

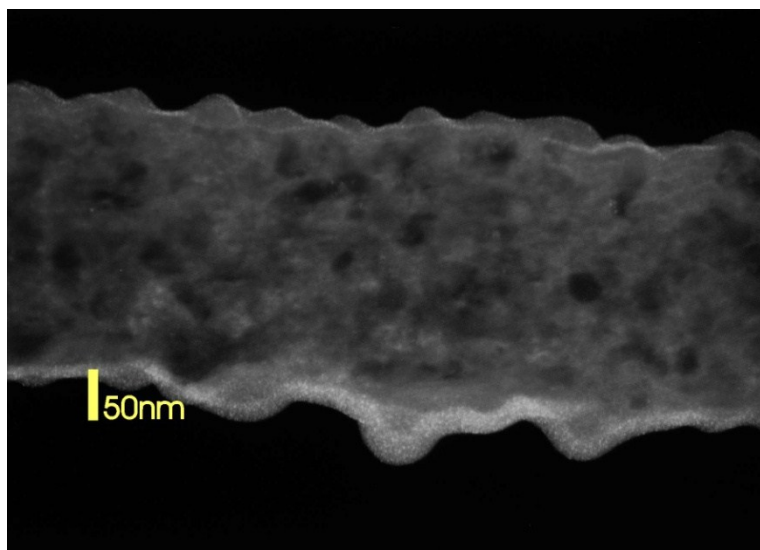
## Supplementary Information

### Facile synthesis of core/shell ZnO/ZnS nanofibers by electrospinning and gas-phase sulfidation for biosensor applications

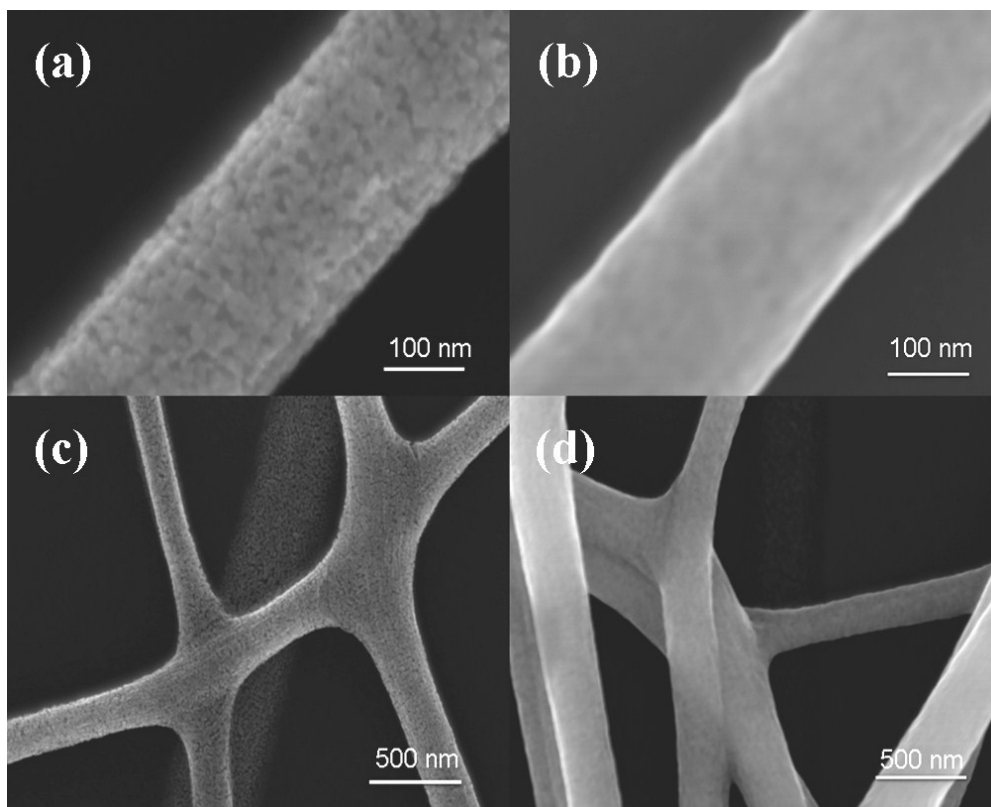
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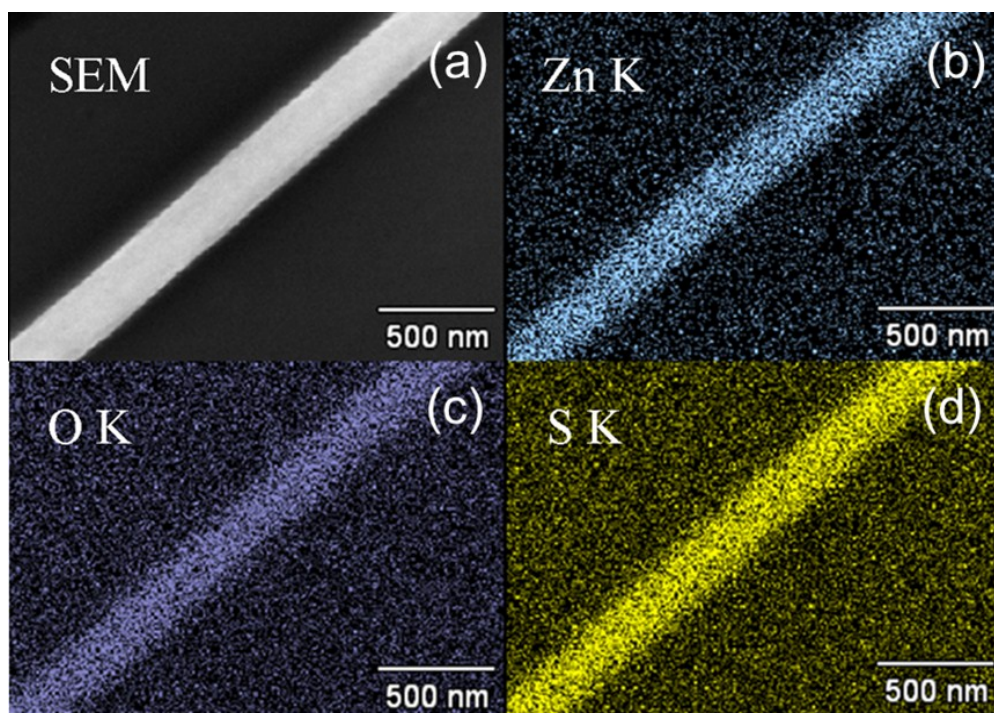
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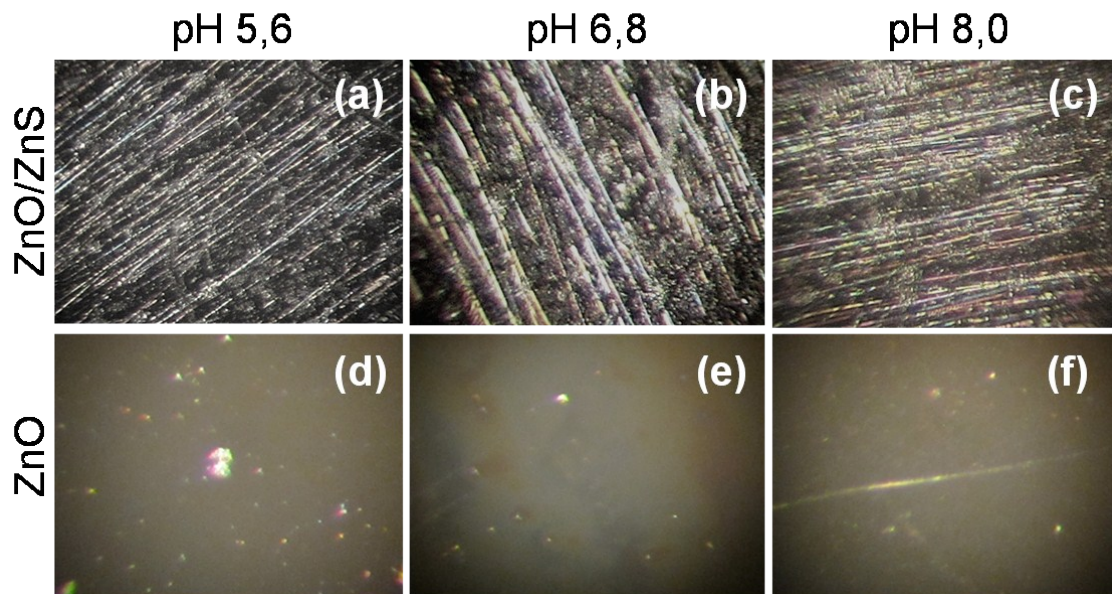
**Fig. 1.** TEM image (dark field) of ZnO/ZnS nanofiber after a sulfidation time of 20 min.



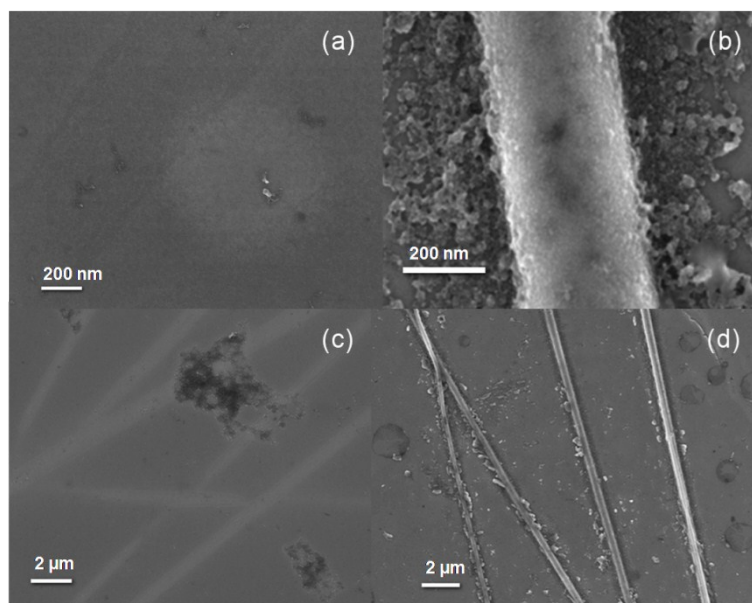
**Fig. 2.** SEM images of (a,b) ZnO and (c,d) ZnO/ZnS nanofibers. ZnO/ZnS nanostructures were obtained after a sulfidation time of 60 min.



**Fig. 3.** (a) SEM image and EDX maps for (b) Zn-K, (c) O-K and (d) S-K of ZnO/ZnS nanofiber. Nanostructure was obtained after a sulfidation time of 60 min.

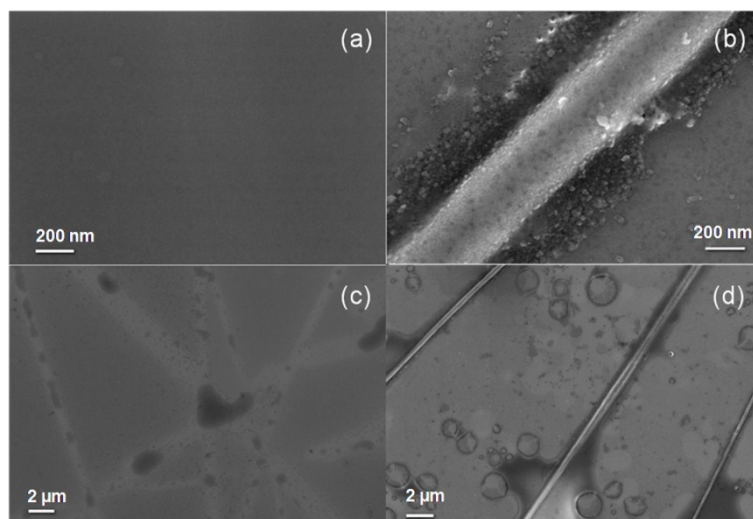


**Fig. 4.** Light microscope images of ZnO/ZnS (a,b,c) and ZnO (d,e,f) nanofibers: (a,d) immersed in 66 mM phosphate buffer at pH 5.6 for 70 h; (b,e) immersed in 66 mM phosphate buffer at pH 6.8 for 70 h, (c,f) immersed in 66 mM phosphate buffer at pH 8.0 for 70 h.

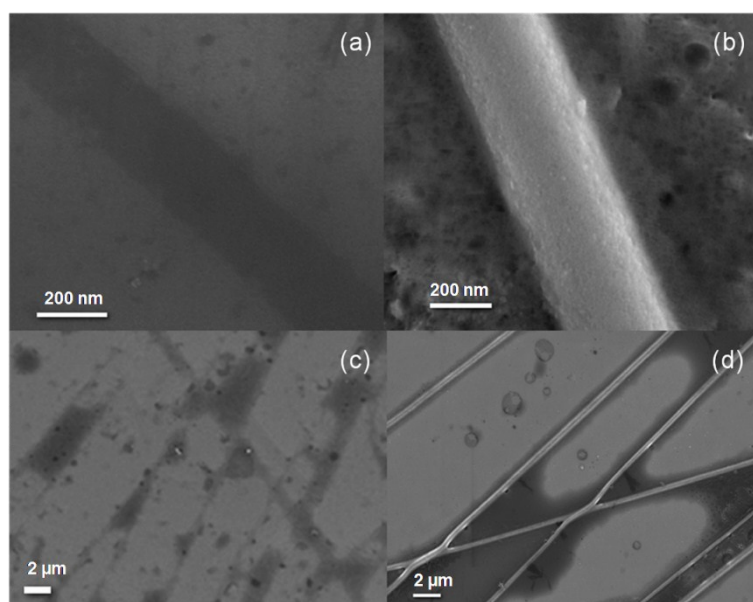


**Fig. 5.** SEM images of ZnO (a,c) and ZnO/ZnS (b,d) nanofibers immersed in 66 mM phosphate buffer at pH 5.6 for 70 h.

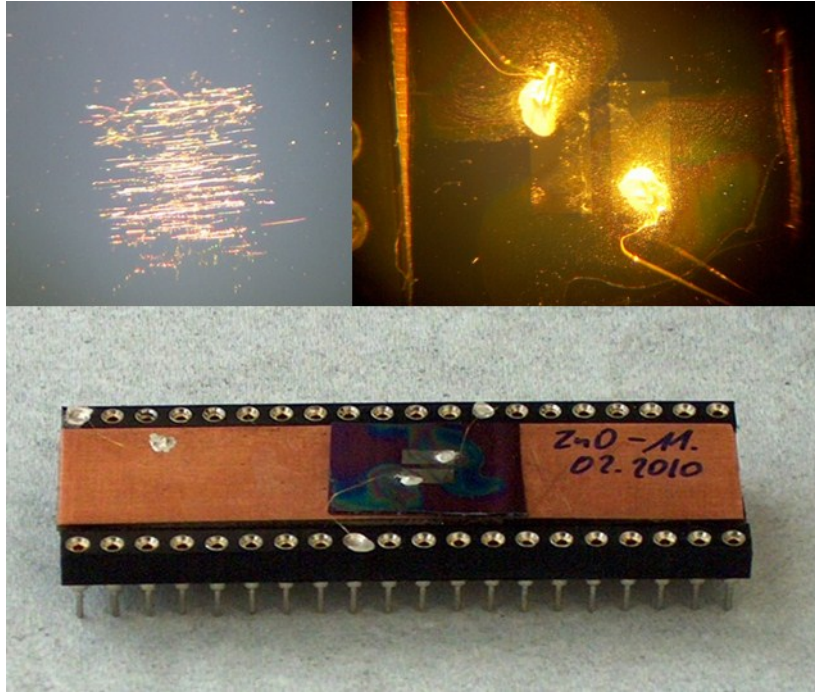




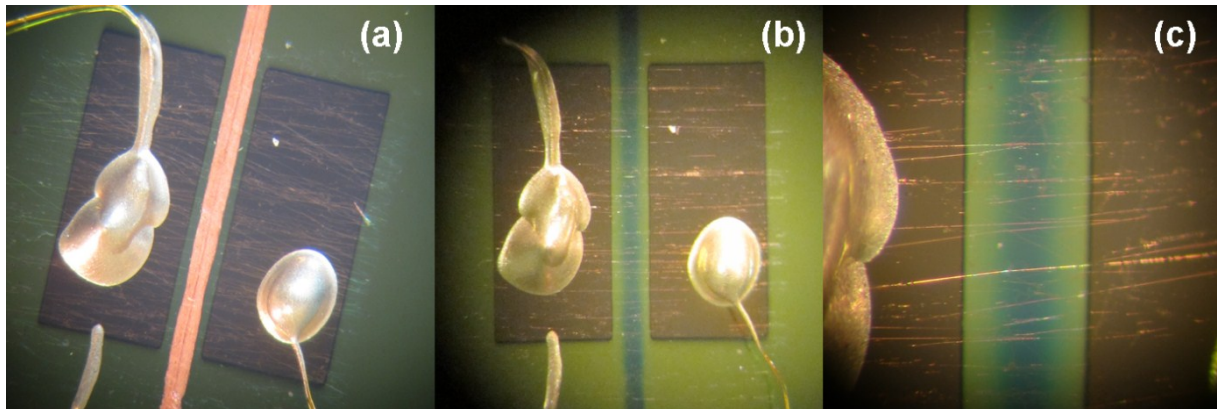
**Fig. 6.** SEM images of ZnO (a,c) and ZnO/ZnS (b,d) nanofibers immersed in 66 mM phosphate buffer at pH 6.8 for 70 h.



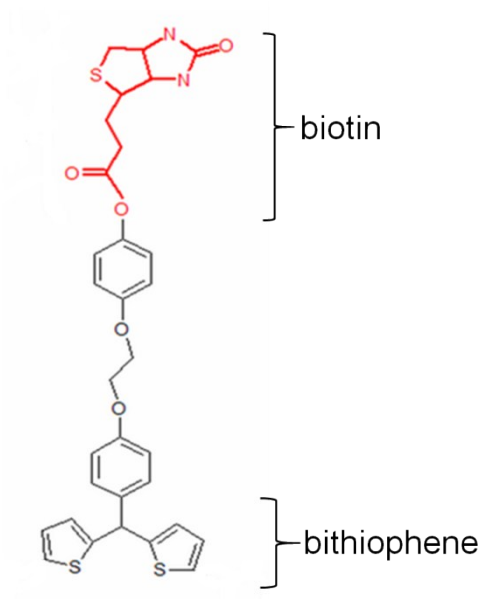
**Fig. 7.** SEM images of ZnO (a,c) and ZnO/ZnS (b,d) nanofibers immersed in 66 mM phosphate buffer at pH 8.0 for 70 h.



**Fig. 8.** The successive stages of ZnO nanofiber-based device construction.



**Fig. 9.** ZnO nanofiber-based device (a) before passivation process and (b,c) coated by SiN layer. (a) The active region with ZnO nanofibers covered with 0.3 mm wide copper tape and (b,c) after the passivation and further removing the mask.



**Fig. 10.** The structure of 2,2'-bithiophene and biotin complex.