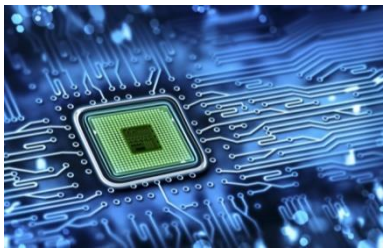
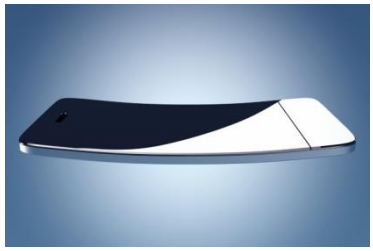
PASSION. PRECISION. PURITY.


INTERNSHIP / MASTER THESIS

Actuator Unit Development for a Super-Fast Valve Control

Are you looking for an opportunity to write your thesis in an industrial environment or obtain valuable industry experience, during or after your technical education? Here is one of many interesting topics we have on offer. We are also very open to your own ideas in order to create a matching opportunity for you at VAT.

Innovation has always been the driving force at VAT since the company was founded over 50 years ago. This has made us the world leader in vacuum valves and vacuum sealing technology. This pioneering spirit motivates us daily to meet our customers' requirements with enthusiasm. Together with our employees we stand for passion, innovation and quality. VAT is headquartered in Haag (Switzerland) and employs approximately 2 000 people worldwide. It has production centers in Haag (Switzerland), Penang (Malaysia) and Arad (Romania) as well as a production facility in Xinwu (Taiwan). With our customers mainly being situated in the United States and Asia, this provides a great opportunity to start an international career.

What you will explore:

New processes for the production of next generation microchips at 5nm and 3nm technology nodes (AI, AR, VR, ASIC) in the semiconductor industry require fast changing process conditions in the vacuum chamber to reach their productivity targets. The lading companies like TSMC, Intel and Samsung demand control valves with an extremely fast valve actuation and a high performance control algorithm in the millisecond range. The goal of this work is to build a prototype for a super-fast VAT Butterfly valve in order to deal with the challenges of the future semiconductor processes.

Possible work packages are:

- Development of a fast valve actuator together with experts and project partners in a motor design
- Building a fast control valve prototype (mechatronics assembly)
- Develop a high performance motor control algorithm with a hardware in loop (HIL) system
- Testing and verification of the valve performance in terms of actuation speed and accuracy under process-like conditions.

What you will need:

- Theoretical background in mechanical, electrical engineering or similar
- Skills & knowledge in motor design and power electronics
- Practical know-how in controlling an electric actuator
- Programming skills (e.g. C, C++, Matlab & Simulink)

Are You Ready for the Challenge?

Then we look forward to receiving your **electronic application sent to Andreas Hofer.**

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