

Abstract Submitted
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Electrical Transport Properties of Chemically Reduced Graphene Oxide Thin Films BALEESWARAIAH MUCHHARLA, Southern Illinois University Carbondale, NARAYANAN THARANGATTU NARAYANAN, KAUSHIK BALAKRISHNAN, PULICKEL AJAYAN, Rice University, SAIKAT TALAPATRA, Southern Illinois University Carbondale, SOUTHERN ILLINOIS UNIVERSITY CARBONDALE TEAM, RICE UNIVERSITY COLLABORATION — We will report on synthesis and electrical characterization of reduced graphene oxide (rGO) obtained from graphene oxide (GO) in ascorbic acid. Electrical transport on thin film devices made from these samples was investigated in a wide range (50 K to 400 K) of temperature. We find that the between the temperature range (150 K to 400 K) these samples show Arrhenius-like temperature dependence. At low temperatures, (50 K to 150 K) variable range hopping (VRH) transport of electrons in a two-dimensional electron system was observed for these samples. The effect of magnetic field on the electrical transport on these materials will presented and discussed.

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