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标题: Effect of annealing on the temperature-dependent dielectric properties of LaAlO3 at terahertz frequencies
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摘要: We present THz conductivity of LaAlO3 (LAO) as a function of temperature and annealing, using terahertz time-domain spectroscopy (THz-TDS). We observed that, after annealing, spectral weight redistribution occurs, such that the real conductivity sigma(1)(omega) changed from a featureless and almost frequency-independent spectrum, into one where peaks occur near the phonon frequencies. These phonon frequencies increase with increasing temperature. We attribute the appearance of these absorption peaks to the diffusion and relocation of oxygen vacancies. The dielectric functions of annealed LAO are well fitted with the Drude-Lorentz model. [doi: 10.1063/1.3679725]
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