biomagnetic sensing SFB 1261

Magnetoelektrische Sensoren in der Medizin

Magnetoelectric Sensors:
From Composite Materials to Biomagnetic Diagnostics

Magnetoelectric Sensors for (Bio-) Medical Applications

C A U Kiel University Christian-Albrechts-Universität zu Kiel

UK SH UNIVERSITÄTSKLINIKUM Schleswig-Holstein

UNIVERSITÄTS KLINIKUM HEIDELBERG

Fraunhofer ISIT

IPN

Lumpsum Proposal – High-Resolution Visualization

biomagnetic sensing SFB 1261

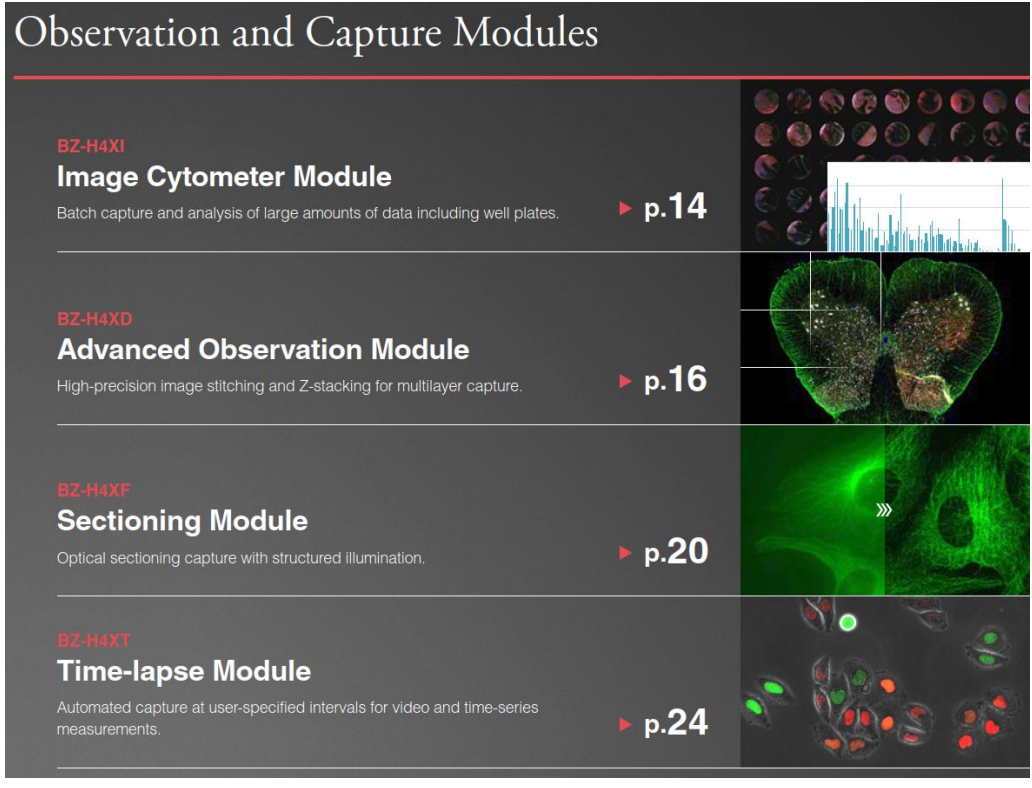
Overview of the proposal	
Title	Add-on modules for enhanced observation and analysis on fluorescence microscope
Required money	25.000 Euro
Project	B12
PI for correspondence	Zeynep Altintas
Short description	We propose the purchase of three add-on modules for the Keyence fluorescence microscope that we have in our lab. The modules include BZ-H4XD (Advanced Observation Module), BZ-H4XF (Sectioning Module), and BZ-H4XT (Time-lapse Module). These modules will enable high-precision image stitching, optical sectioning, and automated time-lapse imaging, respectively. They are essential for detailed visualization of fluorescently labelled nanomaterials and their interactions with various templates and cells. The enhanced imaging capabilities will support high-quality data acquisition and strengthen the impact and visibility of our research outcomes in B12 as well as other projects we collaborate within CRC1261 and ExC.

Lumpsum Proposal – High-Resolution Visualization

biomagnetic sensing SFB 1261

Further explanation

The proposed modules will be broadly applicable across several ongoing and planned research projects. Within the B12 project of CRC-1261, we are developing fluorescent magnetic molecularly imprinted polymers (MIPs) for biosensing applications. Currently, our fluorescence microscope is used mainly to detect MIP particles on sensor chips; the new modules will allow us to study their spatial distribution, structural integrity, and behavior over time, as well as their interactions with fluorescent templates. In later stages, we plan in-vitro studies to assess nanomaterial toxicity and biocompatibility, where live-cell and time-lapse imaging will be crucial. The modules will support high-resolution and time-resolved imaging essential for material characterization.



Overall, these additions can significantly enhance our imaging capabilities and strengthen the scientific quality and impact of our research.