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ERRY YULIAN TRIBLAS ADESTA  
AKM Nurul Amin  
Mohamad Yeakub Ali

# **MANUFACTURING MANAGEMENT**

From basic machining to quality product



**IIUM Press**

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## **EDITORS**

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## Recent Developments in EDM

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### 1. Introduction

There are various materials processes adapt in this world nowadays but EDM is still been used till today. EDM, electrical discharge machining is one of the conventional machining; also known as the non-traditional machining that is commonly used in the materials removing area. The process of EDM has been developed since late 1940s and has been widely used to machine hard materials such as electrically conductive ceramics and hardened metal. EDM are also capable to machine a complex geometry shape precisely and accurately without damaging the work piece [1]. EDM is extensively used for the fabrication of dies and moulds. It is also used in aerospace fields, automotive industries and surgical components for the finishing parts of that product fabrication [2, 3]. The process involved electrical sources by removing the materials parts by the erosion control of electrically conductive materials called dielectric fluid rapidly in by the presence of repetitive sparks discharge between the electrode and work piece.

The gap between the electrode and work piece is so small enough that it initiate a voltage and ionize the dielectric fluid [4]. Without direct contact between electrodes and work piece, mechanical stresses, chatter and vibration problems during machining can be eliminated hence reduced the effect of cutting process usually observed such as electrode wear, material removal rate and chips formation. There are many trends of EDM process develop through research from various researcher around the world to improve the machining area of EDM and to ensure that the usage of EDM process can be utilize in many field. The significant objective of this chapter is to discuss some of the development that have been made in the EDM process and the trends carried out in the cutting process. The examples of the EDM's process are the electrical die-sinking (EDM), wire-cut EDM (WEDM), micro-EDM