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标题: Electrical and optical properties of doped helical polyacetylene graphite films in terahertz frequency range
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来源出版物: SYNTHETIC METALS 卷: 162 期: 21-22 页: 1846-1851 DOI: 10.1016/j.synthmet.2012.08.004 出版年: DEC 2012
在 Web of Science 中的被引频次: 0
被引频次合计: 0
引用的参考文献数: 18
摘要: We report on electrical and optical characteristics such as power absorption, index of refraction, and conductivity of new form of the model conjugated polymer-polyacetylene (PA)-helical PA graphite films (h-PA) in the 0.1-2.5 THz spectral range. The results were obtained using the transmission THz time-domain spectroscopy. The frequency dependencies of the electrical and optical characteristics can be reasonably well fitted by the Drude model, which gives a plasma frequency of about similar to 124THz and a charge carrier scattering time similar to 30 fs, which is less by an order of magnitude than that of crystalline materials. The obtained results demonstrate that doped h-PA graphite films retain metallic behavior in the THz spectral range even at ambient conditions contrary to conventional doped PA films. 
入藏号: WOS:000311917900011
语种: English
文献类型: Article
作者关键词: THz time-domain spectroscopy; Polyacetylene; Power absorption; Refractive index; Conductivity
KeyWords Plus: TIME-DOMAIN SPECTROSCOPY; POLYPYRROLE; IODINE
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出版商: ELSEVIER SCIENCE SA
出版商地址: PO BOX 564, 1001 LAUSANNE, SWITZERLAND
Web of Science 类别: Materials Science, Multidisciplinary; Physics, Condensed Matter; Polymer Science
研究方向: Materials Science; Physics; Polymer Science
IDS 号: 048MZ
ISSN: 0379-6779
29 字符的来源出版物名称缩写: SYNTHETIC MET
ISO 来源出版物缩写: Synth. Met.
来源出版物页码计数: 6