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EFFECT OF ELECTRICAL DISCHARGE FOR SURFACE CHARACTERISTIC INVESTIGATION IN WIRE ELECTRICAL DISCHARGE MACHINING OF COBALT CHROMIUM ALLOY

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ABSTRACT

Cobalt chromium alloys have attracted great interest. Cobalt chromium alloy processes excellent properties such as high strength, high corrosion resistance, and high biocompatibility. Therefore, the use of Cobalt Chromium is limited due to a cutting process. Non traditional equipments, such as wire electrical discharge machining (WEDM), are necessarily required for precise cuts and that is why, wire electrical discharge machining (WEDM) is preferred by most modern manufacturing industries. Despite high demand, the WEDM mechanism is relatively complex. Hence, the special trimming tool was introduced to maximize WEDM performance. The effect of process parameter variations peak current (IP) was determined by machining characteristics of CoCr alloys. Mechanism of material removal was correlated with machining conditions. Peak current process parameters were undertaken in this study. Results was that peak current was the dominant factor offering optimum responses in MRR, when the surface roughness (R_a), reduced.

KEYWORDS: *Wire Electric Discharge Machining (WEDM), Cobalt-Chromium (CoCr), Material Removal Rate, Surface Roughness (R_a), Peak Current (Ip)*