# The Study of Intelligent Pluse Monitor and Control on EDM


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**ABSTRACT**

The discharge pluse monitor and controller on electric discharge machine (EDM) is designed and implemented via a Field Programmable Gate Array (FPGA).The Td and oscillation energy during electric discharge machining (EDM ’ing) can be accurately detected.The magnitude of the Td can be sent to the motion control board via a digital to analogue (D/A).The abnormal discharge can be acknowledged and reference of the gap control can be increased via the acknowledged signal.The electrode will be forced to jump and the gap is cleaned .A proportional (P) control is used to control the actual Td via regulate the postion of the electrode.The discharge energy on 100 MHz can be detected via a band pass filter.The motion control board is acknowledged by the monitor when the discharge continually maintains at low energy.The reference increases automatically according to the acknowledge signals.The electrode is forced to jump when the increased reference is large.The monitor is designed via an FPGA and implemented in a stand alone board.The actual discharge performance is also verified in this study.



Keywords : FPGA,EDM,Discharge Gap Control,Pluse monitor


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