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Phononic crystals for the mode conversion of elastic waves.<sup>1</sup> BETSABE MANZANARES-MARTINEZ, División de Ciencias e Ingeniería, Unidad Regional Sur de la Universidad de Sonora, FELIPE RAMOS-MENDIETA, Departamento de Investigación en Física de la Universidad de Sonora — We have studied theoretically the transmission of elastic waves in an Epoxy/Sn superlattice with Si and Epoxy as media of incidence and transmission, respectively. We found that this is a good system for conversion of the elastic mode polarization. Within some ranges of frequencies the incident longitudinal waves are converted to transverse waves with efficiency of 85%. In order to understand this effect the polarization states of the sagittal bands need be considered. The modes of sagittal bands can be mainly transverse or mainly longitudinal. We found that as higher the density of transverse modes, higher the conversion. The effect depends strongly on the sound velocity of the medium of incidence - high velocity as possible is required. For calculations we also include absorption effects.

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Betsabe Manzanares-Martinez Universidad de Sonora

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