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Application of Taguchi Method in Optimization of Technological Process Parameters

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Abstract
This study investigates the factors that optimize the surface finish of turbine blades on the centrifugal finishing machine. Taguchi method has been employed to determine the optimal levels of process parameters which affect surface finish. The factors identified in the brainstorming session are type of abrasive, water level and operation time. Orthogonal array decided by number of factors and their levels, was used to conduct the experiment. Signal-to-noise ratio and analysis of variance were then calculated to provide the statistical confidence of the experiment. The result of this study is that the surface finish of the blades improved considerably which led to scrap reduction. Also there was a reduction achieved in operation time per blade from 25 minutes to 3 minutes.

Keywords: Centrifugal finishing, Taguchi methods, surface finish, turbine blades

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