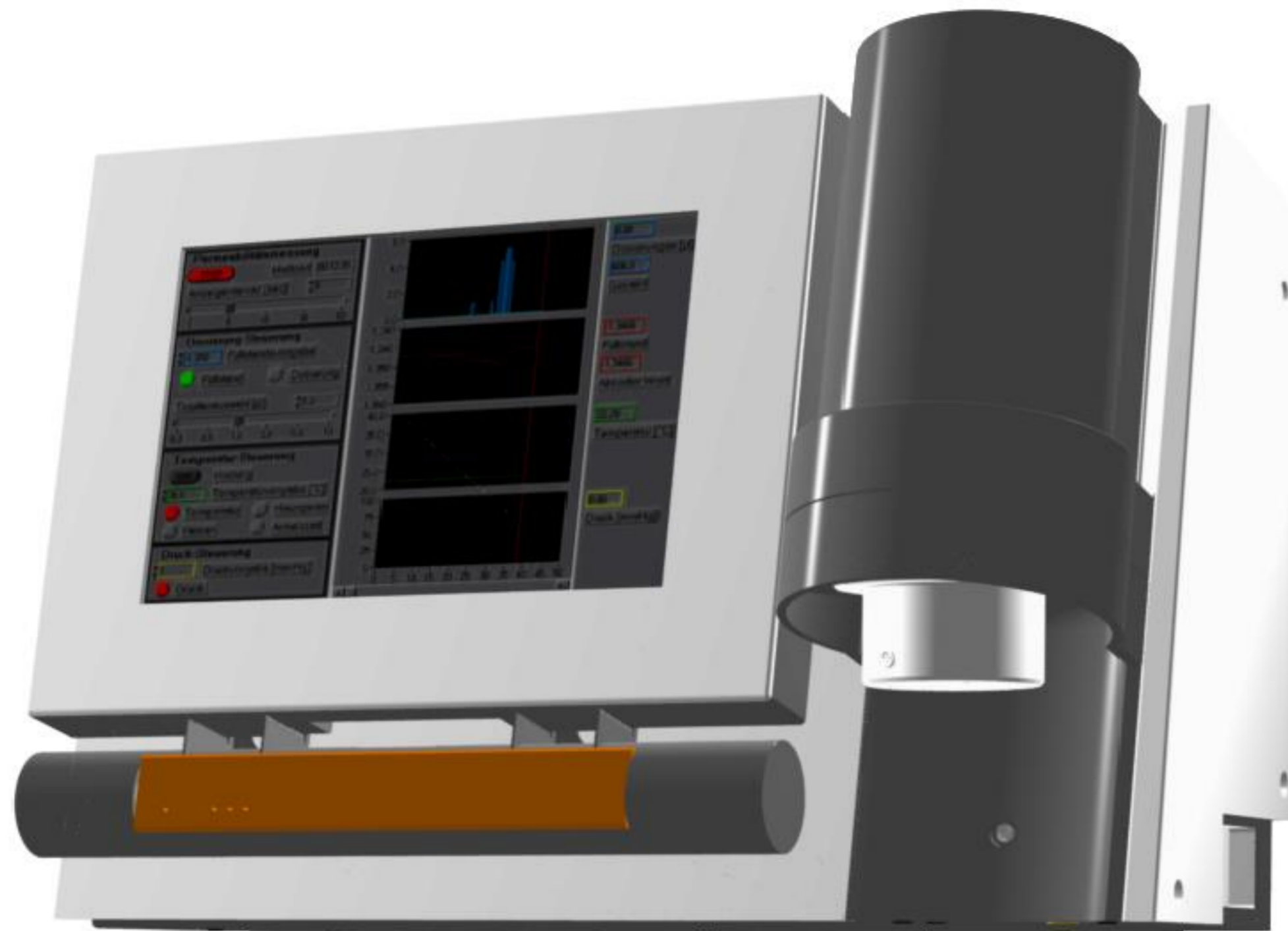


Measurement of Permeability of biological and technical Tissues



Permeability-system and the fields of application:

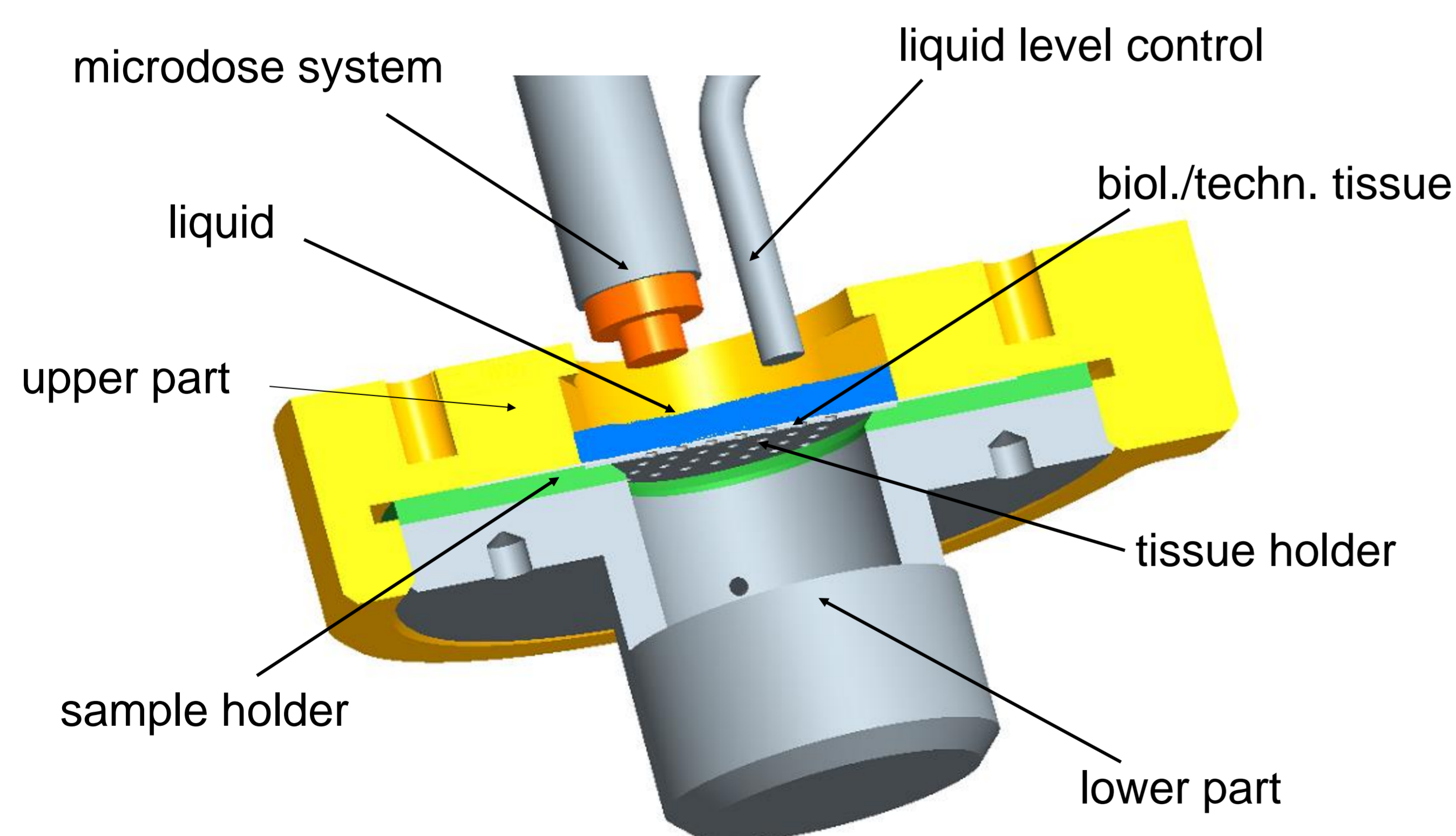
- An integral characterization (e.g. volume flow in a given time) of biological tissues (cell culture, Tissue Engineering)
- Characterization of technical tissues (synthetics, metal...)
- Filter techniques
- Diaphragm techniques
- Impermeability analysis

The NanoPerm System

NanoPerm is used for the measurement of permeability of biological and technical tissues for liquids. The system is used to characterize tissues (e.g. in Tissue Engineering), because it allows to even measure the smallest flow rates through tissues. The flow rates are measured in nanoliter steps. NanoPerm allows the individual adjustment of all parameters needed to control the flow rate over time. Individual parameters are the choice of tissue, the choice of permeating liquid, the pressure, the temperature and the control of the liquid level.

Key features of NanoPerm

- A pressure gradient between the upper part and the lower part of the system leads to the permeation of the liquid through the tissue
- The liquid level control registers even the smallest loss of volume
- The microdose system most accurately maintains a constant liquid level above the tissue
- It is possible to add supplements to the system by using an injection port during the measurement
- There is a continuous data acquisition and recording
- The data evaluation and documentation can be achieved by commonly available software (e.g. Excel)

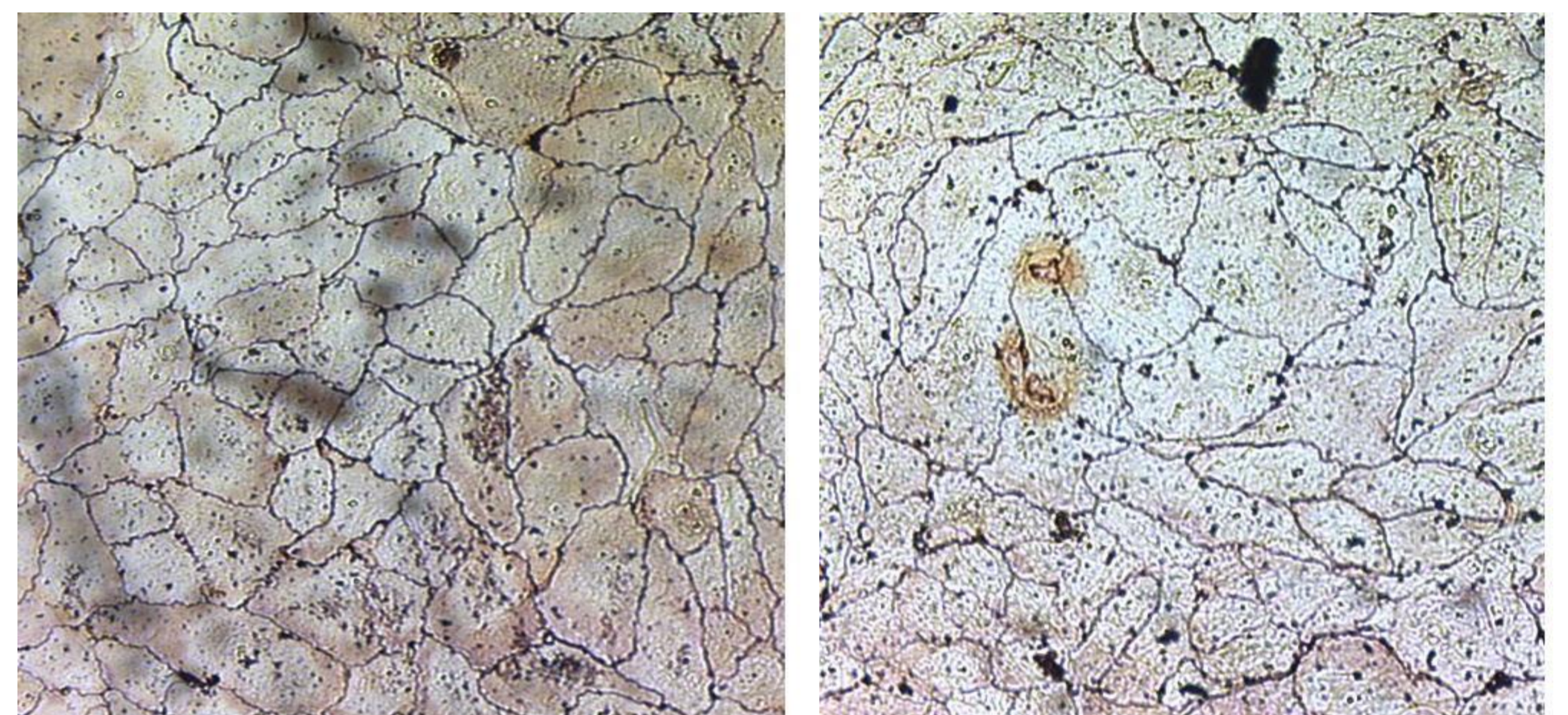


Customizing:

- Integration of a Microscope incl. image acquisition and editing
- Integration of software for individual analysis
- Increase of degree of automation

Integral characterization of biological tissues / cell cultures

Analysis of cell-cell-contacts / Intercellular liquid transport



- Tight cell-cell contacts / No cell dehiscences
- Human umbilical venous endothelial cells (HUVECs) on extracellular matrix (ECM)
- Control

- Intercellular gaps and cell dehiscences
- HUVEC on ECM after hyperosmolar incubation

Staining of cell-cell-contacts with silver nitrate

System regulation after a pressure increase in the upper part of the system

