

Abstract Submitted
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Influence of Polymeric Residue on the Thermal Conductivity of Suspended Bi-Layer Graphene¹ MICHAEL PETTES², Department of Mechanical Engineering, The University of Texas at Austin, Austin, Tx, INSUN JO³, ZHEN YAO, Department of Physics, The University of Texas at Austin, Austin, Tx, LI SHI⁴, Department of Mechanical Engineering, The University of Texas at Austin, Austin, Tx — The thermal conductivity (κ) of two bi-layer graphene samples suspended between two micro-resistance thermometers was measured to be close to $600 \text{ W m}^{-1} \text{ K}^{-1}$ at room-temperature and exhibits a $\kappa \propto T^{1.5}$ behavior at temperature (T) between 50 – 125 K. The lower thermal conductivity than the basal plane values of graphite and the temperature dependence are attributed to scattering of phonons in the bi-layer graphene by a residual polymeric layer that was clearly observed by transmission electron microscopy.

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