

Multi-Response Optimization of EDM (Electrical Discharge Machining) for Ti-6Al-4V (Titanium alloy) using Taguchi – Response surface methodology.

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Abstract

Ti-6Al-4V is a titanium alloy used in aerospace industry because of its high strength, low elastic modulus and corrosion resistance property. Its hardness makes it a necessity to use non-conventional processes for machining. To analyze the effects of peak current, pulse-on time and pulse-off time on output parameters we drilled a hole of \varnothing 6 mm using copper (99%) electrode by Electric Discharge Machining (EDM) process. Effect of various input parameters on output viz material removal rate (MRR) and surface roughness are studied. Response surface methodology was used for optimization of the process. Taguchi L9 orthogonal array was used to design the experiment. Significance of individual parameter was obtained by ANOVA. The result obtained will be compared with that obtained by grey-relational analysis.

Keywords

Electric Discharge Machining, Orthogonal Array, Response Surface Methodology.

Biography

Gopal zinzala is a final year student of Industrial Engineering at School Of Technology, Pandit Deendayal Petroleum University, Gandhinagar, Gujarat-382007, INDIA. He has done a project on waiting line analysis of traffic signal. He is the member of ASQ in this he has yellow belt certification of American standard of quality, currently he is working for JUST DIAL Company which own a strong hold on local business information in india.