

Abstract Submitted
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Understanding Graphene Coatings: Characterization of Solvent Exfoliated Few-Layer Graphene by Raman Scattering JORGE CAMACHO¹, LESTER LAMPERT, WILLSON ARIFIN, ROBBY FLAIG, TIMOTHY RUE, TYLER KRISKO, JAMES HAMILTON, University of Wisconsin-Platteville — Graphene has unique properties like its ballistic transport at room temperature combined with chemical and mechanical stability and these properties can be extended to few-layer of graphene. Potential large-area applications that include transparent conductive coatings and fuel cell electrodes require dispersing graphene in a fluid phase. Graphene nano-platelets can be synthesized by dispersion and exfoliation of graphite in organic solvents such N-methyl-pyrrolidine (NMP) and cyclohexylpyrrolidone (CHP). However, liquid-phase exfoliation produces graphene with defects that can disrupt the electronic properties. One of the remaining questions is whether the defects created during synthesis can be minimized. We report a Raman spectroscopic study showing that defects in few-layer graphene produced by liquid-phase exfoliation of graphite can be controlled by the type or mixture of solvents used.

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