

## عنوان مقاله:

Wave diffusion analysis of a magneto-rheological fluid-filled rectangular sandwich composite plate

## محل انتشار:

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## خلاصه مقاله:

In this paper, a rectangular sandwich composite plate with tunable magneto-rheological (MR) fluid core is used to wave diffusion analysis. The sandwich composite plate is made of three layers consisting of the base layer, MR fluid core and the limiter layer. MR fluid core is embedded withindoor the basic and limiter layers. The upper and lower layers are constructed of the elastic materials. At first, for gaining the governing equations of motion, Hamilton's principle and classical plate theory (CLPT) are utilized. Then, exerting an analytical solution, the wave frequency and phase velocity of the propagated waves can be obtained by solving eigenvalue problem. By investigating the effect of the magnetic field severity, the results emphasize that the magnetic field severity is most important factor for changing the amount of the wave frequency and the phase velocity. Besides, the results show by enhancing the core-to-top layer thickness ratio, the wave frequency reduces, because the MR fluid core is softer than elastic layers. Therefore, the MR fluid core operates similar damper. The effect of the thickness of MR fluid core is also discussed

## کلمات کلیدی:

magneto-rheological fluid core, rectangular sandwich composite plate, wave diffusion, magnetic field, elastic layers

## لینک ثابت مقاله در پایگاه سیویلیکا:

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