International Journal of Engineering Sciences Paradigms and Researches (IJESPR)
Vol. 48, Special Issue, (TAME-2019, April 4-5, 2019)
(An Indexed, Referred and Impact Factor Journal approved by UGC- Journal No. 42581)
ISSN (Online): 2319-6564
www.ijesonline.com

Abstract Details

Title: Study the effect of machining parameters on surface roughness during turning of autenitic steel ss304 using taguchi method

Authors: Fahd Hussain, Afzal Khan

Abstract : The study aims at investigating the influence of different machining parameters such as cutting speed (v), feed (f) and depth of cut (d) on different performance measures during turning of SS304 stainless steel (18%Cr,8%Ni,0.08%C). Sintered carbide coated insert tool was used a cutting tool for the turning purpose.The primary objective of the study was to use the ANOVA in order to determine the effect of machining parameters viz. cutting speed, feed, and depth of cut, on the surface roughness of the machined material.The objective was to find the optimum machining parameters so as to minimize the surface roughness.The experiment was conducted in an experiment matrix of 9 runs designed using an orthogonal array L9. Surface Roughness was measured using a Talysurf. MINITAB ® 17 was used for analysis of the compiled data.

The significance of the parameters on the response variables was investigated using Analysis of Variance (ANOVA).Results showed that feed is the most significant factor affecting the surface roughness, closely followed by cutting speed and depth of cut.The recommended parametric combination based on the studied performance criteria (i.e. Feed, Cutting Speed, Depth of Cut) was found. A confirmatory test was also carried out to support the analysis and an improvement was observed in Taguchi method.

Keywords – Optimization, Parameters, Turning, Taguchi's Method, ANOVA, Stainless Steel, L9 Orthogonal Array