Research data for

Temperature-Controlled Asymmetric Transmission of Electromagnetic Waves

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The corresponding manuscript contains all information required to reproduce the simulated and experimental results that it contains. Here, the simulated and experimental results are given by **ResearchData_ThermalAsymTrans.xlsx**.

Sheet Fig2: Simulated electromagnetic properties of the metamaterial at room temperature. (b) Co- and cross-polarized spectral response $|T_{xx}|$, $|T_{xy}|$, $|T_{yx}|$, and $|T_{yy}|$ of the metamaterial, where T_{ij} represents the transmission coefficient describing *i*-polarized transmitted waves resulting from *j*-polarized illumination of the metamaterial's front. (c) Asymmetric transmission for linearly and circularly polarized incident waves, where '-' and '+' corresponds to the left- and right-handed circularly polarized waves. (d) Polarization ellipse of the transmitted wave at 1.1 THz for *x*-polarized illumination of the metamaterial's front.

Sheet Fig3: Simulated frequency dependence of co- and cross-polarized transmission amplitudes for *x*- and *y*-polarized waves incident on the metamaterial's front with VO_2 conductivity ranging from 10 S/m to 200000 S/m. (a), (b), (c), and (d) correspond to $|T_{xx}|$, $|T_{yx}|$, $|T_{xy}|$, and $|T_{yy}|$ respectively. (e) Frequency dependence of the asymmetric transmission parameter for linearly polarized waves, and (f) transmitted polarization state at 1.1 THz for incident *x*-polarization.

Sheet Fig4: Measured frequency dependence of co- and cross-polarized transmission amplitudes for *x*- and *y*-polarized waves incident on the metamaterial's front at temperatures ranging from 23℃ to 87℃. (a), (b), (c), and (d) correspond to $|T_{xx}|$, $|T_{yx}|$, $|T_{xy}|$, and $|T_{yy}|$ respectively. (e) Frequency dependence of the asymmetric transmission parameter for linearly polarized waves, and (f) transmitted polarization state at 1.15 THz for illumination with *x*-polarized waves.