

## Bachelorarbeit / Masterarbeit

**Process analysis and iQ zero wear algorithm implementation in meso-micro scale EDM**

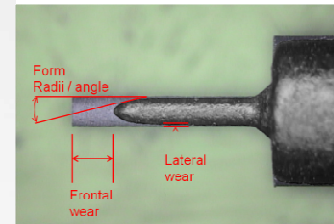
Agie Form-1000



iQ zero wear from AgieCharmilles



iQ zero wear in micro at IWF - ETHZ



**Keywords:** Micromachining, Precision Engineering, Meso-micro EDM, Process analysis & statistics

**Motivation**

With the growing field of precision and micromachining, precision manufacturing methods are being sought to machine high aspect ratio structures from metals and ceramics with high productivity and minimal costs. Typical industries include Electronics, Medicine, Aerospace, etc. Industries are mainly interested in machining cavities while incurring lowest tool wear possible which has been achieved using iQ zero wear technology in Conventional Die-sink EDM. Focus of this work is to implement the newly developed iQ zero wear for meso-micro scale Electrical Discharge Machining.

**Tasks**

- Understanding basics of EDM process and Machine – Form1000
- Basic experiments with Graphite and copper electrodes in meso-micro scale
- Process analysis concentrating on wear behaviour and implementing iQ - micro
- Measurements of form – electrode / work-piece using optical methods
- Process parameter analysis and statistics of process behaviour paradigm shift from macro to micro
- Summarise the results and documentation

**Required skills**

Motivation, interest in precision techniques and manufacturing

**We offer**

- Work in interdisciplinary team
- Exciting novel technology developed at ETHZ, Interesting field of precision and micromachining
- Close contact to the industry – AgieCharmilles SA

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