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Title:Polarization dependent state to polarization independent state change in THz metamaterials
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Abstract:We experimentally demonstrated a polarization dependent state to polarization independent state change in terahertz (THz) metamaterials. This is accomplished by reconfiguring the lattice structure of metamaterials from 2-fold to 4-fold rotational symmetry by using micromachined actuators. In experiment, it measures resonance frequency shift of 25.8 and 12.1 for TE and TM polarized incidence, respectively. Furthermore, single-band to dual-band switching is also demonstrated. Compared with the previous reported tunable metamaterials, lattice reconfiguration promises not only large tuning range but also changing of polarization dependent states, which can be used in photonic devices such as sensors, optical switches, and filters.
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