ABSTRACT
In the recently years, Taguchi method has been widely applied in the practical applications for optimizing the process parameters in the manufacturing process. However, the method only takes a single quality attribute into account. In this research, a systematic method is proposed to optimizing the process parameters with multiple quality attributes encountered. The method begins on applying TOPSIS and fuzzy theory techniques to integrate the multiple quality attributes into a single quality index, then a neural network model is designed for establishing the output prediction function; finally, a genetic algorithm is employed to obtain a set of process parameter for satisfying the various quality requirements in the manufacturing process. A practical example is demonstrated to verify the adaptability of the proposed method. The results show that the proposed method performs well.

Keywords : Neural Network ; Taguchi ; Multiple Quality Attributes ; Fuzzy Theory ; Genetic Algorithm
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