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Title:Magneto-spectroscopy studies of graphite nanoplatelet films

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Abstract:The magneto-optical properties of graphite nanoplatelet films in the THz frequency range have been investigated. The room-temperature THz spectrum of graphite nanoplatelets shows a free carrier absorption at zero frequency with an electronic scattering rate of 175 cm⁻¹ (3.3 x 10¹³ rad/s) and plasma frequency of 1675 cm⁻¹. The lack of a major change in Drude plasma frequency down to 4.2 K implies that any band gaps in graphite nanoplatelets are less than 1 meV. The 300 K magneto-transmission contrast is as large as 60% near 1 THz at 10 T. The results are potentially useful for magnetic memory applications away from the dc limit. (C) 2012 Elsevier B.V. All rights reserved.

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