Analysis for Electric-mechanical Behavior of a New Piezoelectric Polymer Film

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ABSTRACT

This study investigates the piezoelectric mechanical behavior of the COC(Cyclic Olefin Copolymer)/PVDF(Polyvinylidene Fluoride) laminated thin plate by using the ANSYS software. Firstly, the laminated thin plate is modeled as a cantilever beam and induced different level electricity. Numerical solutions are obtained for stresses、strains and displacements of the thin plate by the finite element models with ANSYS. Some discussions are made for the the possible applications which can be the base of the high polymer materials.

Keywords : 0piezoelectric materials ; COC ; PVDF ; laminated thin plate ; finite element method ; stress ; strain

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