

## **Influence of Near Dry Wirecut Electrical Discharge Machining parameters on Kerf width in Monel 400**

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### **ABSTRACT**

This work explains the more refined and subtle analysis on one of the significant response parameters in kerf width upon machining Monel 400. Machining was done under near-dry ambiance with the support of the mathematical modeling technique of Response Surface Methodology (RSM) and the more sophisticated predictive computational modeling in an artificial neural network (ANN). Driving control elements considered for this WEDM process were pulse-on and off time ( $T_{ON}$  and  $T_{OFF}$ ), Voltage (V), Wire Feed (WF), Air inlet pressure and Water flow rate. The impact on the intermittent zone that prevails between the surface of the material in the spark zone and the wire during the process has not only being influenced by the control parameters but also by the dielectric medium. The implications of di-electric medium maintained at near dry conditions were given utmost importance and considerations in this investigation. The execution of the RSM and created ANN models are contrasted and trial consequences of Kerf Width for their adequacy. The examination demonstrates that ANN shows more exact expectation contrasted with the RSM models.

**KEYWORDS :** WEDM; Near Dry; RSM; ANN; Kerf Width; Air Water Mist.