

## Optimization of Process Parameters by Using Taguchi Method for Bainitic Steel Machining

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**Abstract :** In recent days, bainitic steel is used in automobile and non-automobile sectors due to its high strength. Bainitic steel is difficult to machine because of its high hardness, hence in this paper machinability of bainitic steel is studied by using Taguchi design of experiments (DOE) approach. Conventional turning experiments were done by using L16 orthogonal array for three input parameters viz. cutting speed, depth of cut and feed. The Taguchi method is applied to study the performance characteristics of machining parameters with surface roughness (Ra), cutting force and tool wear rate. By using Taguchi analysis, optimized process parameters for best surface finish and minimum cutting forces were analyzed.

**Keywords :** conventional turning, Taguchi method, S/N ratio, bainitic steel machining

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