

Abstract Submitted
for the MAR10 Meeting of
The American Physical Society

Synthesis and charge transport properties of CVD graphene films obtained by precipitation and catalytic formation on metal substrates LEWIS GOMEZ, YI ZHANG, University of Southern California, Chemistry, ALEXANDER BADMAEV, University of Southern California, Physics, CHUAN WANG, University of Southern California, Electrical Engineering, ZHEN LI, University of Southern California, Physics, CHONGWU ZHOU, University of Southern California, Electrical Engineering — Chemical vapor deposition is considered a reliable approach to large-scale graphene, however the influence of aspects such as the graphene formation mechanism, carbon precursor and synthesis conditions, over the ultimate transport properties of the films remain to be explored. In this work we synthesized CVD graphene by catalytic formation and surface precipitation using methane and alcohol as carbon feedstock. AFM, SEM and TEM microscopy, as well as electron diffraction, XPS, Raman spectroscopy and electrical measurements were employed to characterize the films, showing a strong influence of the carbon source and formation mechanism on the uniformity and defect density of the synthesized CVD graphene, and hence, on their charge transport properties.

Lewis Gomez
University of Southern California

Date submitted: 01 Dec 2009

Electronic form version 1.4