

THz elastic dynamics in finite-size CoFeB-MgO phononic crystal structures

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In this talk I will discuss the observation of coherent elastic dynamics in a nano-scale phononic crystal excited by light. I will demonstrate how ultra-short light pulses with a length of 40 fs are converted into coherent 0.5 THz elastic waves which persist over about 20 ps. Although the system under investigation has only a small number of spatial periods, the periodicity strongly manifests in the wave physics. To further illustrate this I will show how by breaking the translational invariance of the crystal, this features can be suppressed.