

ELASTIC PROPERTIES OF NANOCOMPOSITE LAMINATED STRUCTURES BY INVERSE METHOD

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Abstract. The Finite Element model of a laminate plate is used to approximate the model natural frequencies to the experimental results by an optimization procedure. Experimental frequencies the tensile and shear modulus, the Poisson coefficient of a woven orthotropic composite plate were determined to be used to optimize the FEM model. The plates used in the experiment are made of S2-glass/epoxy with 16 layers manufactured by vacuum assisted wet lay-up. The nanocomposite plate has been obtained by adding 0%, 1%, 2%, 5% and 10% nanoclays in weight into epoxy matrix. The inverse method has also employed to identify real and spurious modes on nanoclay content composite.