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标题: Microwave and THz sensing using slab-pair-based metamaterials
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摘要: In this work the sensing capability of an artificial magnetic metamaterial based on pairs of metal slabs is demonstrated, both theoretically and experimentally, in the microwave regime. The demonstration is based on transmission measurements and simulations monitoring the shift of the magnetic resonance frequency as one changes a thin dielectric layer placed between the slabs of the pairs. Strong dependence of the magnetic resonance frequency on both the permittivity and the thickness of the dielectric layer under detection was observed. The sensitivity to the dielectrics' permittivity (epsilon) is larger for dielectrics of low epsilon values, which makes the approach suitable for sensing organic materials also in the THz regime. The capability of our approach for THz sensing is also demonstrated through simulations. 
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