## **Electronic Supplementary Information**

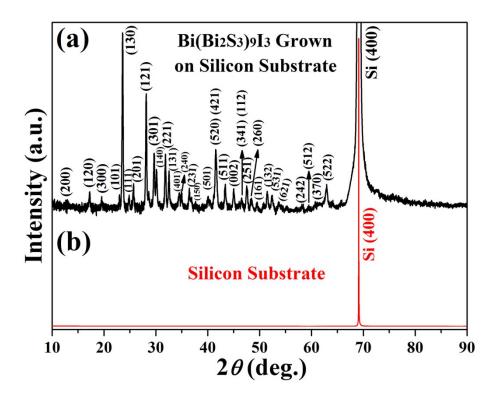
## Fabrication of $Bi_{19}S_{27}I_3$ nanorod cluster film for enhanced photodetection performance

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**Fig. S1** XRD patterns of (a) the prepared  $Bi_{19}S_{27}I_3$  thin film on silicon wafer and (b) the corresponding bare substrate.

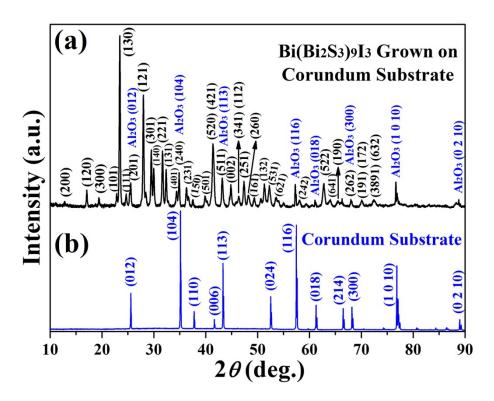


Fig. S2 XRD patterns of (a) the prepared  $Bi_{19}S_{27}I_3$  thin film on corundum wafer and (b) the corresponding bare substrate.

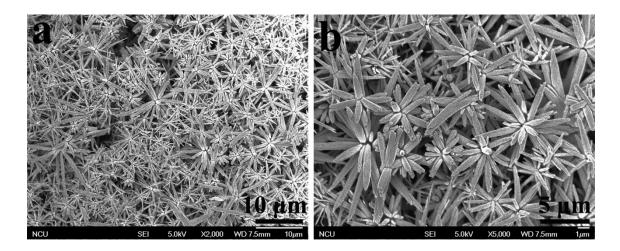


Fig. S3 (a) Low-magnification and (b) high-magnification SEM images of the prepared  $Bi_{19}S_{27}I_3$  thin film on silicon wafer.

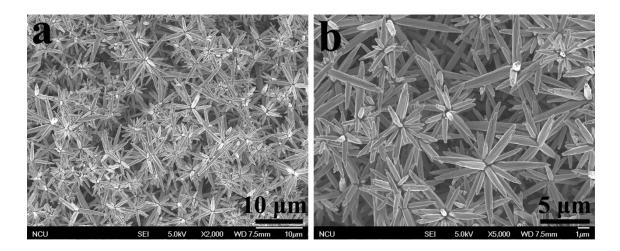


Fig. S4 (a) Low-magnification and (b) high-magnification SEM images of the prepared  $Bi_{19}S_{27}I_3$  thin film on corundum wafer.