عنوان مقاله:

Investigation of Solid-Solid Honeycomb Lattice Phononic Crystalin Hypersonic Applications

محل انتشار:

نخستین کنفرانس سراسری پژوهشهای کاربردی در مهندسی برق (سال: 1399)

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خلاصه مقاله:

In this study, a ۲D solid-solid honeycomb lattice phononic crystal comprised of PMMA and steel has beeninvestigated. Honeycomb lattice configuration contains two identical scatterers with radii of "r" in a single unit cellseparated equally. The radius of scatterers has been swept in the range of ۲۵۰μm-۱mm to achieve the largest band gap.The band structure and the transmission spectra have been obtained using the finite element method and there is a goodagreement between the obtained results. The two configurations of PMMA inclusions in steel background and vice versahave been analysed and the largest bandgap of ۱۵۰kHz has been achieved for the radii of ۱mm for scatterers of steelimmersed in PMMA. Also, the deaf and flat bands have been .appeared in the band structure which resulted insuppression of wave transmission in the corresponding frequency range

کلمات کلیدی:

.Phononic crystal, Honeycomb, FEM, Solid-Solid

لینک ثابت مقاله در پایگاه سیویلیکا: