

Construction of Chiral Metamaterial with a Helix Array

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Here we report the designing of chiral metamaterial with metallic helix array. The effective electric and magnetic dipoles, which originate from the induced surface electric current upon illumination of incident light, are collinear at the resonant frequency. Consequently, for the circularly polarized incident light, negative refractive index is realized. Our design provides a unique approach to tune the optical properties by assembling helices, and demonstrates a different approach in exploring three-dimensional chiral metamaterial.

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