

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



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بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

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A piece of Arabic calligraphy in a bold, black, cursive style. The text is the Basmala: "Bismillah ar-Rahman ar-Rahim". The letters are thick and interconnected. Small numbers (1-5) are placed around the letters to indicate the correct stroke order for writing. A signature and the year "1418" are visible at the bottom of the calligraphy.

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

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A thesis work submitted in order to fulfill the degree requirement

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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 offered somewhere else for evaluation. Whereas the physical material has been used from different other sources and has been properly referred.

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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.