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Title:Extremely thin metamaterial as slab waveguide at terahertz frequencies
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Abstract:We investigate the waveguiding properties of a planar metamaterial slab using terahertz time-domain attenuated total reflection spectroscopy. The enhancement of evanescent waves is observed for transverse electric and transverse magnetic excitation and is caused by resonant excitation of waveguide modes in the slab. Our calculation describes the experimental results and justifies the extremely small effective thickness. We also studied the dispersion relations of the waveguide modes of the slab by theoretical calculation.
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