

혼합 모드를 이용한 전방향성 초음파 액추에이터

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Omni-directional piezoelectric actuator using mixed mode

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Abstract : This paper presents an omni-directional piezoelectric actuator which utilizes only one actuator. The actuator has a simple structure of cone type consists of two piezoelectric ceramics of ring type and electrodes divided four segments and a stainless steel body. To find the optimal operating condition of the actuator, the frequency characteristics of the actuator are analyzed by ATILA, FEM and measured by Impedance Analyzer. We have also developed a stage using the omni-directional actuator and an actuator driver circuit to create four sinusoidal waves with a variable frequency and phase difference.

Key Words : omni-directional piezoelectric actuator, mixed mode, piezoelectric ceramic