

**Supporting Information for**  
**Emerging Negative Differential Resistance (NDR) Effects and Novel**  
**Tunable Electronic Behaviors of the Broken-gap KAgSe/SiC<sub>2</sub> *van der***  
***Waals* Heterojunction**

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## Supplementary Figures

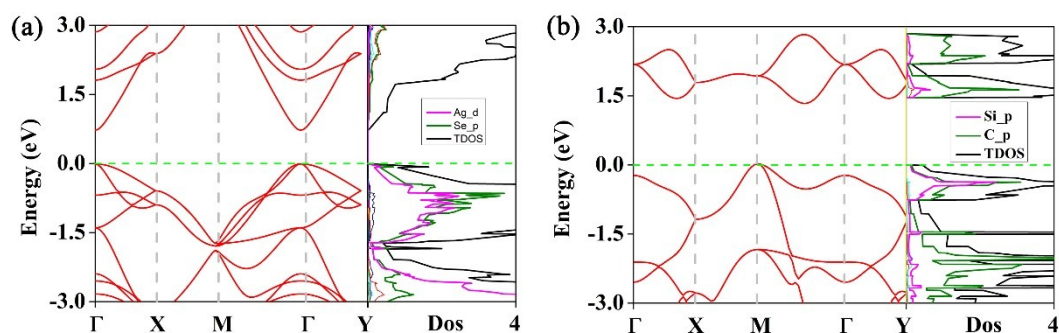


Figure S1. (color online) Band structures and PDos of (a) KAgSe and (b) SiC<sub>2</sub> at PBE level. In each panel, the Fermi level is set to zero.

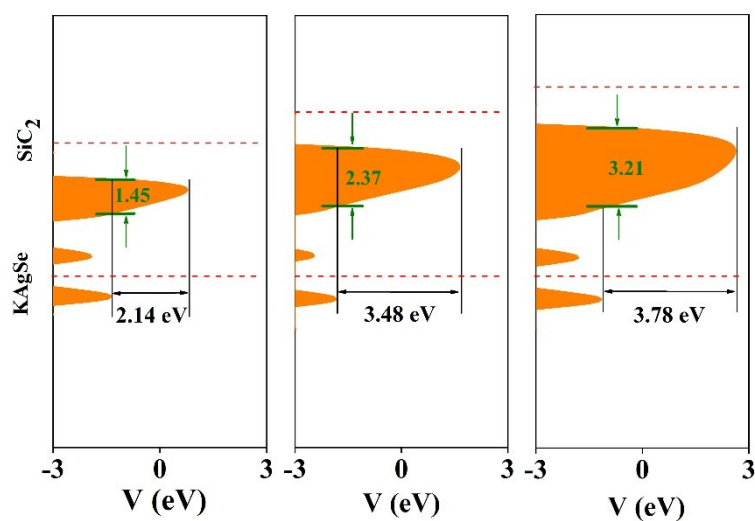


Figure S2. Electrostatic potential ( $V$ ) and potential barrier ( $\delta V$ ) at the different interfacial distances of 3.6 Å, 3.0 Å and 2.4 Å. The red horizontal dot dashed lines represent the position of the monolayer of KAgSe and SiC<sub>2</sub>.