Supporting Information

Observation of anomalous Hall effect in proximity coupled $Cr_2Ge_2Te_6$/Graphene heterostructures

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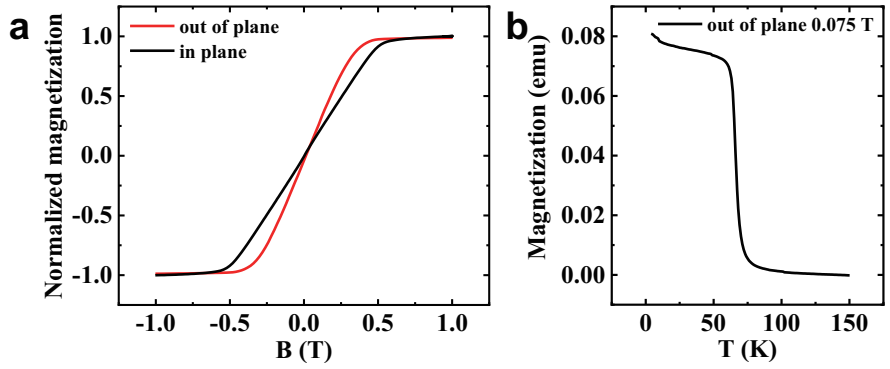

FIG. S1: **Magnetization characterizations of a bulk $Cr_2Ge_2Te_6$ crystal.(a)** Magnetization characterization by SQUID at 4K, showing that $Cr_2Ge_2Te_6$ has an out-of-plane easy axis. (b) Temperature-dependent magnetization characterization under a 0.075 T out-of-plane field, showing T_C 66 K by SQUID at 4 K.

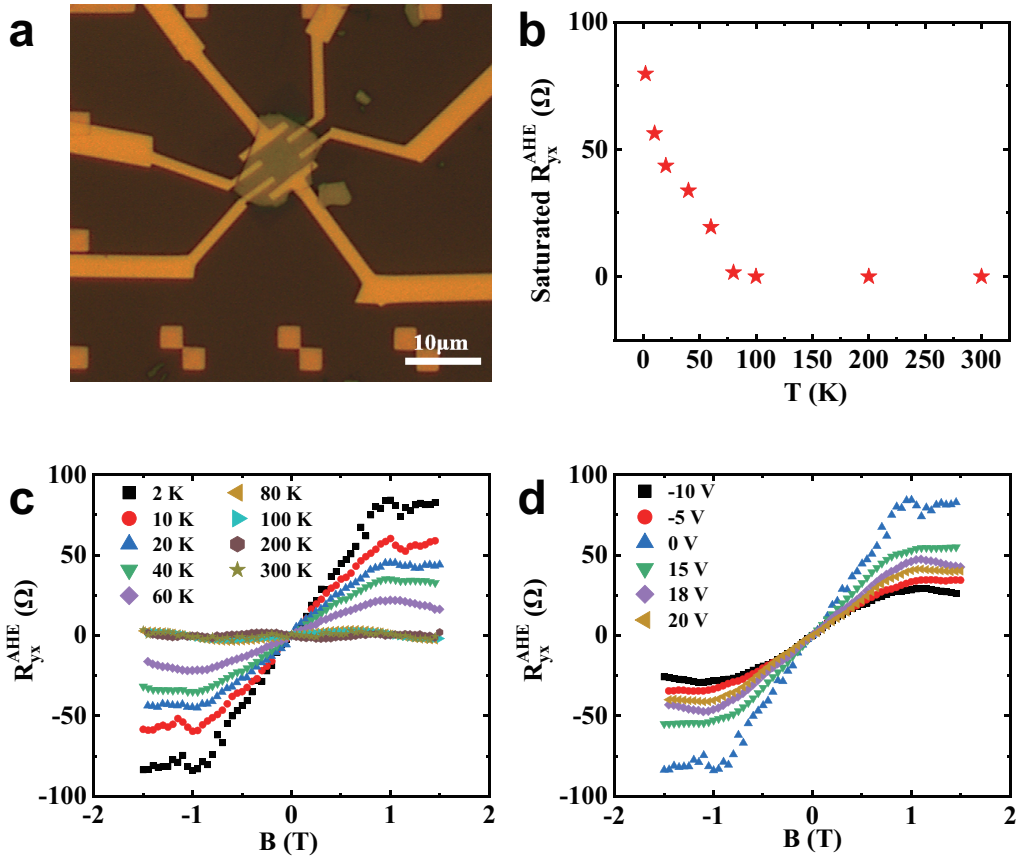

FIG. S2: **AHE resistance at different temperatures in device 2.** **(a)** Optical image of the device. **(b)** The temperature dependence of saturated anomalous Hall resistance of Graphene/CGT. **(c)** Anomalous Hall resistance of Graphene/CGT measured from 2 K to 300 K. **(d)** Anomalous Hall resistance of Graphene/CGT at different gate voltages.

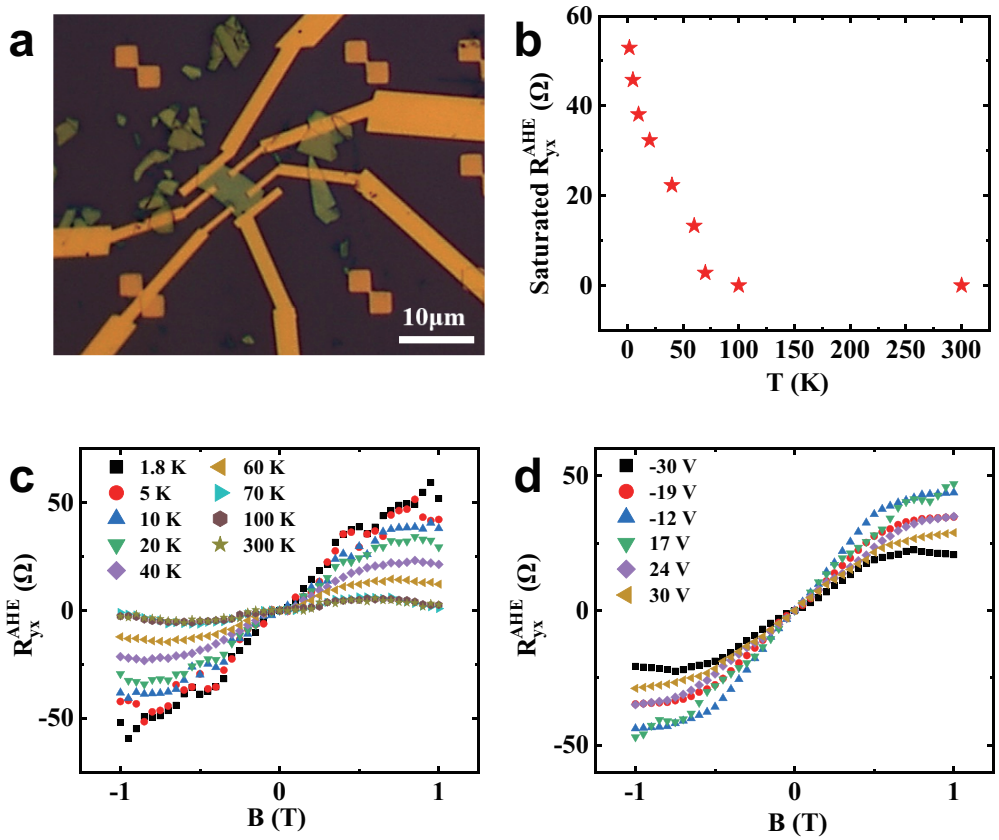

FIG. S3: **AHE resistance at different temperatures in device 3.** **(a)** Optical image of the device. **(b)** The temperature dependence of saturated anomalous Hall resistance of Graphene/CGT. **(c)** Anomalous Hall resistance of Graphene/CGT measured from 2 K to 300 K. **(d)** Anomalous Hall resistance of Graphene/CGT at different gate voltages.

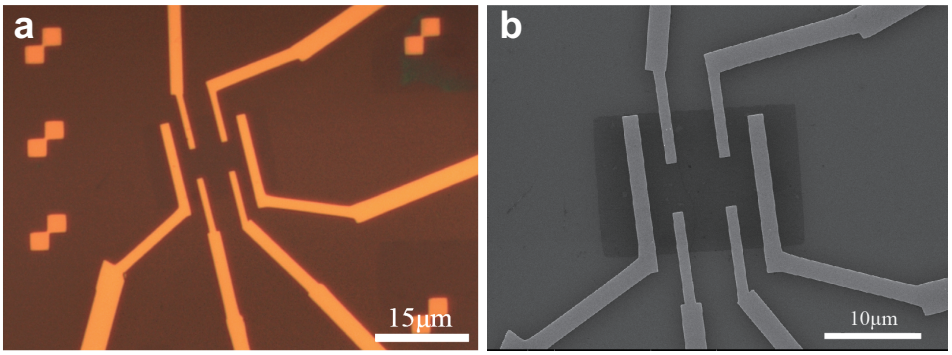

FIG. S4: **The graphene-only device.** **(a)** The optical image of the graphene-only device. **(b)** The SEM image of the graphene-only device.

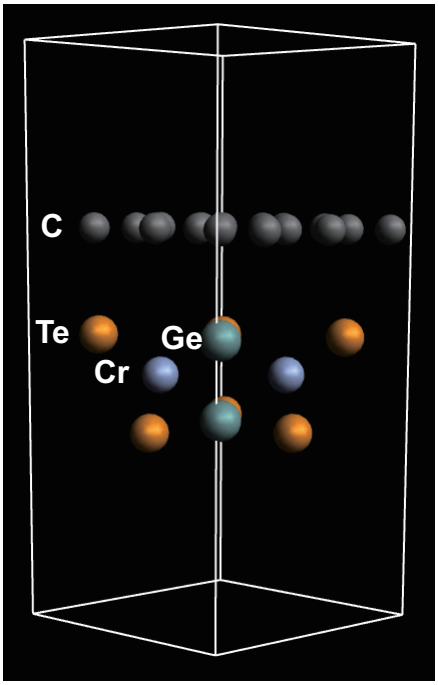

FIG. S5: **Atomic configuration for density functional calculations.**

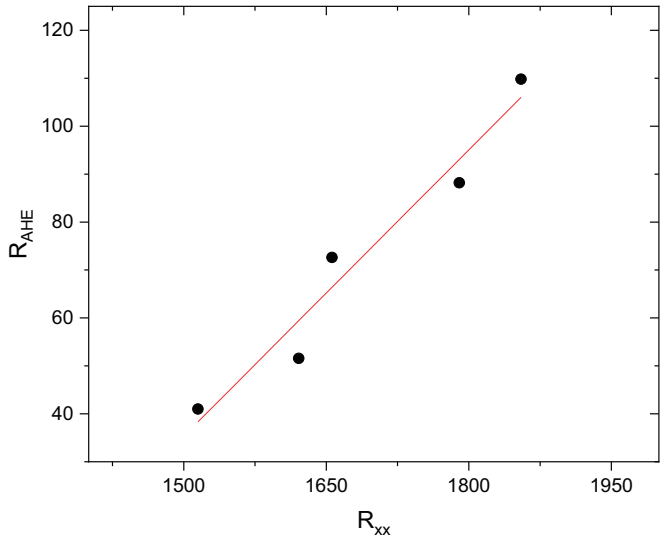

FIG. S6: **The relationship between the anomalous Hall resistance R_{AHE} and the longitudinal resistance R_{xx}. The red line is the linear fitting to the data.**