

Supporting Information

Room Temperature Electrodeposition of Molybdenum Sulfide for Catalytic and Photoluminescence Applications

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Figures

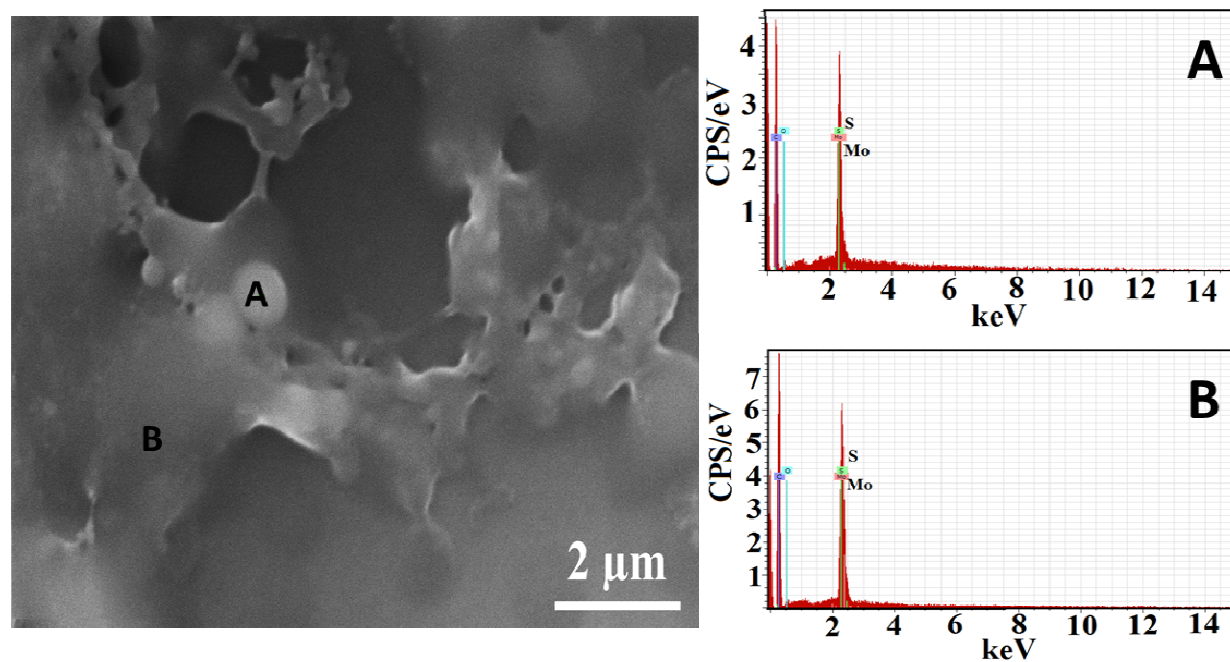


Figure S1. SEM-EDS analysis of MoS₂ film deposited on GC by chronoamperometric method at -2.7 V vs. Pt (QRE) for 1800 s at 100 °C of the with equal quantity of sulfur precursor (1, 4 butanedithiol) with molybdenum glycolate in PP₁₃TFSI ionic liquid. A and B are the sites in the image were analyzed shows the presence of Mo and S in the elemental analysis shown in A and B.

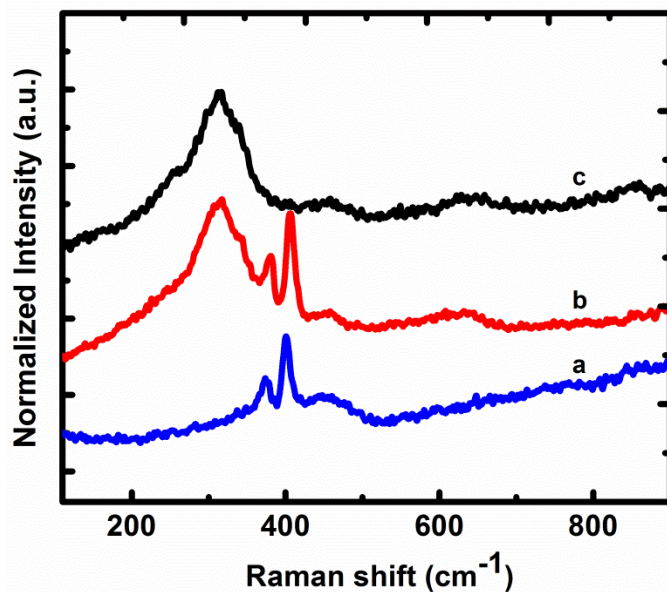


Figure S2. MoS_x films deposited potentiodynamically from 0 to -2.7 V vs. Pt at 100 mV/s scan rate over polished GC substrates with different ratio of Mo and Sulfur precursors, a. 1:1, b. 1:2 and c. 1:3 ratios at 100 °C.

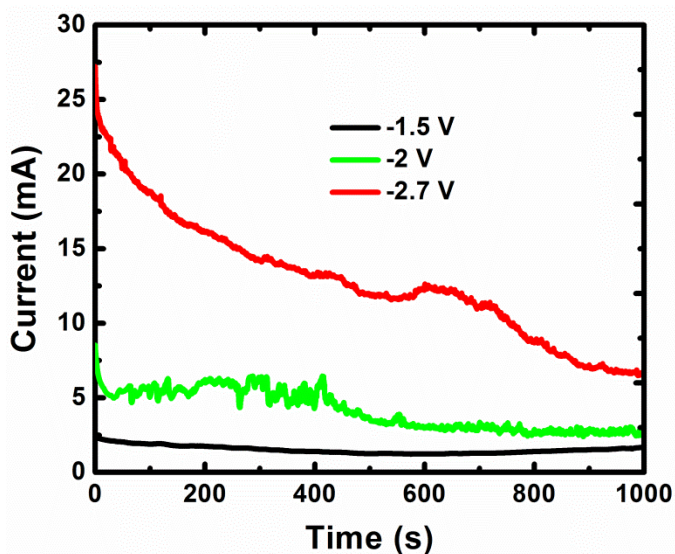


Figure S3. Chronoamperometric deposition of MoS₂ film deposition at 100 °C over GC substrates at various potentials, -1.5 V (Black color line), -2 V (Green color line) and -2.7 V (Red color line) vs. Pt (QRE) with 1:1 volume ratio of Mo and S precursors.

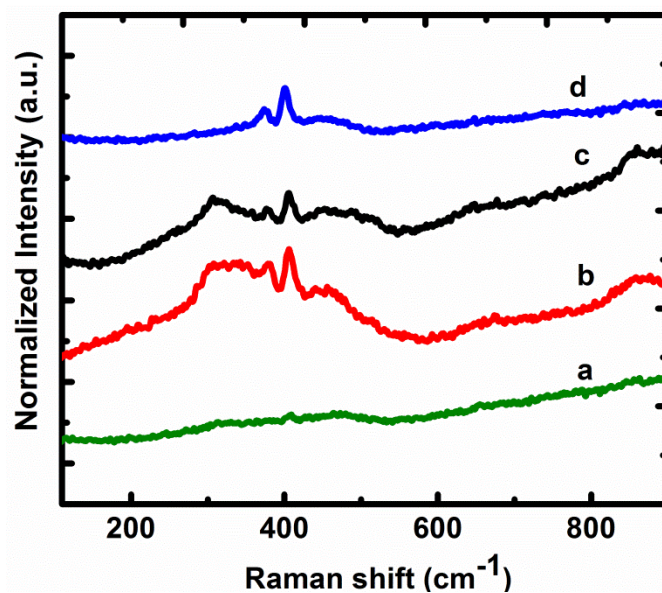


Figure S4. MoS_x films deposited chronoamperometrically at different potential, a. -1V, b. -2V, c. -2.5 and d. -2.7 V vs. Pt (QRE) at 100 °C over polished GC substrates with 1:1 volume ratio of Mo and S precursors.

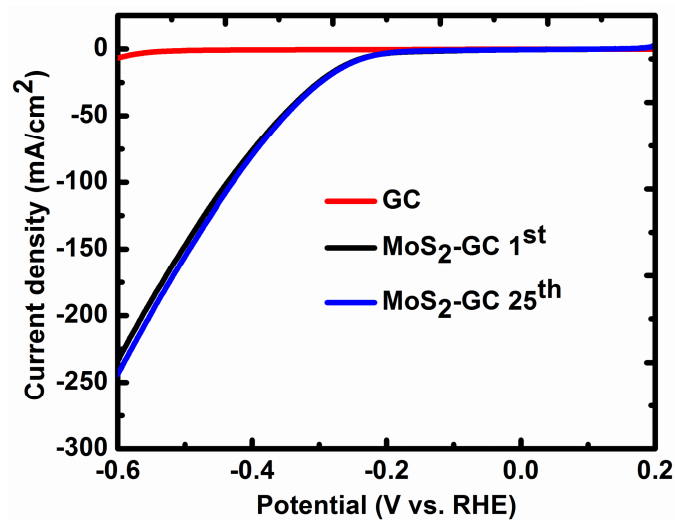


Figure S5. Polarization curves of GC (red color line) and MoS₂ over GC electrodes (black line) 1st scan and 25th scan (blue color) in 0.5 M H₂SO₄ at the scan rate of 2 mV/s.

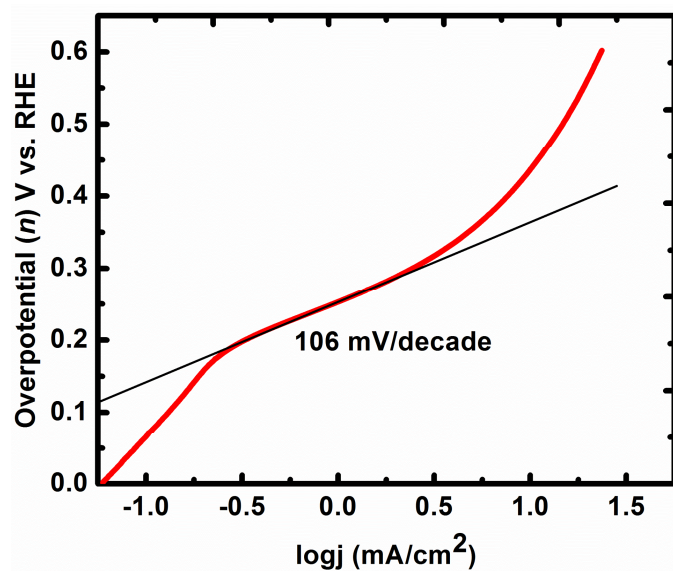


Figure S6. Tafel analysis of the polarization curve for MoS₂ over GC electrodes in 0.5 M H₂SO₄ at the scan rate of 2 mV/s.