

FABRICATION AND ANALYSIS OF SMART COMPOSITE PLATES

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Abstract

The Smart Composite laminates were fabricated from glass fibre and epoxy/cyanate ester of 20, 40 and 60% cyanate loading with piezoelectric material PZT embedded in the laminate. The mechanical properties like tensile strength, and flexural strength were measured as per ASTM D3039 and D790 respectively. The element stiffness formulation and the governing equations for dynamic analysis are presented in detail. A computer program developed using this formulation is evaluated using the results available in the literature and experiment. Model analysis results are presented for Smart Composite laminates. The natural frequencies of the Smart Composite laminates are examined.

Keywords : Natural frequency, model analysis, Smart Composite laminates