384. Title:Dynamic processes of diffraction and interference for THz phonon polarization in structured LiNbO3 slab using time resolved imaging

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Source title:Rengong Jingti Xuebao/Journal of Synthetic Crystals
Volume:40
Issue:2
Issue date:April 2011
Publication year:2011
Pages:309-313+333
Language:Chinese
Document type:Journal article (JA)

Abstract:THz phonon polariton was generated in 50 μm LiNbO3 slab waveguide using femtosecond laser pulse. Diffractive and interferential micro structures, which were designed for the THz phonon polariton wave, were fabricated by the femtosecond laser machining system. The spatiotemporal electric field profiles for THz wave were recorded using the time resolved polarization gating imaging system. The dynamic processes of diffraction and interference in different size structures were observed and analyzed, which intuitively showed the spatiotemporal characteristics of the diffraction and interference for the phonon polariton wave.