

Abstract Submitted
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Quantum Hall effect on centimeter scale chemical vapor deposited graphene films TIAN SHEN, Department of Physics, Purdue University/National Institute of Standards and Technology, WEI WU, QINGKAI YU, Center for Advanced Materials and ECE, University of Houston, CURT RICHTER, RANDOLPH ELMQUIST, DAVID NEWELL, National Institute of Standards and Technology, YONG CHEN, Department of Physics, Purdue University — We report observations of well developed half integer quantum Hall effect on mono layer graphene films of 7 mm by 7 mm in size. The graphene films are grown by chemical vapor deposition on copper, then transferred to SiO₂/Si substrates, with typical carrier mobilities ≈ 4000 cm²/Vs. The large size graphene with excellent quality and electronic homogeneity demonstrated in this work is promising for graphene-based quantum Hall resistance standards, and can also facilitate a wide range of experiments on quantum Hall physics of graphene and practical applications exploiting the exceptional properties of graphene.

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