

76

标题: Manipulating polarization states of terahertz radiation using metamaterials

作者: Cong, LQ (Cong, Longqing); Cao, W (Cao, Wei); Tian, Z (Tian, Zhen); Gu, JQ (Gu, Jianqiang); Han, JG (Han, Jianguang); Zhang, WL (Zhang, Weili)

来源出版物: NEW JOURNAL OF PHYSICS 卷: 14 文献号: 115013 DOI: 10.1088/1367-2630/14/11/115013 出版年: NOV 21 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: 25

摘要: We present a double-ring-chain metamaterial that enables efficient polarization conversion of terahertz waves. The experimental results and numerical simulations reveal that the linear-to-linear polarization rotation and linear-to-elliptic polarization transformation are simply accomplished by altering the dimensional parameters of the metamaterial unit cells. The polarization state conversion is found to be critically related to the resonant properties of the long bars and the rings in the unit geometries and is well described by the Jones matrix. This approach promises both passive and active polarization conversion of terahertz radiation using planar metamaterials.

入藏号: WOS:000311581800002

语种: English

文献类型: Article

KeyWords Plus: TIME-DOMAIN SPECTROSCOPY; OPTICAL-ACTIVITY; WAVE PLATES; FREQUENCIES

地址: [Cong, Longqing; Tian, Zhen; Gu, Jianqiang; Han, Jianguang; Zhang, Weili] Tianjin Univ, Ctr Terahertz Waves, Tianjin 300072, Peoples R China

[Cong, Longqing; Tian, Zhen; Gu, Jianqiang; Han, Jianguang; Zhang, Weili] Tianjin Univ, Coll Precis Instrument & Optoelect Engn, Tianjin 300072, Peoples R China

[Cao, Wei; Zhang, Weili] Oklahoma State Univ, Sch Elect & Comp Engn, Stillwater, OK 74078 USA

通讯作者地址: Han, JG (通讯作者), Tianjin Univ, Ctr Terahertz Waves, Tianjin 300072, Peoples R China.

电子邮件地址: jiaghan@tju.edu.cn; weili.zhang@okstate.edu

出版商: IOP PUBLISHING LTD

出版商地址: TEMPLE CIRCUS, TEMPLE WAY, BRISTOL BS1 6BE, ENGLAND

Web of Science 类别: Physics, Multidisciplinary

研究方向: Physics

IDS 号: 043WQ

ISSN: 1367-2630

29 字符的来源出版物名称缩写: NEW J PHYS

ISO 来源出版物缩写: New J. Phys.

来源出版物页码计数: 11