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标题: Design and simulation of a single-sided left-handed material in THz regime
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摘要: By retrieving the constitutive effective parameters of bifilar spiral structure, it is proved that its permittivity and permeability are negative at different frequencies. With the electromagnetic waves incidence in the direction either perpendicular or parallel to the surface of bifilar spiral structure, it is found that the causes of negative permittivity are the same. Previously the investigation of single-sided left-handed materials was limited to microwave band. Through modifying bifilar spiral metamaterials, we design a new single-sided left-handed material in the terahertz regime and the design principle is explained with an LC equivalent circuit. The left-handed material generally consists of electric and magnetic resonators etched on each side of the dielectric substrate respectively Compared with these composite structures, the new single-sided left-handed material has the advantages of low loss, simple structure and easy operating
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