

Fabrication of Miniature Gear of Hastelloy X by WEDM Process

Authors : Bhupinder Singh, Joy Prakash Misra

Abstract : This article provides the information regarding machining of hastelloy-X on wire electro spark machining (WEDM). Experimental investigation has been carried out by varying pulse-on time (TON), pulse-off time (TOFF), peak current (IP) and spark gap voltage (SV). Effect of these parameters is studied on material removal rate (MRR). Experiments are designed as per box-behnken design (BBD) technique of response surface methodology (RSM). Analysis of variance (ANOVA) results indicates that TON, TOFF, IP, SV, TON x IP are significant parameters that influenced the MRR, and it is depicted that value of MRR is more at high discharge energy (HDE) and less at low discharge energy (LDE). Furthermore, miniature impeller and miniature gear ($OD \leq 10\text{MM}$) is fabricated by WEDM at optimized condition.

Keywords : advanced manufacturing, WEDM, super alloy, gear

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