

## **Supporting Information**

### **Ag Decorated Topological Surface State Protected Hierarchical Bi<sub>2</sub>Se<sub>3</sub> Nanoflakes for Enhanced Field Emission Property**

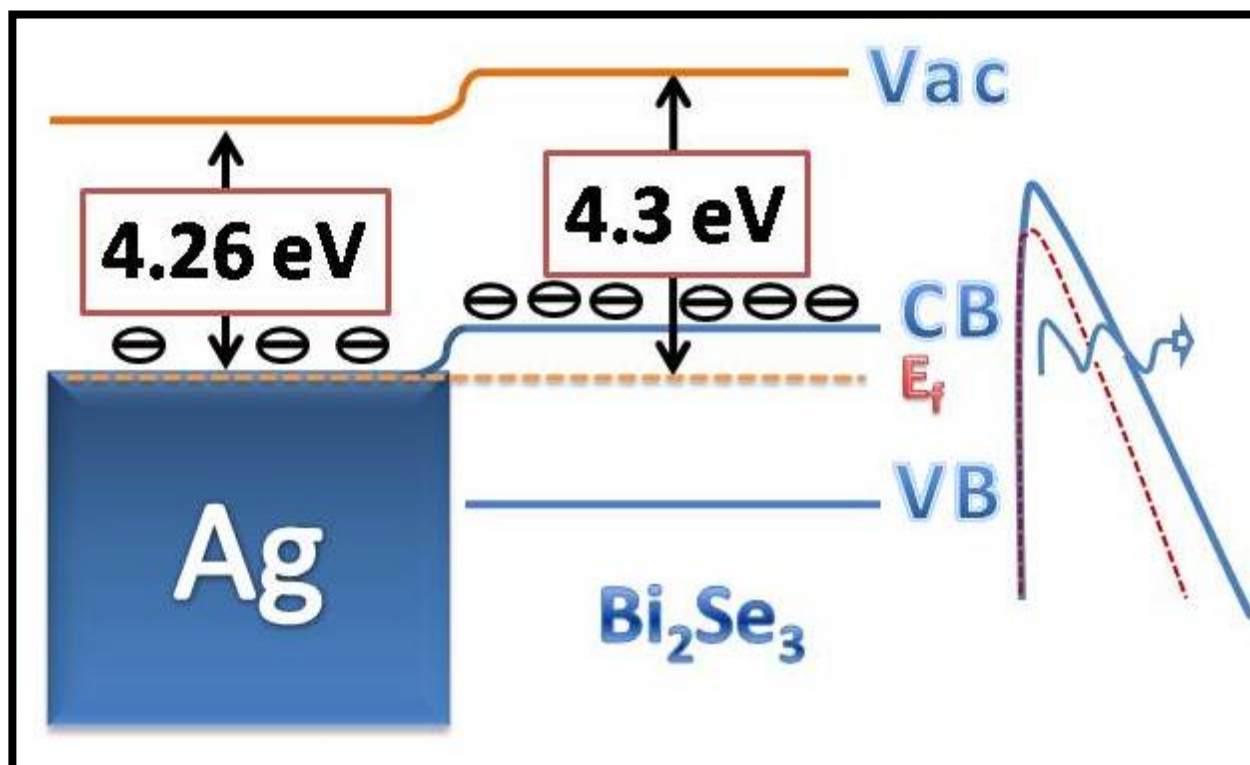
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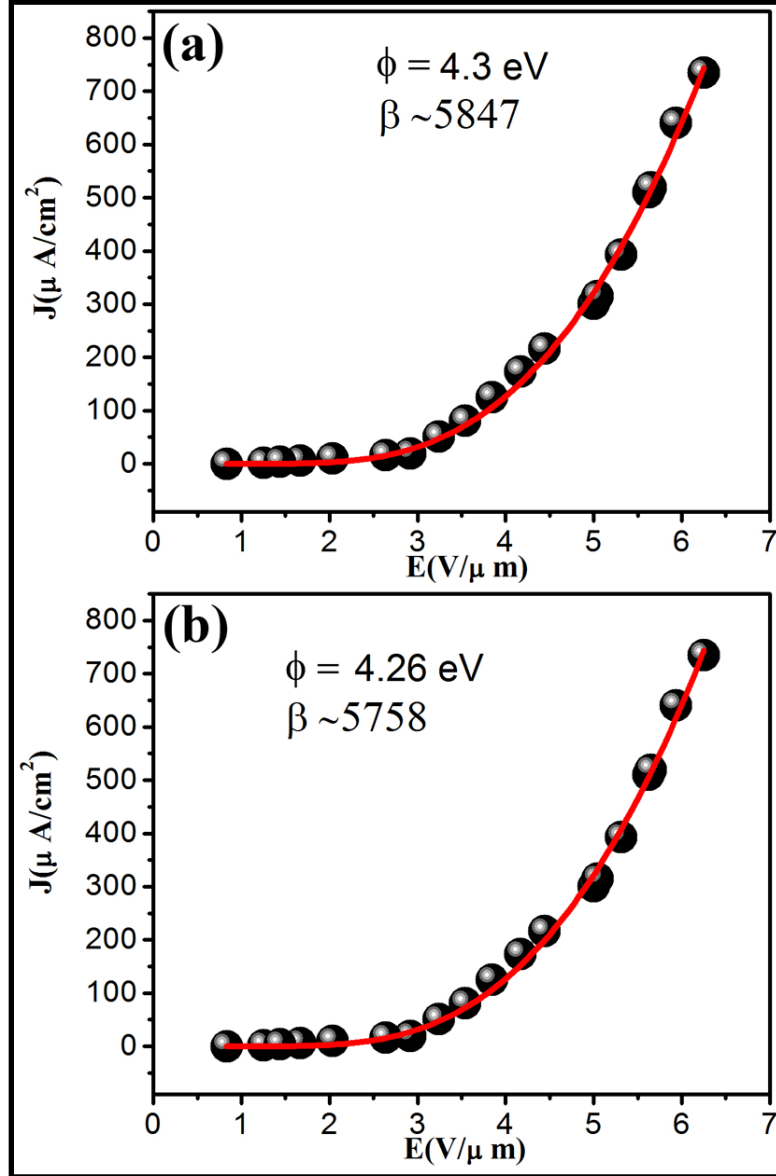
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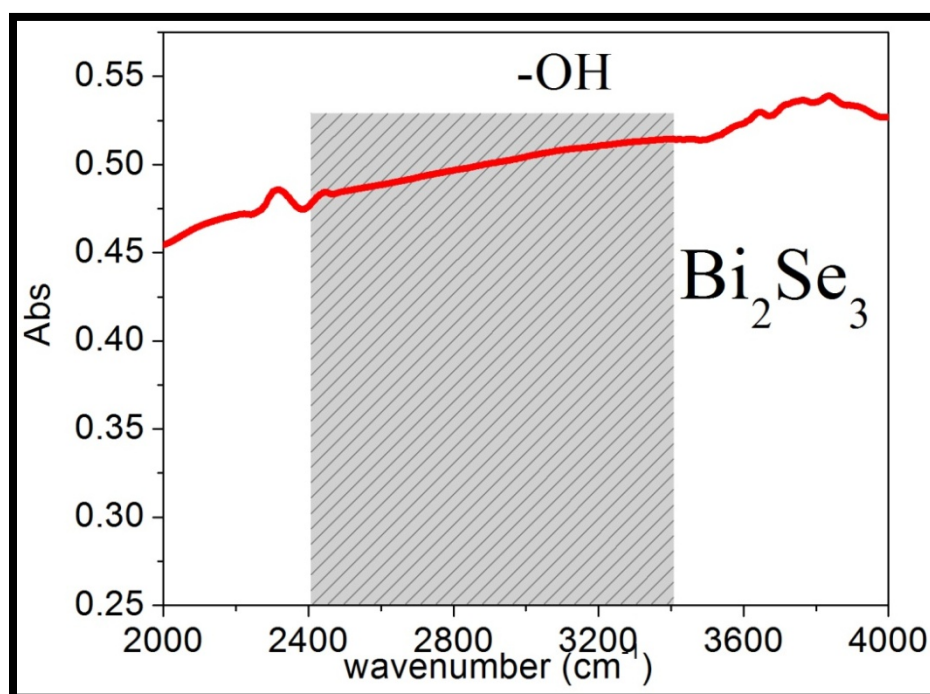
E-mail address: [kalyan\\_chattopadhyay@yahoo.com](mailto:kalyan_chattopadhyay@yahoo.com) (Kalyan Kumar Chattopadhyay).



**Figure S1.** A schematic of the band alignment at the junction between Ag (metal) and  $\text{Bi}_2\text{Se}_3$  (semiconductor), indicating carrier injection into the semiconductor



**Figure S2.** Plot of electric field vs current density and the same fitted by FN equation considering different work functions (a) 4.3 eV and (b) 4.26 eV; inset shows obtained enhancement factors



**Figure S3.** FT-IR spectrum of pure hierarchical Bi<sub>2</sub>Se<sub>3</sub> film showing no significance presence of -OH groups.