

Abstract Submitted
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Non-saturating Linear Magnetoresistance in 3-dimensional Carbon Nanostructure LEI WANG, University of South Carolina, Columbia, MING YIN, FOUZI ARAMMASH, Benedict College, TIMIR DATTA, University of South Carolina, Columbia — Magneto-transport of carbon nanostructure with periodic spherical voids was investigated in magnetic field up to 9.4T in the temperatures range from 2K to 50K. With increase of magnetic field, transverse magnetoresistance crosses over from quadratic to a non-saturating linear dependence. Furthermore, longitudinal magnetoresistance which is negligible in most materials exhibits the same value as transverse magnetoresistance in our system. We demonstrate linear magnetoresistance (LMR) is proportional to the carrier mobility. Over the entire B-T phase region studied, MR data is observed to be a universal function of B/T. Orientation independent linear response is an attractive feature for applications.

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