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Title: Polarization insensitive, broadband terahertz metamaterial absorber
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Abstract: We present the simulation, implementation, and measurement of a polarization insensitive broadband resonant terahertz metamaterial absorber. By stacking metal-insulator layers with differing structural dimensions, three closely positioned resonant peaks are merged into one broadband absorption spectrum. Greater than 60% absorption is obtained across a frequency range of 1: 86 THz where the central resonance frequency is 5 THz. The FWHM of the device is 48%, which is two and half times greater than the FWHM of a single layer structure. Such metamaterials are promising candidates as absorbing elements for bolometric terahertz imaging.