

Master's thesis (30 ECTS)

Working title: Environmental Control System for Live Cell Analysis

In cooperation with: **Molecular Devices (Austria) GmbH**



Molecular Devices supplies high-performance analytical systems, including instruments, software, and reagents, to accelerate and improve drug discovery and basic life science research. By providing systems that address just about any combination of throughput, content, and budget needs, Molecular Devices helps pharmaceutical and biotechnology as well as academic and government labs leverage advances in molecular, cellular, and systems science to understand normal and abnormal biological functions and discover and develop novel therapeutics and tests.

Molecular Devices plans to investigate the possibilities to further enhance their products in terms of live cell analysis. A Master's Thesis is proposed to better understand the requirements, limits and possible implementation of an environmental control system for live cell analysis enabling optical measurement applications (Absorbance detection, Fluorescence Intensity, Luminescence, Fluorescence Polarization, Imaging...).

Tasks:

- Learning about temperature, humidity and gas (CO₂, N₂, O₂) sensing and control
- Understanding measurement setup and system requirements
- Development of gas mixing and humidity control units
- Experimental setups, data acquisition and verification
- Optimization towards implementation

Requirements:

Education: Electrical Engineering, Biomedical Eng.

Expert knowledge: Biomech. Engineering, Biomedical Instrumentation and Sensors

Organizational matters:

- Supervisor TU Graz: Prof. Alexander Bergmann
- Supervisor MolDev: Dr. Andreas Kenda
- Period: 6 months, employment
- Start of work: as soon as possible
- Location: Wals/Salzburg

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