426. Title:Dual-band terahertz metamaterial absorber with polarization insensitivity and wide incident angle

Authors:He, X.-J. (1); Wang, Y. (1); Wang, J.-M. (1); Gui, T.-L. (1); Wu, Q. (2)

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Abstract:This paper presents the design, simulation and measurement of a dual-band terahertz metamaterial absorber with polarization-insensitivity and wide incident angle. The unit cell of the metamaterial consists of top resonator structures and low metal- lic ground plane, separated by an isolation material spacer to realize both electric and magnetic resonances. The physical mechanism of dual-band absorption and the sensitivity to the polarization direction and incident direction of the EM wave are theoretically investigated by simulating the x-component and normal component electric field distribution, current distribution on ERRs and metallic ground plane, and distribution of power flow and loss at the resonance frequencies as well as different modes EM waves, based the FDTD calculated method, respectively. The results show that the absorber is not only correctly coupling to the incident electric field and magnetic field, but also can trap the input power into specific positions of the devices and absorb it, besides insensitivity to the polarized angle and incident angle. Moreover, the experiment demonstrates that the absorber achieves two strong absorptions of 82.8% and 86.8% near 1.724 and 3.557 THz.