Process parameter optimization of wire EDM on aluminum and D2 tool steel by using Taguchi method

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Process Parameter Optimization of Wire EDM on Aluminum and D2 Tool Steel by Using Taguchi Method

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Declaration

We certify that the research and analysis work titled “Process Parameters Optimization of Wire EDM on Aluminum and D2 Tool Steel by using Taguchi Method” is our self-conducted work and has not been offeredsomewhere else for evaluation. Whereas thephysical material has been used from different other sources and has been properly referred**.**

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CONTENTS

LIST OF FIGURES

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Up and above anything, all praises to ALMIGHTY ALLAH, the most merciful, the most compassionate and the enlightener and after ALMIGHTY ALLAH, to His Prophet, Hazrat Muhammad (SAW), the most perfect and exalted, who is forever a source of guidance and knowledge for humanity as a whole.

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Mohammad Sameem Arshad

Zeeshan Ayyub

Abstract

In EDM wire one of the key factor is surface unevenness. The consequence of procedure on the unevenness of aluminum and surface of D2 steel is investigated. The method used for the parameter optimization is known as Taguchi method. WEDM technology is suitable for cutting hard materials. WEDM precise and more accurate. Brass is used for cutting. Two materials are used for aluminum and D2 tool steel cutting. Time use, OFF time, the wire feed, the feed rate is used as input parameters. On the other hand, all parameters are kept constant. Surface roughness is measured by using a surface profile meter.

CHAPTER # 1

INTRODUCTION OF WIRE EDM

One of the utmost thermo-electric and non-conventional metallic absorption process used is Electrical discharge machining (EDM). This converts the substantial substance from the workshop by a sequence of distinct catalyst sandwiched between an instrument conductor submerged in a fluid dielectric medium and a work. The material in final form is amended using electrical energy. Melting and vaporization take place as a result of electrical discharges. The work material in small amount is then inserted and removed away by using dielectric medium.