



A STUDY OF THE EFFECTS OF MACHINING PARAMETERS ON THE
SURFACE ROUGHNESS IN THE TURNING PROCESS

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ABSTRACT

In machining operation, the quality of surface finish is an important requirement for many turned workpieces. Thus, the choice of optimized cutting parameters is very important for controlling the required surface quality. The objective of this study is to develop a better understanding of the effects of spindle speed and cutting feed rate with constant depth of cut on the surface roughness. The experiments are performed on conventional lathe machine using mild steel specimens with carbide cutting tool. Cutting speeds in the range of 300 to 1200 m/min, feed variation up to 0.08 mm and depth of cut of 1mm are performed as experiment parameters. The quality of the surface will be will be measured with 3D surface roughness measurement machine which will obtain the result of Ra value with the roughness graph and 3D view. All the resulting experimental then data are analysed in order to develop an understanding which can provide insight into the problems of controlling the finish of machined surfaces when the cutting parameters are adjusted to obtain a certain surface finish.

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