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标题: Strong terahertz absorption using SiO2/Al based metamaterial structures
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摘要: Metamaterial absorbers with nearly 100% absorption in the terahertz (THz) spectral band have been designed and fabricated using a periodic array of aluminum (Al) squares and an Al ground plane separated by a thin silicon dioxide (SiO2) dielectric film. The entire structure is less than 1.6 mm thick making it suitable for the fabrication of microbolometers or bi-material sensors for THz imaging. Films with different dielectric layer thicknesses exhibited resonant absorption at 4.1, 4.2, and 4.5 THz with strengths of 98%, 95%, and 88%, respectively. The measured absorption spectra are in good agreement with simulations using finite element modeling. (C) 2012 American Institute of Physics. [http://dx.doi.org/10.1063/1.3693407]
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