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Guided By

**PROF. H. C. PATEL**

**SMT. S. R. PATEL ENGINEERING COLLEGE, UNJHA**

**Project Title**

**PARAMETRIC ANALYSIS AND MATHEMATICAL MODELING OF MRR, AND SURFACE ROUGHNESS FOR HCHCR MATERIAL ON WEDM BY D.O.E. APPROACH**

**Abstract:**

Wire electrical discharge machining process is a highly complex , time varying & stochastic process. The process output is affected by large no of input variables. Therefore a suitable selection of input variables for the wire electrical discharge machining (WEDM) process relies heavily on the operators technology & experience because of their numerous & diverse range. WEDM is extensively used in machining of conductive materials when precision is of prime importance. Rough cutting operation in wire EDM is treated as challenging one because improvement of more than one performance measures viz. Metal removal rate(MRR), surface finish & are sought to obtain precision work. In this paper an approach to determine parameters setting is proposed. Using Taguchi's parameter design , significant machining parameters affecting the performance measures are identified as pulse peak current , pulse on time, and duty factor . The effect of each control factor on the performance measure is studied individually using the plots of signal to noise ratio. The study demonstrates that the WEDM process parameters can be adjusted so as to achieve better metal removal rate, surface finish.

**Prepared By:**

<b>Sr. No.</b>	<b>Student Name</b>	<b>Enrollment No</b>
1	PATEL BRIJESHKUMAR M.	100783119001
2	PATEL NIKUNJ J.	100783119002

