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Title:Giant optical activity and negative refractive index in the terahertz region using complementary chiral metamaterials

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Abstract:A complementary bi-layer cross-wire chiral metamaterial (MM) is proposed and studied numerically in this paper. It exhibits giant optical activity and negative refractive index in the terahertz region. We present a detailed parametric study of the optical activity and negative refractive index of the complementary chiral MMs (CCMMs) based on its structural parameters. The presented design of terahertz CCMMs offers flexibility in the investigation of their novel electromagnetic properties and important terahertz device applications. © 2012 The Royal Swedish Academy of Sciences.

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