عنوان مقاله:
A Novel Approach for Optimization of Vehicle Noise Insulators

محل انتشار:
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خلاصه مقاله:
Development of effective sound insulators for interior noise reduction of vehicle cabin is an essential phase of the process of vehicle manufacturing. One of the main issues in this process is the space limitations for packaging the firewall insulators. In this paper, a new approach in sound insulator optimization will be used, in which the space limitation has been considered. The insulator consists of a Micro-Perforated Plate (MPP) and a limp porous layer. MPP layer is suitable for use in vehicles due to low weight and flexibility in design. The main goal of this study was to reach better performance and less weight and volume in a specific thickness. So, a mathematical model of this sound package has been developed and validated by experimental data and SEA software. The simulation results illustrate the high performance of the optimized sound package in practical application, particularly at higher frequencies. On the other hand, the weight and thickness of the optimized sound package are less than the conventional sound .packages. These qualities provide an optimized design that has better compatibility with the automotive industry

کلمات کلیدی:
Absorber, Genetic Algorithm, Micro-Perforated, Optimization, Sea, Sound Package