

438.

Accession number:13068137

Title:Terahertz time-domain spectroscopy characterization of vertically aligned carbon nanotube films

Authors:Katsounaros, A. (1); Mann, M. (2); Naftaly, M. (3); Rajab, K.Z. (1); Hao, Y. (1); Milne, W.I. (2)

Author affiliation:(1) Sch. of Electron. Eng. & Comput. Sci., Queen Mary Univ. of London, London, United Kingdom; (2) Eng. Dept., Cambridge Univ., Cambridge, United Kingdom; (3) Nat. Phys. Lab. (NPL), Teddington, United Kingdom

Source title:Carbon

Abbreviated source title:Carbon (UK)

Volume:50

Issue:3

Publication date:March 2012

Pages:939-42

Language:English

ISSN:0008-6223

CODEN:CRBNAH

Document type:Journal article (JA)

Publisher:Elsevier Science Ltd.

Country of publication:UK

Material Identity Number:AT35-2011-015

Abstract:Terahertz time-domain spectroscopy measurements were made for vertically aligned multi-walled carbon nanotube (VACNT) films. We obtained the frequency dependent complex permittivity and conductivity (on the assumption that permeability $\mu=1$) of several samples exhibiting Drude behaviour for lossy metals. The obtained material properties of VACNT films provide information for potential microwave and terahertz applications. [All rights reserved Elsevier].

Number of references:12

Inspec controlled terms:carbon nanotubes - electrical conductivity - permeability - permittivity - thin films

Uncontrolled terms:terahertz time-domain spectroscopy - vertically aligned carbon nanotube films - frequency dependent complex permittivity - electrical conductivity - permeability - Drude behaviour - C

Inspec classification codes:A7720 Dielectric permittivity - A6148 Structure of fullerenes and fullerene-related materials - A6855 Thin film growth, structure, and epitaxy - A7220F Low-field transport and mobility; piezoresistance (semiconductors/insulators)

Chemical indexing:C/el

Treatment:Experimental (EXP)

Discipline:Physics (A)

DOI:10.1016/j.carbon.2011.09.056

Database:Inspec

IPC Code:B82B1/00Copyright 2012, The Institution of Engineering and Technology