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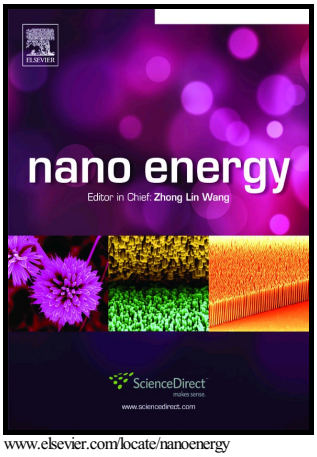

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ABSTRACT

Silicon is a promising photocathode material for solar hydrogen evolution because of its small band gap, negative conduction band position, and ideal theoretical current density. In this study, p-type Si microwire (p-Si MW) arrays were prepared as photocathodes because of the large surface area and high light-harvesting capability. However, Si MWs suffered from low photocatalytic activity because of slow photo-induced carriers during driving of water-splitting reaction. Therefore, molybdenum sulfide