

Regression and ANN models for estimating minimum value of machining performance

Abstract

Surface roughness is one of the most common performance measurements in machining process and an effective parameter in representing the quality of machined surface. The minimization of the machining performance measurement such as surface roughness (R_a) must be formulated in the standard mathematical model. To predict the minimum R_a value, the process of modeling is taken in this study. The developed model deals with real experimental data of the R_a in the end milling machining process. Two modeling approaches, regression and Artificial Neural Network (ANN), are applied to predict the minimum R_a value. The results show that regression and ANN models have reduced the minimum R_a value of real experimental data by about 1.57% and 1.05%, respectively.