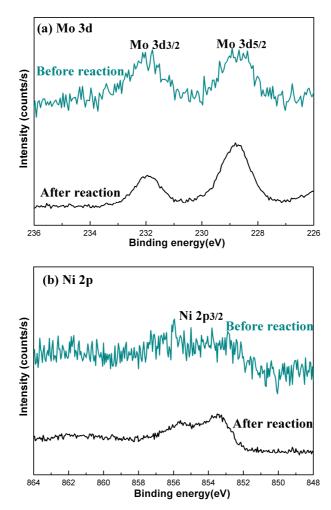
## Supplementary Materials: Ni-Mo Sulfide Semiconductor Catalyst with High Catalytic Activity for One-Step Conversion of CO<sub>2</sub> and H<sub>2</sub>S to Syngas in Non-Thermal Plasma

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**Figure S1.** XPS spectra of Mo 3d (**a**) and Ni 2p (**b**) for the 5Ni-3Mo/Al<sub>2</sub>O<sub>3</sub> catalyst before and after reaction.

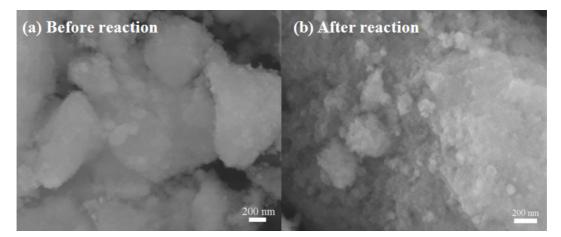


Figure S2. SEM images of the 5Ni-3Mo/Al<sub>2</sub>O<sub>3</sub> catalyst before (a) and after (b) reaction.

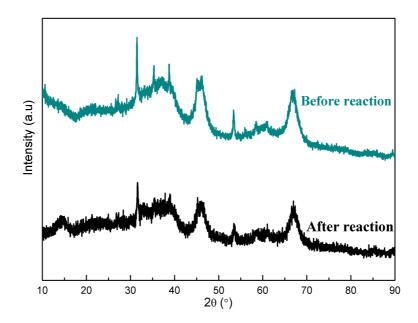


Figure S3. XRD patterns of the 5Ni-3Mo/Al<sub>2</sub>O<sub>3</sub> catalyst before and after reaction.