

**ZnO/ZnS heterostructures for hydrogen production by photoelectrochemical  
water splitting**

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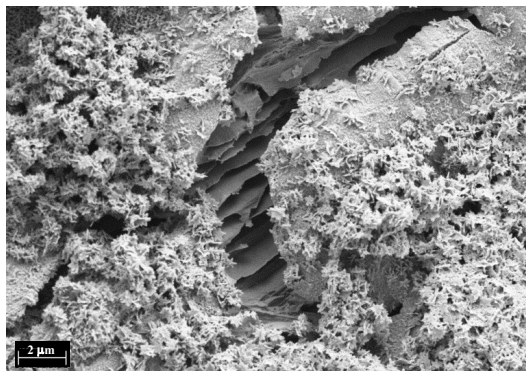
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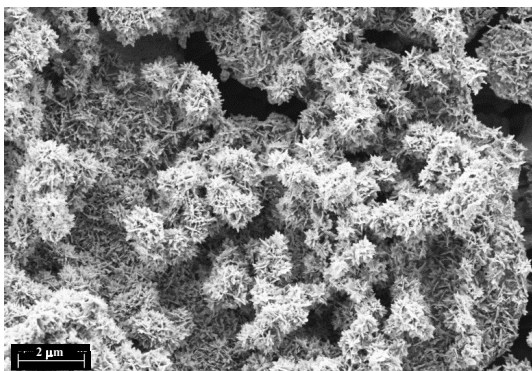
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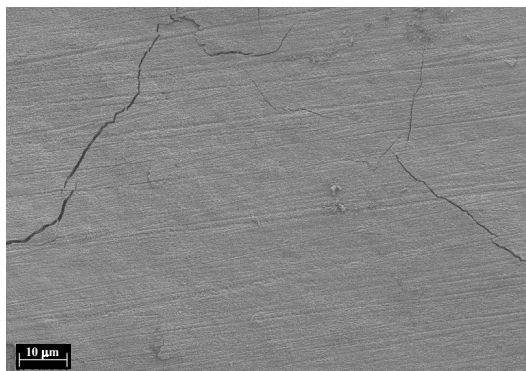
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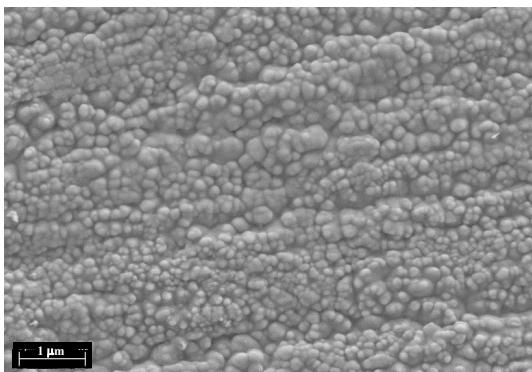
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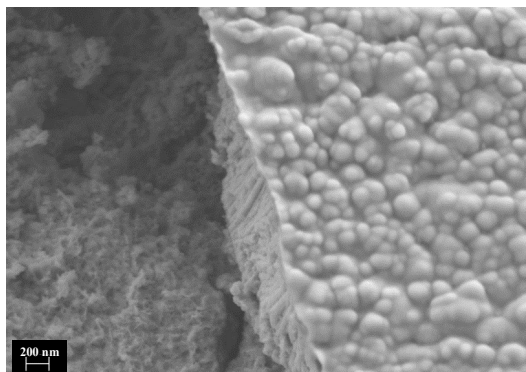
d)



e)



f)



**Figure S1.** FE-SEM images of the ZnO/ZnS heterostructures anodized under static (a-c) and dynamic conditions (d-f) in 0.06M Na<sub>2</sub>S+0.0125M water electrolytes.

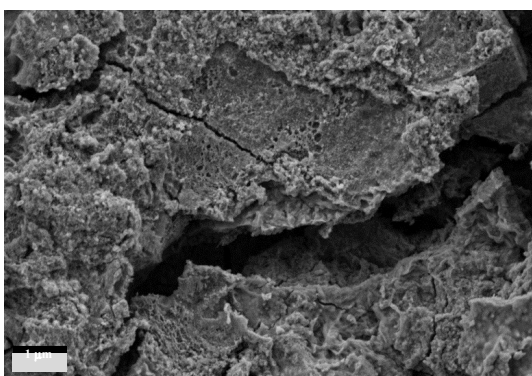
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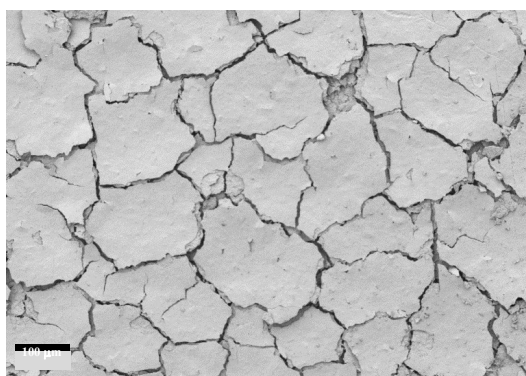
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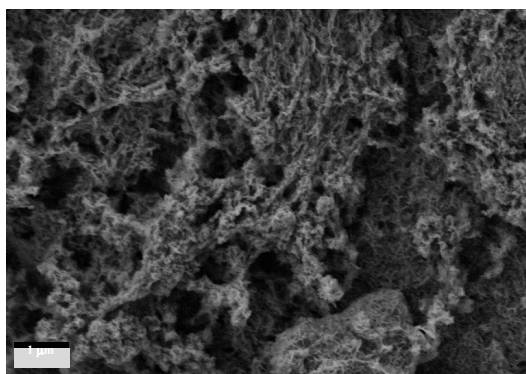
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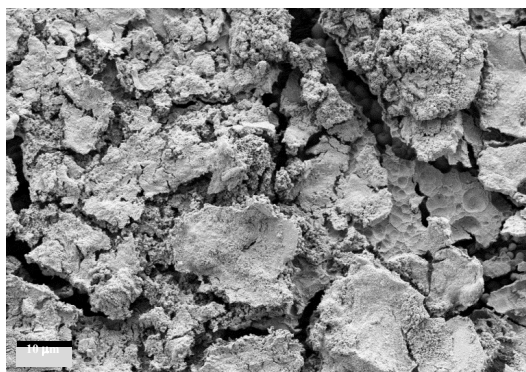


**Figure S2.** FE-SEM images of the ZnO/ZnS heterostructures anodized under static (a-c) and dynamic (d-f) conditions in 0.2 M Na<sub>2</sub>S+0.0125M water electrolytes.

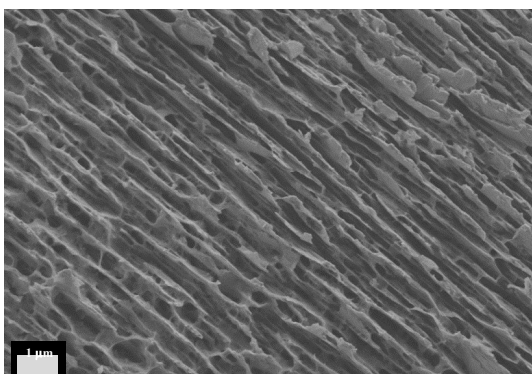
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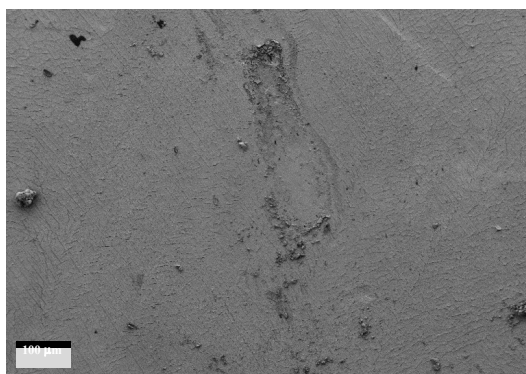
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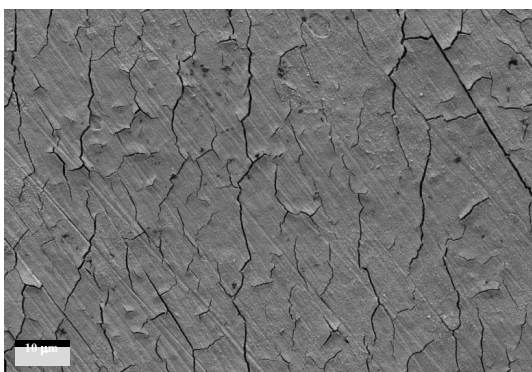
c)



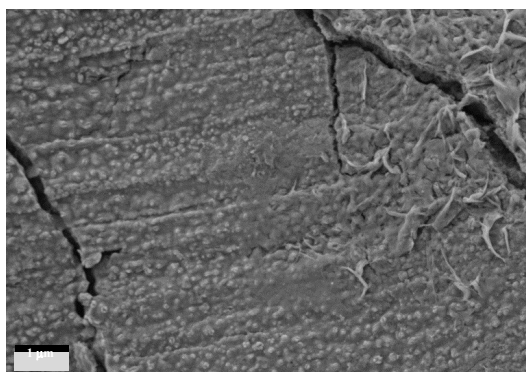
d)



e)



f)



**Figure S3.** FE-SEM images of the ZnO/ZnS heterostructures anodized under static (a-c) and dynamic conditions (d-f) in 0.06M Na<sub>2</sub>S+0.0125M glycerol/water electrolytes.

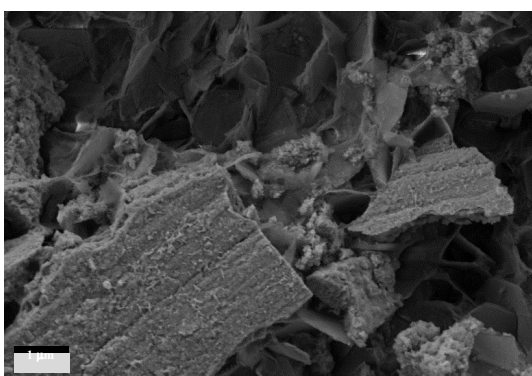
a)



b)



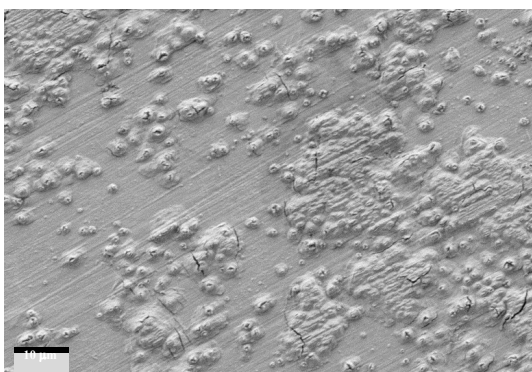
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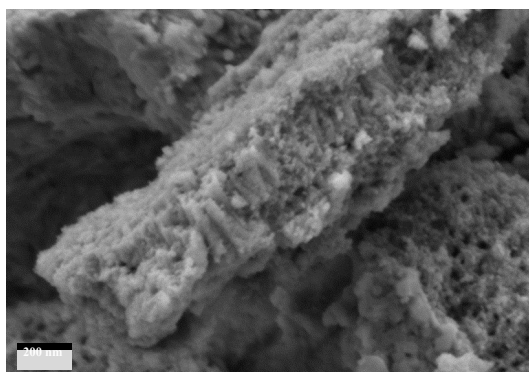
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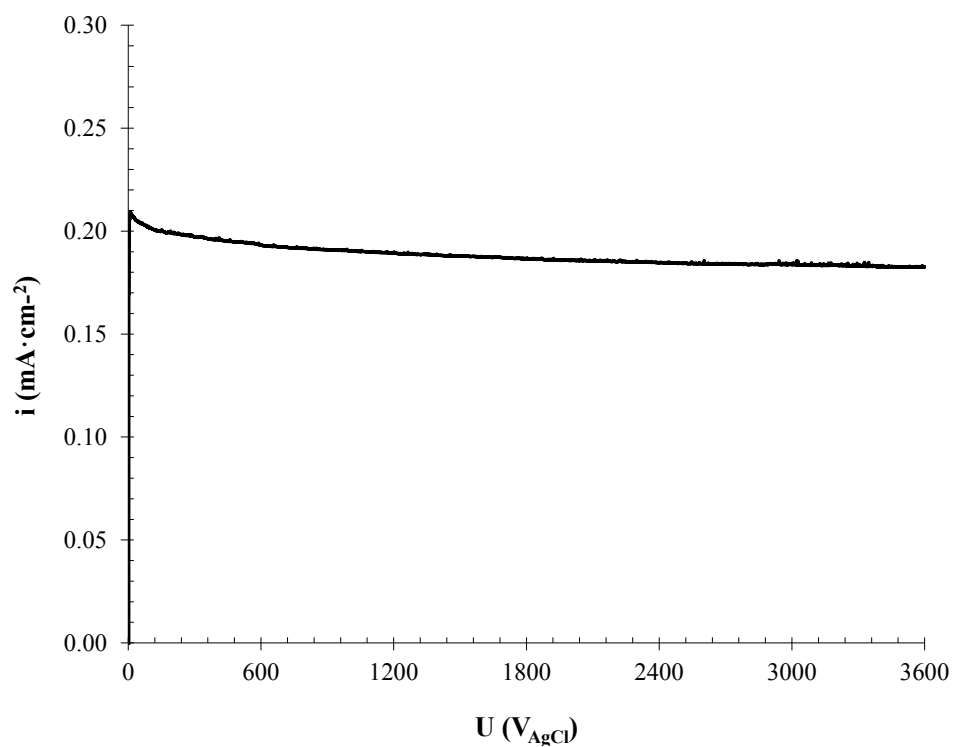
e)



f)



**Figure S4.** FE-SEM images of the ZnO/ZnS heterostructures anodized under static (a-c) and dynamic conditions (d-f) in 0.2M Na<sub>2</sub>S+0.0125M glycerol/water electrolytes.



**Figure S5.** Photostability in 0.24M Na<sub>2</sub>S and 0.35M Na<sub>2</sub>SO<sub>3</sub> solution during 1 hour of the heterostructure anodized in 0.2M Na<sub>2</sub>S + 0.025M NH<sub>4</sub>F glycerol/water solution stirring the electrolyte at 2000 rpm, holding at 500 mV the potential under AM 1.5 illumination