

## Article Abstract

<b>Title:</b>	Machinability of glass fiber reinforced plastic (GFRP) composite materials
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<b>Abstract:</b>	This paper deals with the study of machinability of GFRP composite tubes of different fiber orientation angle vary from 30 <sup>0</sup> to 90 <sup>0</sup> . Machining studies were carried out on an all geared lathe using three different cutting tools: namely Carbide (K-20), Cubic Boron Nitride (CBN) and Poly-Crystalline Diamond (PCD). Experiments were conducted based on the established Taguchi's Design of Experiments (DOE) L <sub>25</sub> orthogonal array on an all geared lathe. The cutting parameters considered were cutting speed, feed, depth of cut, and work piece (fiber orientation). The performances of the cutting tools were evaluated by measuring surface roughness (Ra) and Cutting force (Fz). A second order mathematical model in terms of cutting parameters was developed using RSM. The results indicate that the developed model is suitable for prediction of surface roughness and Cutting force in machining of GFRP composites.
<b>Keywords:</b>	GFRP composite materials, Response surface methodology (RSM), ANOVA, Surface roughness, Cutting force.