

Abstract Submitted
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Universal Behavior of Linear Magnetoresistance in Carbon Inverse Opal LEI WANG, Physics & Astronomy, USC, Columbia, SC 29208, MING YIN, Benedict College, Physics/Engineering, Columbia, SC 29204, TIMIR DATTA, Physics & Astronomy, USC, Columbia, SC 29208 — Magneto-transport of carbon inverse opal structures was investigated in the magnetic field up to $B=9.4\text{K}$ at various temperatures from 2K to 50K. The transverse magnetoresistance displays linear dependence on the magnetic field instead of quadratic characteristic with the increase of the field. The linear magnetoresistance (LMR) is demonstrated to be proportional to the carrier mobility. Interesting, all the MR data as a function of B/T lies in a single curve, showing a universal behavior. Due to the peculiar structures of sample, the longitudinal magnetoresistance, which is usually very small, exhibits the same value as the transverse magnetoresistance, displaying the identical universal behavior.

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