378.
标题: Artificial Kerr-type medium using metamaterials
作者: Yin, XG (Yin, Xiaogang); Feng, TH (Feng, Tianhua); Liang, ZX (Liang, Zixian); Li, JS (Li, Jensen)
来源出版物: OPTICS EXPRESS 卷: 20 期: 8 页: 8543-8550 出版年: APR 9 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: 38
摘要: We investigated an artificial Kerr-medium realized by actuated THz metamaterials. Instead of directly applying E-field inside the medium, we use micromechanical systems actuated by voltage to tune the phase shift. We established that the combined system can have a relationship between the phase shift and the voltage similar to a Kerr cell. A metamaterial Kerr-cell is designed to modulate the transmission phase difference by 0.99 degrees/V-2 which is much stronger than natural Kerr crystals. It is attributed to the mechanical tunability of metamaterials with high indices in two orthogonal directions. A Lorentzian model is used in explaining the artificial Kerr cell. (C) 2012 Optical Society of America
入藏号: WOS:000302855500030
语种: English
文献类型: Article
KeyWords Plus: TERAHERTZ FREQUENCIES; NEGATIVE-INDEX; MAGNETIC METAMATERIALS; CLOAK; PHASE; LIGHT
地址: [Yin, Xiaogang; Li, Jensen] City Univ Hong Kong, State Key Lab Millimeter Waves, Kowloon, Hong Kong, Peoples R China
[Feng, Tianhua; Liang, Zixian; Li, Jensen] City Univ Hong Kong, Dept Phys & Mat Sci, Kowloon, Hong Kong, Peoples R China
[Yin, Xiaogang] Nanjing Univ Aeronaut & Astronaut, Coll Sci, Nanjing 210016, Jiangsu, Peoples R China
通讯作者地址: Yin, XG (通讯作者),City Univ Hong Kong, State Key Lab Millimeter Waves, Tat Chee Ave, Kowloon, Hong Kong, Peoples R China
电子邮件地址: jensen.li@cityu.edu.hk
出版商: OPTICAL SOC AMER
出版商地址: 2010 MASSACHUSETTS AVE NW, WASHINGTON, DC 20036 USA
Web of Science 分类: Optics
学科类别: Optics
IDS 号: 926TT
ISSN: 1094-4087
29 字符的来源出版物名称缩写: OPT EXPRESS
ISO 来源出版物缩写: Opt. Express
来源出版物页码计数: 8