

## Abstract

This research was to compare 2 electrode materials: copper and brass that affect efficiency in electric discharge machining (EDM) on a martensitic stainless steel grade AISI 410. The results show that a brass electrode gives more material removal rate (MRR) than a copper electrode. Then, this research investigates the influence of machining variables on material removal rate (MRR), electrode wear rate (EWR), taper and roughness ( $R_a$ ) with a brass electrode. Experimental strategy used in this investigation was full factorial designs with two replicates. Results from analysis of variance (ANOVA) at a confidence level of 95% ( $\alpha = 0.05$ ) indicated that the current statistically affect MRR, EWR and roughness the most. The servo statistically impact taper the most. A mathematical model was formulated with Full Factorial designs, Response Surface and Multiple Linear Regression Analysis. The least average error obtained with Full Factorial design.