

## **DAMAGE BEHAVIOR AND MECHANICAL PROPERTIES IN CFRP AND GFRP ANGLE-PLY LAMINATES**

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### **Abstract**

This study investigates the mechanical properties and damage behavior and mechanical properties in CFRP and GFRP angle-ply CFRP laminates with different thicknesses. Both monotonic and cyclic tensile tests were performed. The laminate configurations considered were  $[0_m/\theta_n/0_m]$  where  $\theta= 90, 75, 60$  and  $45$  degrees, and some combinations of  $m$  and  $n$ . Young's modulus reduction was measured as a function of matrix crack density and compared with the prediction based on the variational stress analysis