

# Optimization of Cutting parameters of AISI 1018 Low Carbon Mild steel in turning using green cutting fluid by Taguchi Method

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**Abstract** - The objective of this work is to optimize the response Cutting parameters (Tool wear and Material Removal Rate) of AISI 1018 Low carbon mild steel by Taguchi Method in straight turning process. We have taken speed, feed, depth of cut and types of cutting fluids as machining parameters with their three level values. In our study a commercial semi-synthetic cutting fluid (SSCF) and two vegetable based cutting fluids are used and values of response variables are analyzed to see if the performance of response machining parameters is increased by using Vegetable based cutting fluids for sustainable machining. For individual optimization, Taguchi's  $L_9(3^4)$  orthogonal array and Analysis of Variance(ANOVA) are used. The optimum results are verified with the help of confirmation test.