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Point Contacts to Graphene for Corbino Disk Geometry Devices

BIN CHENG, PENG WANG, LEI JING, CHUN NING LAU, MARC BOCKRATH, University of California, Riverside — A Corbino disk geometry raises new possibilities for observing novel phenomena for Dirac electrons in graphene [1]. For example, Recent theoretical work has suggested the possibility of observing a quantum relativistic Corbino effect in which the conductance of a graphene layer measured in a Corbino disk geometry shows magneto-oscillations related to to the number of flux quanta threading the area of the disk [2]. We will discuss a technique we have developed for making air-bridge contacts to graphene layers based on a multi-layer resist technique [3]. The air bridge enables a Corbino disk geometry in the absence of topside dielectric layers, potentially facilitating annealing techniques in conjunction with placement on, for example, BN substrates to enable high mobility devices. The latest transport results will be discussed.

[1] Zhao et al., Phys. Rev. Lett. 108, 106804 (2012).
[2] Rycerz, Phys. Rev. B 81, 121404?[U+0351]R (2010).
[3] Liu et al., Appl. Phys. Lett. 92, 203103 (2008).

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None

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