344
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Title:Terahertz metamaterials based on arrays of rolled-up gold/(In)GaAs tubes
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Abstract:We investigate metamaterials based on arrays of rolled-up gold/(In)GaAs microrolls. By finite-integration-technique simulations we show that these arrays interact resonantly with the magnetic component of an electromagnetic field and exhibit a negative effective permeability at terahertz frequencies. We find a strong dependence of the resonance frequency on small variations in the winding number n. We show that this dependence can be removed, if desired, by applying an additional slit into the metal layer of the tube.
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