Electronic Supplementary Material (ESI) for Journal of Materials Chemistry A.

Efficient porous molybdenum diselenide catalyst for electrochemical hydrogen generation

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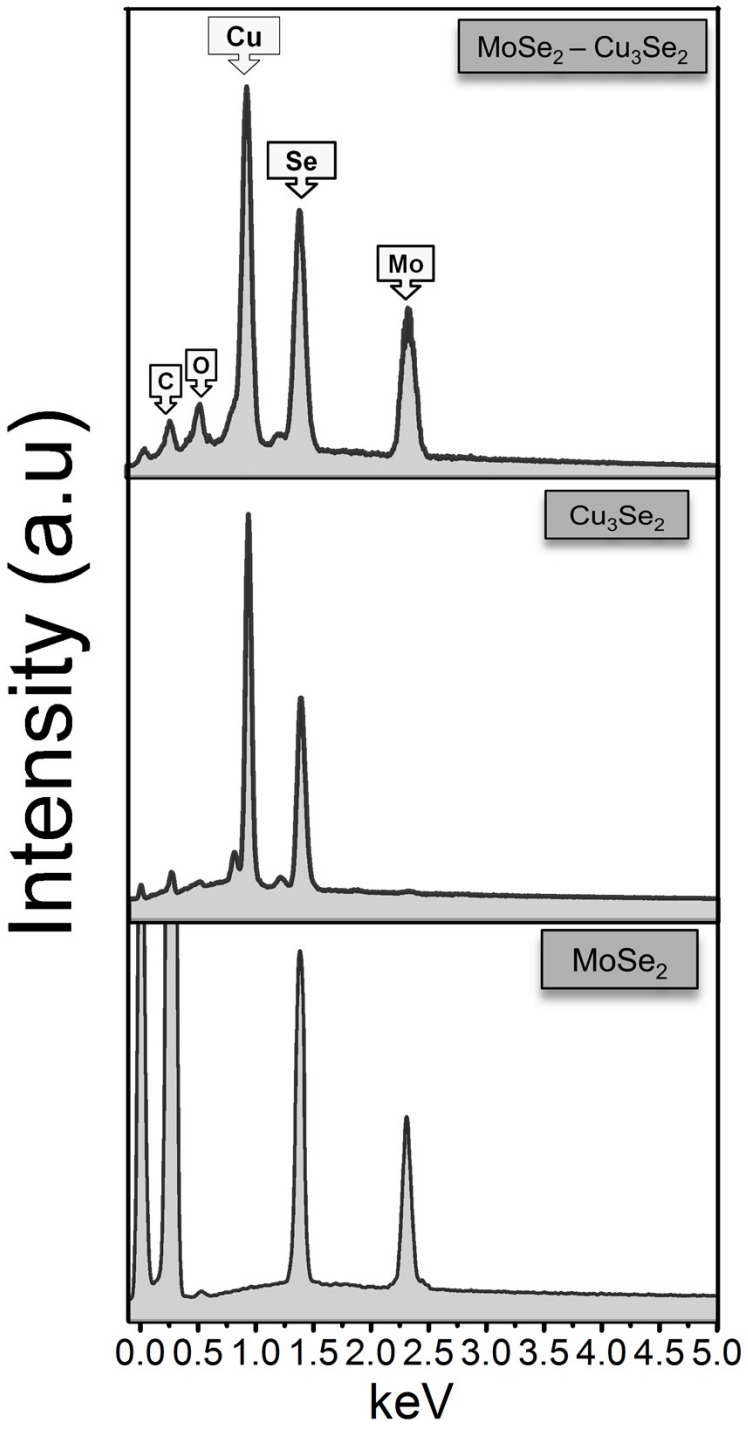

Figure S1 EDS spectrum of pure $MoSe_2$ film, pure Cu_3Se_2 film and composite Mo/Cu obtained from 2:2 volume ratio.

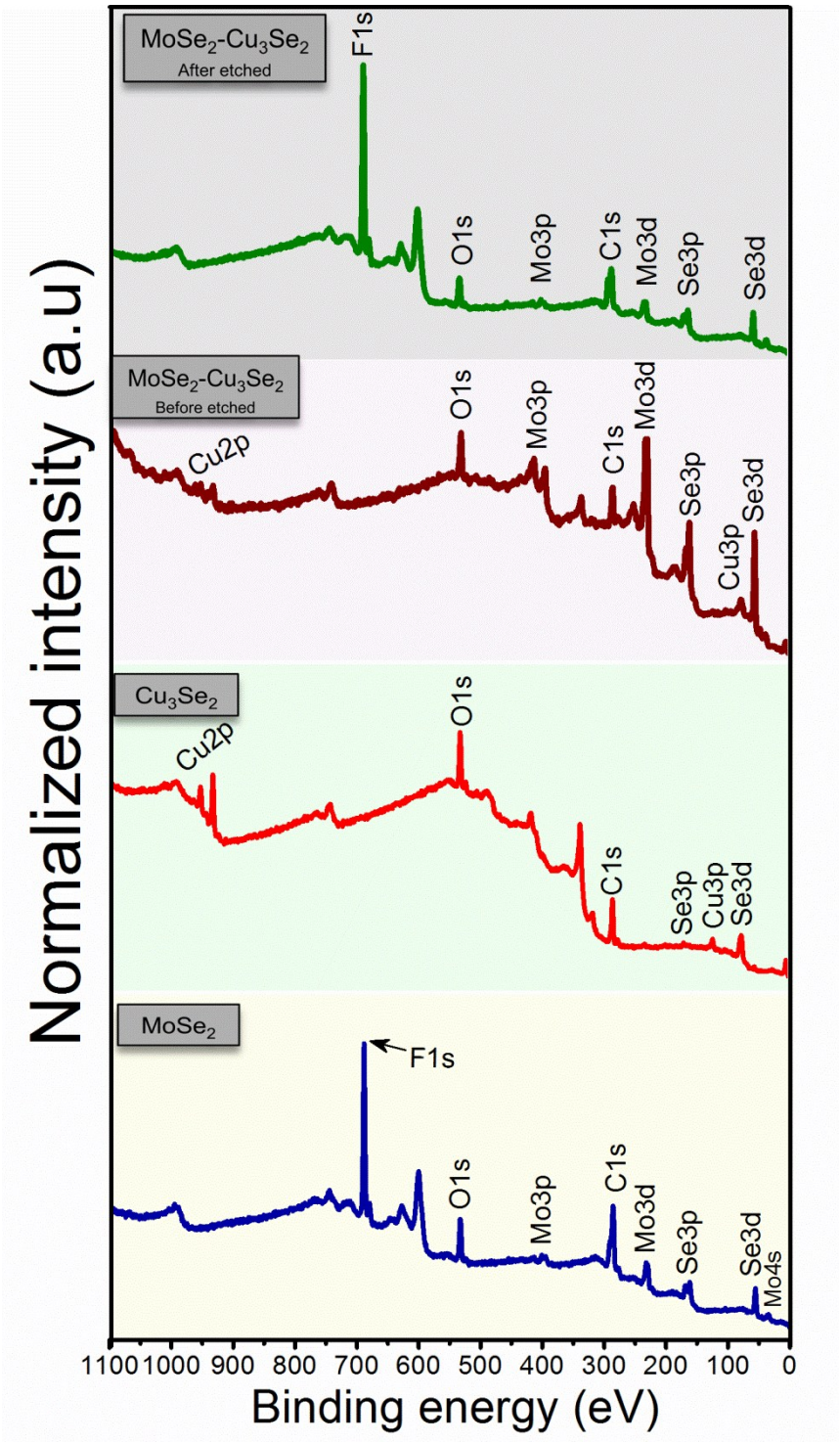

Figure S2 The survey XPS spectrum of Mo3d, Cu2p and Se3d obtained from pure $MoSe_2$ film, pure Cu_3Se_2 film and composite Mo/Cu obtained from 2:2 volume ratio before and after etched copper components out.

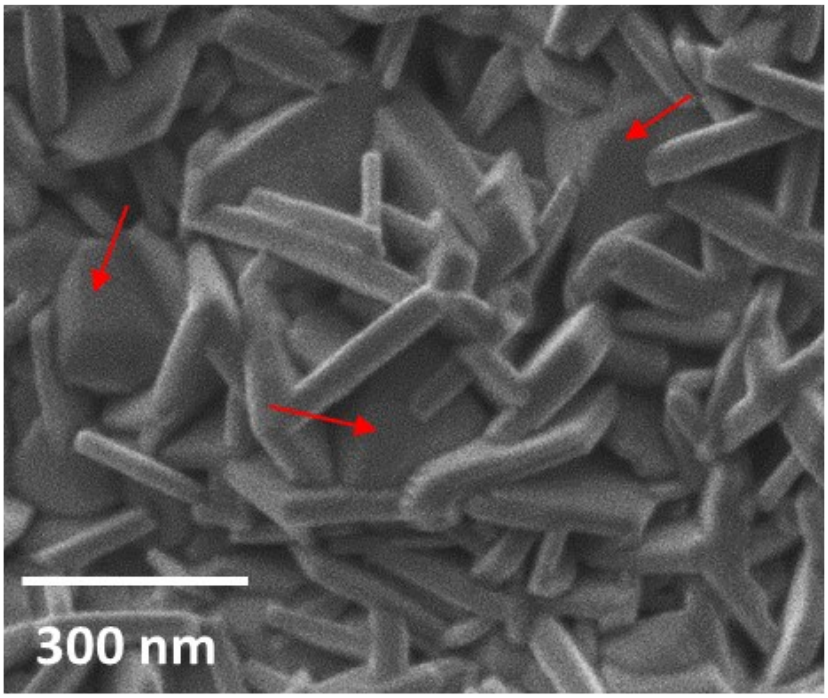

Figure S3 SEM images obtained from the volume ratio of 0.08 M Mo and 0.04 M Cu plating solution 4:1 before etching process, with applied potential at -0.6 V for 20 mC. The red arrows show the location of the copper before etching.

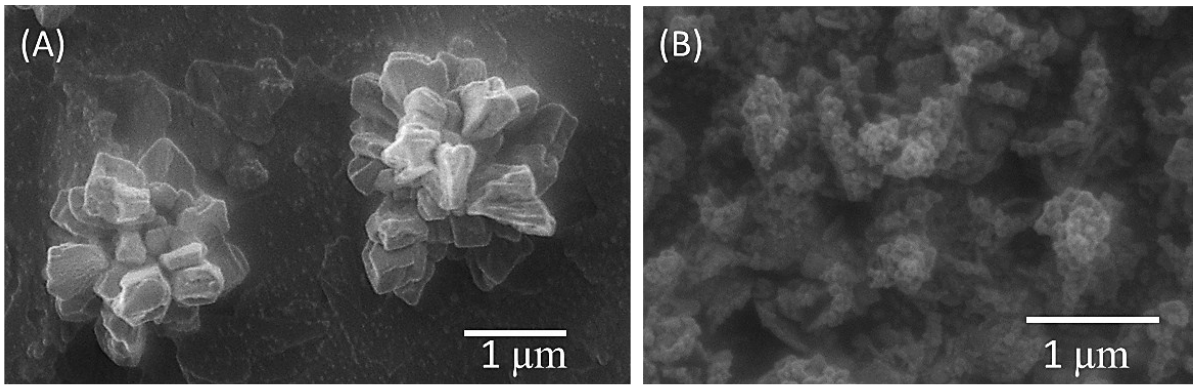

Figure S4 SEM images of 4:1 volume ratio of 0.08 M Mo: 0.04 M Cu at deposition potential (A) -0.4 V (B) -0.8 V for 20 mC.

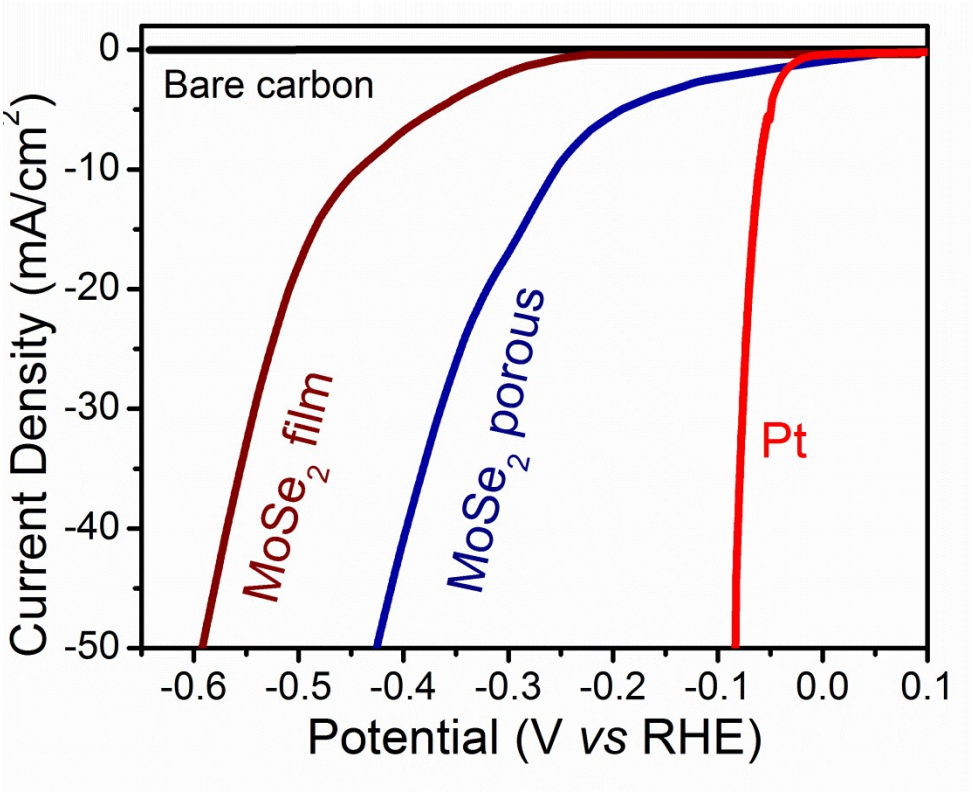

Figure S5 LSV polarization curves for bare carbon electrodes, 0.04 M $MoSe_2$ film, porous $MoSe_2$ and Pt in N_2-purged 0.5 M H_2SO_4 solution. Scan rate: 1 mV s^{-1}.