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Thermal Conductivity of CVD grown graphene ANTON SIDOROV, DANIEL BENJAMIN, CHRISTOPHER FOY, ZHIGANG JIANG, Georgia Institute of Tecnology, QINGKAI YU, HELIN CAO, WEI WU, ZHIHONG LIU, JIMING BAO, STEVEN PEI, University of Houston, YONG CHEN, Purdue University
— When suspended, CVD grown graphene has a high thermal conductivity (k) of 2,500±1100 W/mK near 350 K. But for practical applications, graphene would be attached to a substrate. Previously it was reported that the CVD grown graphene supported on Si/SiO2 has a k value as low as 370+650/-320 W/mK in ambient. We find that the k of CVD grown graphene on glass varies in a range of 1100 - 2000 W/mK and depends on the growth parameters. The k of graphene is measured by a differential thermocouple technique and compared with that obtained by scanning thermal microscopy. Moreover, the samples grown in ambient pressure have shown higher k compared to the graphene grown at low pressure.

Anton Sidorov
Georgia Institute of Tecnology

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