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Title:Mid-infrared artificial magnetism directly from magnetic field coupling
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Abstract:Here we develop submicron L-shaped magnetic resonators with four-fold rotational symmetry to ease the burden of the orientation issue, and demonstrate a compelling artificial magnetic response up to 44.7 THz (wavelength 6.7 um) along with the properties of scalability and broad bandwidth directly from magnetic field coupling. In addition, the stored electromagnetic energy is highly localized inside the resonators, resulting in a significant nonlinear enhancement to promise micro-quantitative analysis. We suggest that the artificial magnetism demonstrated at mid-infrared ranges will radically impact the field of infrared optics, biological and security imaging, and chemical sensing.
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