

Abstract Submitted  
for the TSF12 Meeting of  
The American Physical Society

**Solution Processed Graphene for Utilization in Thin Films**

JONATHAN BELEW, Stephen F. Austin State University — Solution processing of graphene offers a method for increasing the purity and uniformity of the deposited thin films. Solubility parameters are useful in preparing dispersions and have been employed successfully with CNTs. Applying solubility parameters and solution processing techniques to graphene provides an avenue for both higher purity samples and more uniform thin films. The various families of solvents have different solubility parameters and careful selection of these parameters will help the quality of dispersions. Vacuum filtration and density centrifugation allow for filtering of the material, while annealing films is known to fix defects and improve structure. Through filtration, film deposition, and thermal annealing, graphene thin films of higher purity and uniformity will lead to graphene thin films that have the theoretical properties closer to ideal single crystal graphene. These properties have major applications in the fields of solar power and organic light emitting diodes as transparent electrodes and electron donor material.

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Date submitted: 19 Sep 2012

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