

TE 130632

Thesis Title	A Study Appropriate Relation of Parameter in Electrical Discharge Machining
Thesis Credits	12
Candidate	Mr. Boontham Limpiyapun
Supervisors	Dr. Suksan Prombunpong Dr. Peerawat Somnuk
Degree of Study	Master of Engineering
Department	Production Engineering
Academic Year	2001

Abstract

This thesis studies the relationship among the three parameters and their effects in the sparking process of the Electro Discharging Machine (EDM). These three parameters, which are the type of material, the amount of electrical current, and the type of electrode, affect the machining rate, the wear rate of an electrode, the overcut, and the surface roughness. The factorial method is used in the design of the experiment and in the process of data analysis. The MINITAB V.13 is used as a tool to analyze the effects of each parameter. The electrodes used in the experiment are copper, graphite, and copper-tungsten. Each electrode has dimension of 20 mm diameter. The work pieces are three kinds of alloy steel by BOHLER: CM50, M202, and M300. The sparking depth is 2 mm. Three levels of current are used: 15 A, 30 A, and 45 A. The results show that the higher the current, the greater the machining rate, the higher the wear rate, the more the over cut, and the rougher the finishing surface. It is found that the M300 alloy steel yields the best machining rate while the copper electrode gives low wear rate and the best surface finish.