

Abstract Submitted
for the MAR12 Meeting of
The American Physical Society

Fabrication of suspended graphene heterojunctions for exploring the intrinsic transport of Dirac fermions PIRANAVAN KUMARAVADIVEL, XU DU, Stony Brook University — With linear energy dispersion and chirality, the quasiparticles in graphene differs from the conventional electrons in solid state systems in that the motions of the quasiparticles are governed by the Dirac Weyl equation. High quality of suspended graphene has made it possible to reach lower carrier densities and longer mean free paths and therefore has opened up the possibility of studying some of the unique, intrinsic properties of this Dirac electron system, which cannot otherwise be observed in conventional graphene devices on various substrates. To retain and exploit such properties of suspended graphene in heterojunction devices requires fabricating a contactless air top gate over the suspended graphene channel. Here we report on fabrication of such a device, which enable us to explore further, some interesting physics and transport of these Dirac fermions in graphene.

Piranavan Kumaravadivel
Stony Brook University

Date submitted: 10 Nov 2011

Electronic form version 1.4