Electronic Supplementary Material (ESI) for RSC Advances.

Supplementary Information

Unusual renormalization group (RG) flow and temperature-dependent phase transition in strongly-insulating monolayer epitaxial graphene

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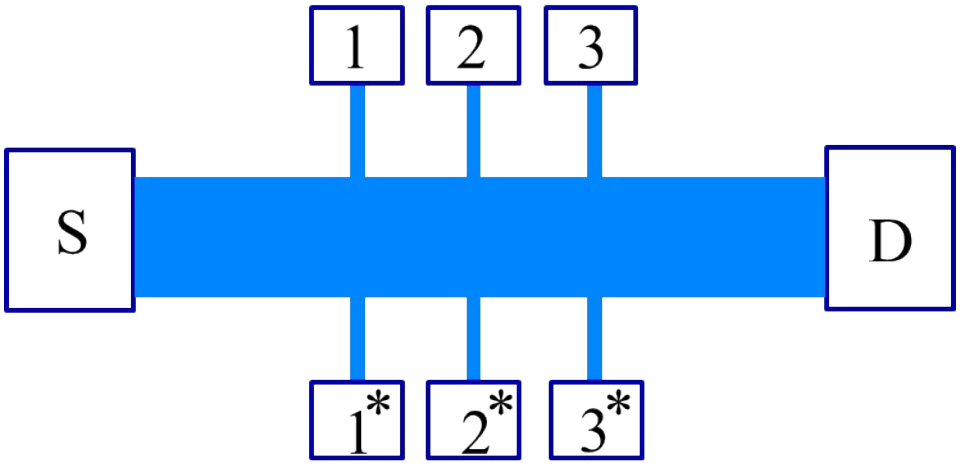

Figure S1 Schematic diagram showing a monolayer epitaxial graphene (EG) sample. S and D correspond to source and drain contacts. 1, 2, 3, 1*, 2* and 3* are voltage probes. Channel dimensions, which are the same for all devices studied, are L = 0.6 mm, W = 0.1 mm, with voltage contacts spaced 0.1 mm apart along both sides of the device.

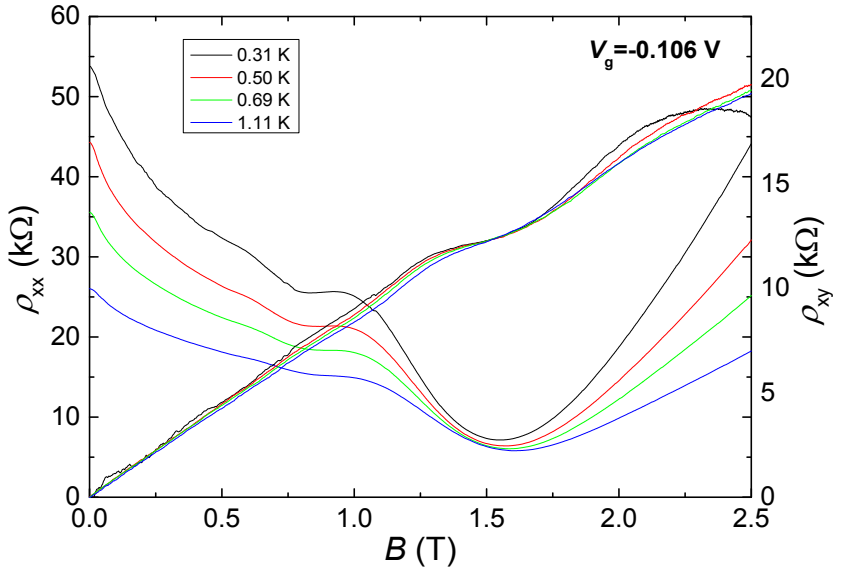

Figure 2 (a) $\rho_{xx}(B)$ and $\rho_{xy}(B)$ of a disordered GaAs-based electron system at various temperatures T [Ref. 1]. The device is always in the insulating phase in the sense that $\rho_{xx}(B)$ decreases with increasing T.

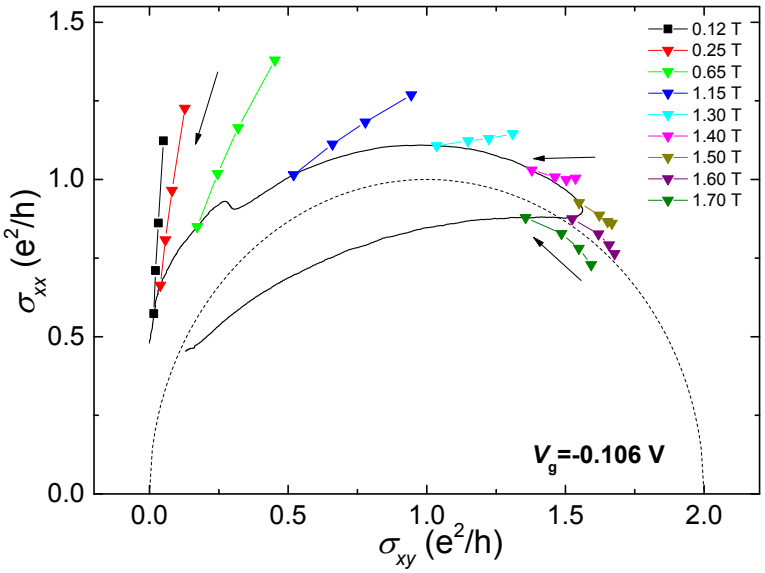

Figure 2 (b) The corresponding RG flow derived from the data in Fig. 2(a). No cusp-like RG flow is observed. The arrows indicate the flows from high temperature-data (1.11 K) to low-temperature data (0.31 K). The solid curve corresponds to the data taken at T=0.31 K. The dotted curve represents the theoretical expected semi-circle.

References

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2 S. H. Song, D. Shahar, D. C. Tsui, Y. H. Xie, and D. Monroe, *Phys. Rev. Lett.*, 1997, 78, 2200-2203