Abstract

This paper describes the influence of cutting parameters and cutting tool geometry on the surface finish of SAE 40 Bronze in turning operations based on the experimental measurement of surface roughness. For the data analysis according to variables studied, 3-D behavior graphs and a multifactorial analysis of variance (ANOVA) were made. A digital surface roughness tester was used, and a factorial experimental design was made, which allowed turning bars of SAE 40 Bronze by means of a conventional lathe. A carbide insert with quadrangular geometry was used. The influence of cutting parameters such as feed rate, depth of cut and cutting speed, and the cutting tool geometry (nose radius) on the magnitude of the experimental surface roughness in turning operations was determined.

Keywords

Surface roughness, SAE 40 bronze, turning.