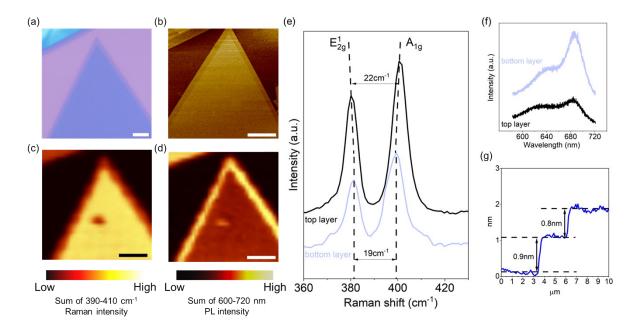
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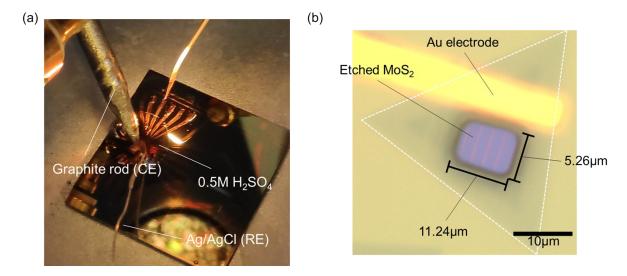
## **Supporting Information**

## Path-Dependent Hydrogen Evolution Reaction via Selective Etching of Bilayer Catalysts

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**Figure. S1.** (a) Optical microscope image of bilayer  $MoS_2$  and (b) atomic force microscope mapping image. (c) Raman and (d) photoluminescence mapping of bilayer  $MoS_2$ . Layer-dependent (e) Raman and (f) PL spectra from a top layer and bottom layer from of bilayer  $MoS_2$ . The scale bar for all figures is  $10\mu m$ .



**Figure. S2.** (a) Image of setup for electrochemical analysis. (b) The optical image of etched  $MoS_2$  hydrogen evolution reaction device. The opened area is  $59.1 \mu m^2$ .

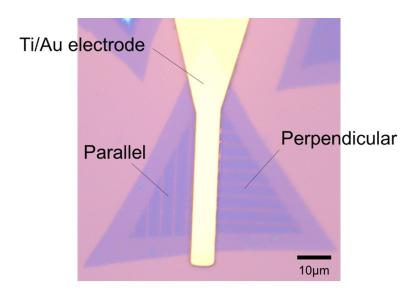


Figure. S3. The optical image of parallel and perpendicular direction etched MoS<sub>2</sub>.

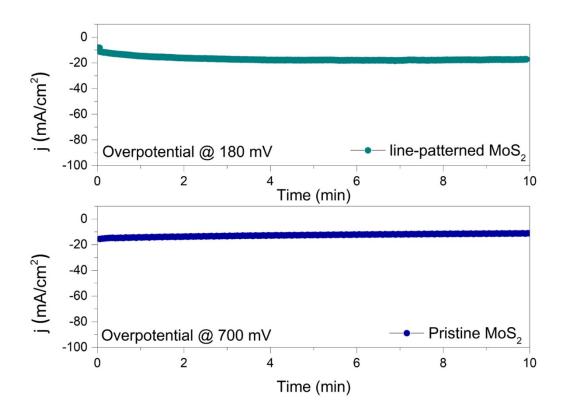


Figure. S4. Stability test of line-patterned and pristine bilayer MoS<sub>2</sub> catalysts.