

Supplementary Information for:
**Gas-dependent Photoresponse of SnS Nanoparticles Based
Photodetectors**

Fangyuan Lu,^a Juehan Yang,^a Renxiong Li,^a Nengjie Huo,^a Yongtao Li,^a Zhongming Wei^{*b} and Jingbo Li^{*a}

^aState Key Laboratory for Superlattices and Microstructures, Institute of Semiconductors, Chinese Academy of Sciences, P. O. Box 912, Beijing 100083, China. E-mail: jbli@semi.ac.cn.

^bNano-Science Center & Department of Chemistry, University of Copenhagen, Universitetspatken 5, DK-2100 Copenhagen, Denmark. E-mail: zmwei@semi.ac.cn.

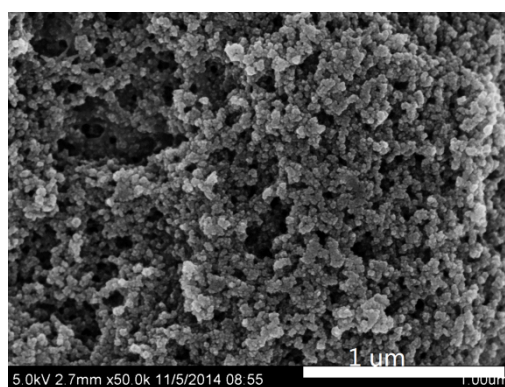


Fig. S1. The SEM images of as-synthesized SnS sample with large scale.

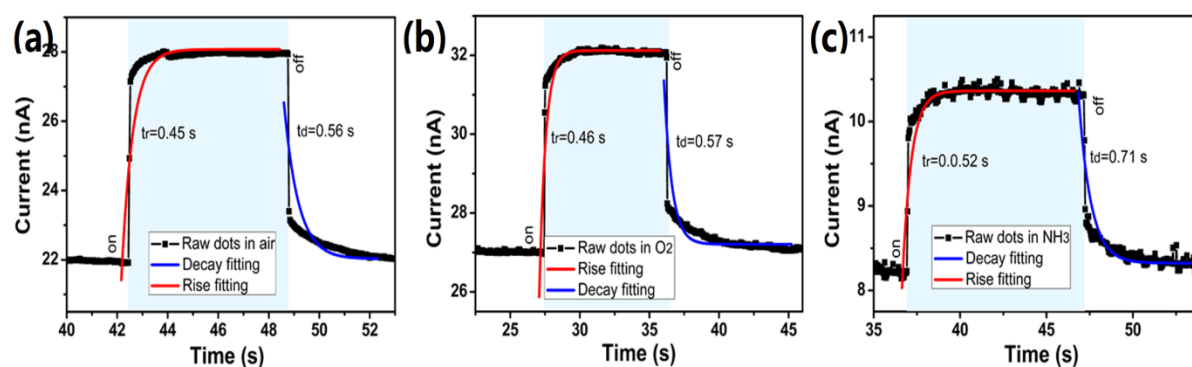


Fig. S2. The dynamic response times of SnS photodetector (a) in air, (b) in O₂ and (c) in NH₃.

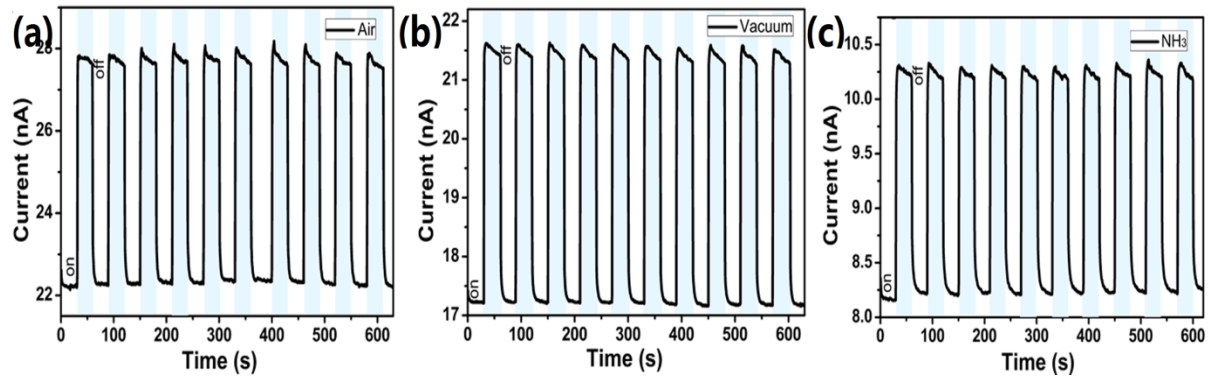


Fig. S3. The stable and repetitive switching characteristics of the SnS photodetector (a) in air, (b) in vacuum and (c) in NH₃.