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Optimization of Process Parameters for Rotary Electro Discharge Machining Using EN31 Tool Steel: Present and Future Scope

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Abstract : In the present study, rotary-electro discharge machining of EN31 tool steel has been carried out using a pure copper electrode. Various response variables such as Material Removal Rate (MRR), Tool Wear Rate (TWR), and Machining Rate (MR) have been studied against the selected process variables. The selected process variables were peak current (I), voltage (V), duty cycle, and electrode rotation (N). EN31 Tool Steel is hardened, high carbon steel which increases its hardness and reduces its machinability. Reduced machinability means it not economical to use conventional methods to machine EN31 Tool Steel. So, non-conventional methods play an important role in machining of such materials.

Keywords : electric discharge machining, EDM, tool steel, tool wear rate, optimization techniques
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