

# Optimization of Turning Parameter for Surface Finish and Material Removal Rate for Aluminum 6061

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**Abstract:** *Turning is one of the most important machining operation in industries. Turning process is affected by many factors such as the, feed rate, depth of cut, geometry of cutting tool, cutting conditions etc. The objective of this project is to optimize the Cutting Parameters for turning of AL-6061 to obtain the required Surface Roughness and Material Removal rate. Also to determine the Cutting Parameters of Cut, Speed, and Feed for optimal Surface Roughness and material removal rate. The turning of Al-6061 is done on CNC lathe. Taguchi design of experiment is used to optimize the multi response in turning operation. For this purpose, we collect the data for surface roughness and various cutting parameters and Experiments are conducted on CNC lathe machine and also the influence of cutting parameters are studied via analysis of variance (ANOVA) approach.*

**Keywords:** Al-6061, ANOVA, Material Removal Rate, Surface Roughness, Taguchi

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