



SIMPLE ELECTRO DISCHARGE MACHINE

Feasibility of 1 axis EDM machine

Project Summary

The goal of this project is to demonstrate an innovative EDM machine topology.

The innovation concerning the spark generator and the process control based on a unique DSP. The axis control is based on a synchronous permanent magnet motor, and a dedicated vector field control. The generator has the following specifications: Ignition voltage up to 100V, ignition current up to 10A.

Power discharge, triangular or trapezoidal, up to 240A, slope up to 200A/us, max power 0.5kW, max frequency 80kHz.

The axis control resolution is 1µm and the maximum axis acceleration is 7 m/s² (average of 4 m/s²).

Valorisation

An important CTI project in collaboration with AGIE-Charmilles and Mikron was signed with iAI (HEIG-VD), IMEC (HEPIA), IA (EPFL). The project budget is about 2 MCHF.

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