

# A Statistical Analysis on Tensile behaviour of Single Edge Notched Jute Hybrid Composites

Harsha H M<sup>1</sup> and Dr. K. G. Satish<sup>2</sup>

Assistant Professor, Department of Mechanical Engineering, GM Institute of Technology, Davangere, India<sup>1</sup>  
Assistant Professor, Department of Mechanical Engineering, UBDT College of Engineering, Davangere, India<sup>2</sup>

**Abstract:** *In this work, a statistical model was developed using Taguchi technique to study the factors influencing the tensile strength of single edge notched jute hybrid composites. Standard uniaxial tensile tests were conducted to evaluate tensile strength of single edge notched jute hybrid composite specimens, with different fiber orientations, glass volume fractions and notch sizes, in accordance with ASTM D3039 standards. It is observed that as glass volume fraction increases, tensile strength increases. As notch size increases, tensile strength decreases. The tensile strengths of specimens in fiber direction (0°/90°) were higher than those in off fiber direction (±45°). The forecast model indicates that the major parameters that impact the tensile strength were glass volume fraction and fiber orientation. Notch size had lesser impact on tensile strength. The optimum value of the tensile strength is observed for specimen with 0/90 fiber orientation, 45% glass volume fraction, 2mm notch size and from the confirmation test, the model results were observed to be near to the experimental values.*

**Keywords:** Taguchi analysis, Glass and Jute fiber, volume fraction, orientation, notch size, tensile strength, single edge notch

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