압전세라믹이 부착된 정방형 판의 동적 모델링

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Dynamic Modeling of a Rectangular Plate with Piezoelectric actuators and Sensors

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Key Words : Rayleigh-Ritz Method, Electro-Mechanical Coupling.

Abstract : This paper is concerned with the dynamic modeling of a rectangular plate with piezoelectric actuators and sensors. The experimental frequency response plots can be used to verify the theoretical modeling. The active vibration control was achived by using positive position feedback controller. Theoretical analysis will follow.

압전세라믹 감지기와 작동기를 이용한 방진 시스템 개발

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Development of the Vibration Isolation System using Piezoceramic Sensors and Actuators

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Key Words : Active Vibration Isolation, Piezoceramic Actuators, Piezoceramic Sensors

Abstract : This paper is concerned with the development of the vibration isolation system using piezoelectric actuators and sensors. The active vibration absorber system consists of 4 pairs of PZT actuators bonded on aluminum plates making s- shaped device. Hence, the active system is directly connected to the passive system. The rubber attached to the end of the beam is connected to the upper base as a structural member. It allows bending thus maximizing the vertical movement generated by the piezoceramic actuators. The piezoceramic sensors consists of 4 PZT sensors known to tilting, rolling and vertical movement. This paper also presents the development and the verification of the control techniques for the passive-active vibration absorber.