162
标题: On the Miniaturization of Semiplanar Chiral Metamaterial Structures
作者: Zarifi, D (Zarifi, Davoud); Soleimani, M (Soleimani, Mohammad); Nayyeri, V (Nayyeri, Vahid); Rashed-Mohassel, J (Rashed-Mohassel, Jalil)
来源出版物: IEEE TRANSACTIONS ON ANTENNAS AND PROPAGATION 卷: 60 期: 12 页: 5768-5776 DOI: 10.1109/TAP.2012.2214015 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: 33
摘要: In this paper, miniaturized chiral metamaterial (CMM) structures with smaller unit cells or lower resonant frequencies are investigated. In achieving this purpose, three general ideas are proposed: using dendritic fractal geometry, using some wideband antenna designs, and utilizing echelon meandered structures. Based on these methods, some miniaturized CMM structures with giant optical activity and negative refraction indices are proposed for the right and left circularly polarized waves, and their effective parameters are retrieved. The proposed structures possess smaller unit cell sizes and some of them exhibit considerable optical activity compared with similar CMM designs; thus, they can be used as ultrathin microwave polarization rotators.
入藏号: WOS:000312032800027
语种: English
文献类型: Article
作者关键词: Chiral metamaterials (CMMs); dendritic fractal geometry; echelon meandered geometries; miniaturization; negative refractive index; optical activity; wideband antenna designs
KeyWords Plus: NEGATIVE INDEX; PERFORMANCE; TERAHERTZ
地址: [Zarifi, Davoud; Soleimani, Mohammad; Nayyeri, Vahid] IUST, Antenna & Microwave Res Lab, Sch Elect Engn, Tehran 1684613114, Iran
[Rashed-Mohassel, Jalil] Univ Tehran, Ctr Excellence Appl Electromagnet Syst, Sch Elect & Comp Engn, Tehran 14399, Iran
通讯作者地址: Zarifi, D (通讯作者),IUST, Antenna & Microwave Res Lab, Sch Elect Engn, Tehran 1684613114, Iran.
电子邮件地址: zarifi@iust.ac.ir; soleimani@iust.ac.ir; nayyeri@iust.ac.ir; jrashed@ut.ac.ir
出版商: IEEE-INST ELECTRICAL ELECTRONICS ENGINEERS INC
出版商地址: 445 HOES LANE, PISCATAWAY, NJ 08855-4141 USA
Web of Science 类别: Engineering, Electrical & Electronic; Telecommunications
研究方向: Engineering; Telecommunications
IDS 号: 050DL
ISSN: 0018-926X
29 字符的来源出版物名称缩写: IEEE T ANTENN PROPAG
ISO 来源出版物缩写: IEEE Trans. Antennas Propag.
来源出版物页码计数: 9