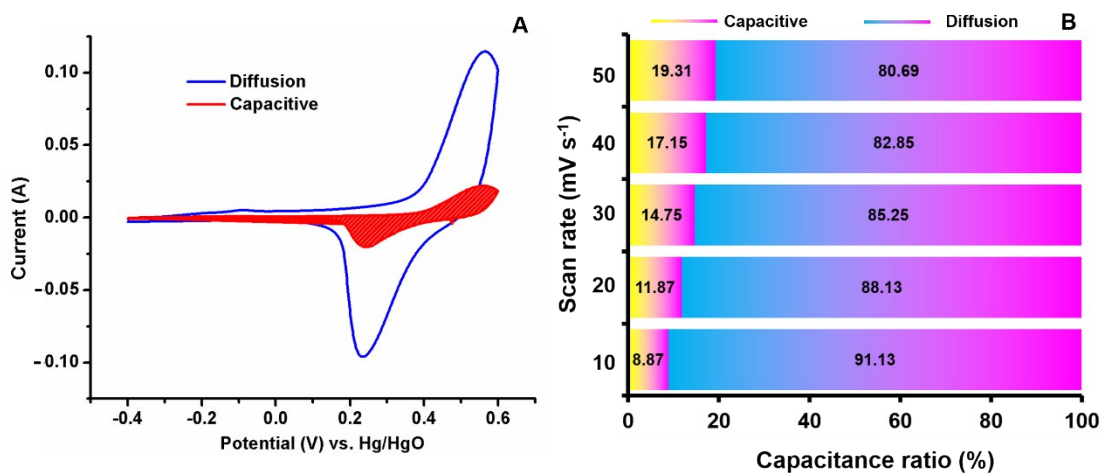


Figure S9. (A) CV profile for the diffusion and capacitive charge storage reaction at scan rate of 50 mV s⁻¹ and (B) bar diagram for corresponding capacitance ratio.

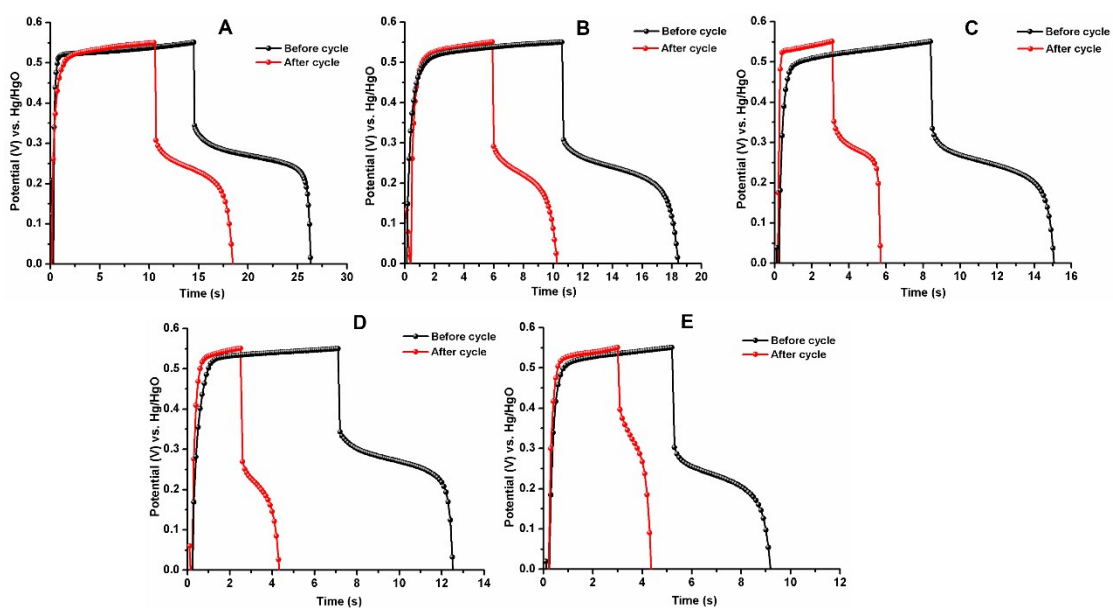


Figure S10. GCD response of (A) NiWSe₂ (B) CuWSe₂ (C) ZnWSe₂ (D) MnWSe₂ and (E) WSe₂ before and after 5000th cycle.

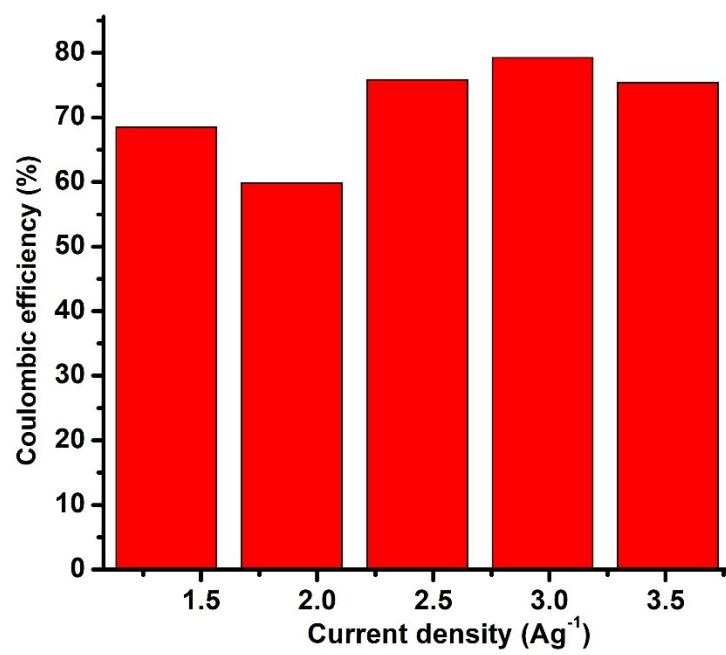


Figure S11. Bar diagram for current density vs. coulombic efficiency.