

## Article Abstract

Title:	An experimental study of effect of process parameters in turning of LM6/SiC <sub>p</sub> metal matrix composite and its prediction using response surface methodology
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Abstract:	In the present investigation an attempt is made to evaluate the effect of certain cutting variables on surface roughness in plain turning of aluminium alloy (LM6) - SiC <sub>p</sub> metal matrix composites under dry cutting condition. Cutting velocity, depth of cut and weight percentage of SiC <sub>p</sub> in the metal matrix are selected as the influencing parameters. The experiments are conducted based on three factors, two level and central composite face centered design (CCD) with full factorial and the results are analyzed according to the principle of Response Surface Methodology. The equation to the response surface is developed using the design of experiments features of the commercial software package MINITAB-14. The goodness of fit of the regression model is examined using the Analysis of Variance (ANOVA) and the F-ratio test. The contour plots of the process parameters reveal that the best surface finish is associated with the lowest level of depth of cut, the lowest level of the weight percentage of SiC <sub>p</sub> in the metal matrix and the highest level of cutting velocity. These conclusions are further verified through eight confirmatory experiments and with the help of the sensitivity analysis.
Keywords:	Metal Matrix Composites, Response Surface Methodology, Surface Roughness, ANOVA.