Supporting Information

Magnetotransport Spectroscopy of Electroburnt Graphene Nanojunctions

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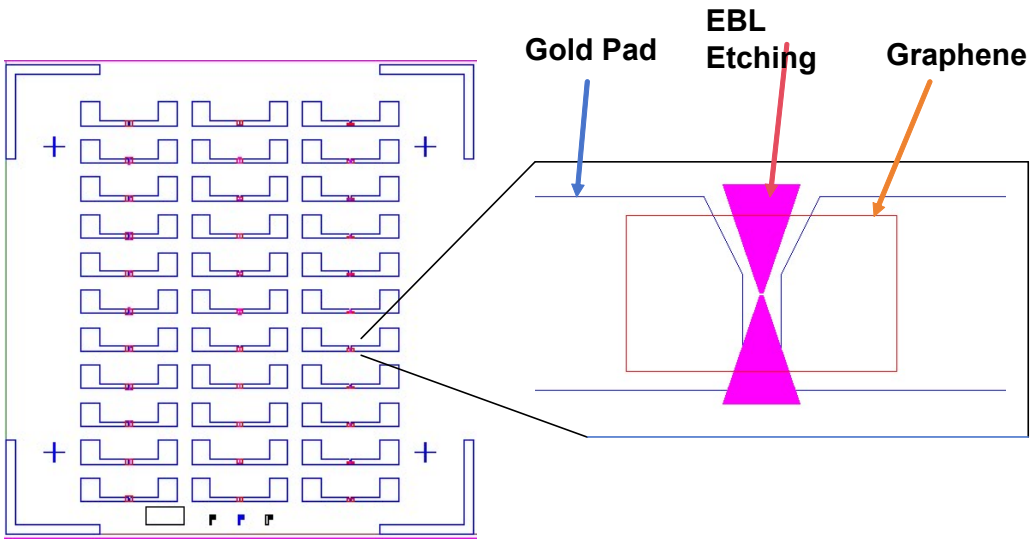
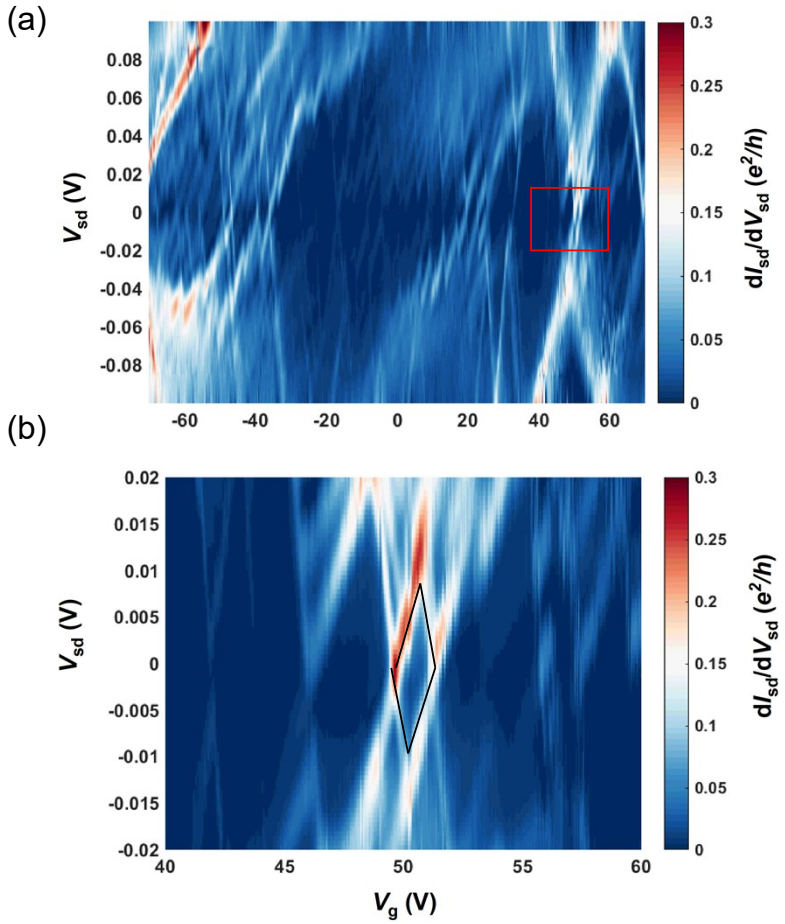


S1. Device design

Figure S1. The CAD design drawing of the device, The enlarged section shows the preparation scheme of graphene bands.



S2. Graphene nanoribbons in a partially broken state

Figure S2. (a) Differential conductance map of the divice in Figure 2d with V_g from -70 V to 70 V and V_{sd} from -0.1 V to 0.1V. (b) Differential conductance map with Vg from 40V to 60V and Vsd from -0.02 V to 0.02 V cut from (a). The Coulomb diamond with E_{add} = 8.5 meV is marked by the solid line. The diameter of the 'dot' is at least 100 nm. so it illustrates the situation that graphene nanoribbons in a partially broken state. There are also some articles [*Nano Lett.* **16**, 4210-4216 (2016); *Physical Review B.* **90** 115405 (2014)] that observed the similar transport characteristics which the

author defined as graphene constrictions.

S3. The change in conductance of the device C

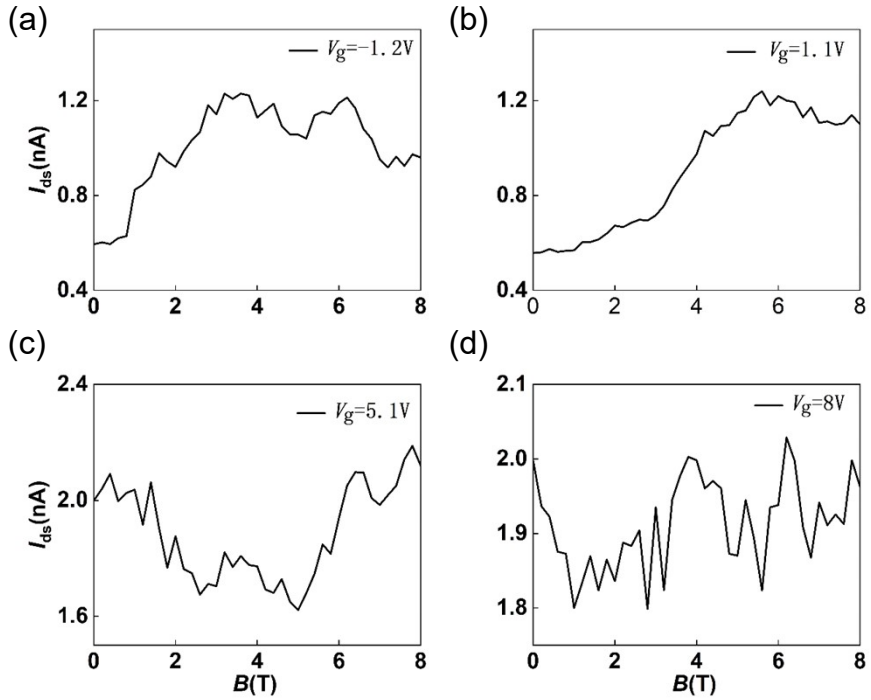


Figure S3. The raw data of conductance change of device C in a magnetic field showed in Figure 4(a), (b), (c) and (d).

S4. The change in conductance of the device A

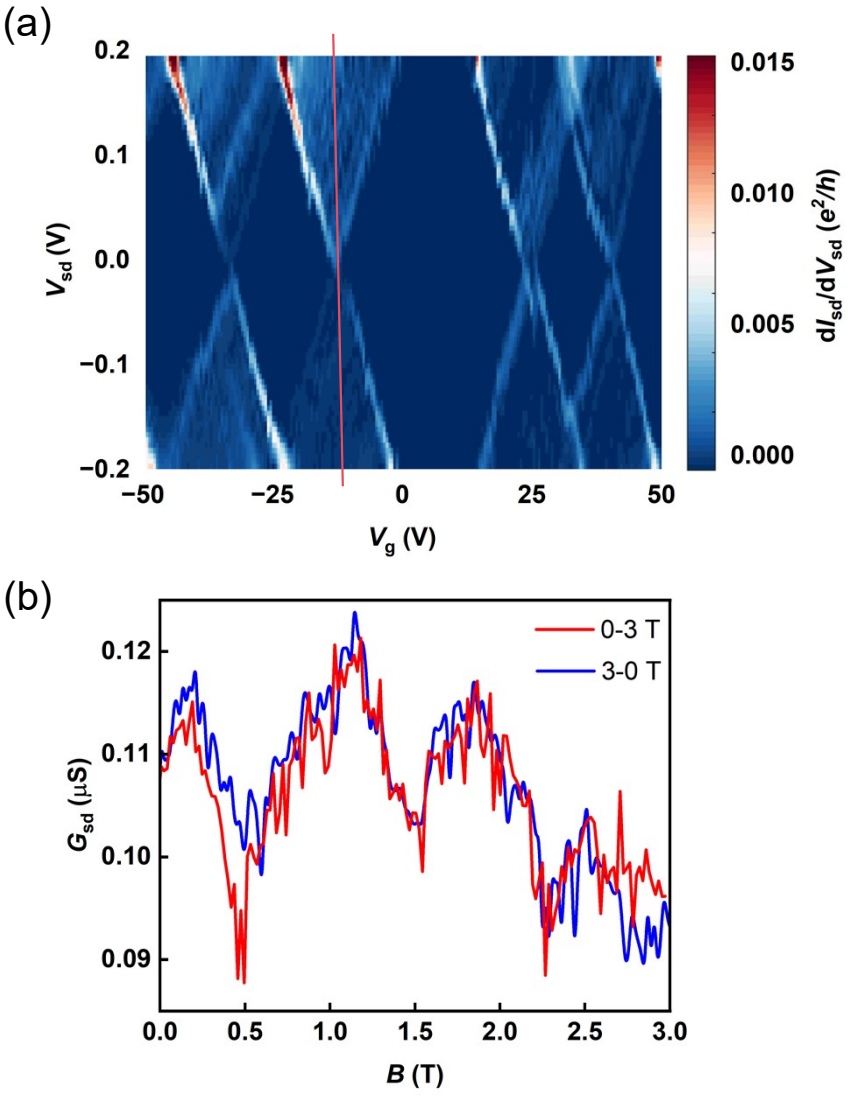


Figure S4. Conductance and applied vertical magnetic field relationship of device A. The bias voltage is 2 mV, the magnetic field changes from 0 to 3 T and then from 3 to 0 T, and the gate voltage is -10V, near the intersection point of diamond 1 and 2 in Figure 3a.