

Commercially-available single-objective light sheet microscope

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Abstract

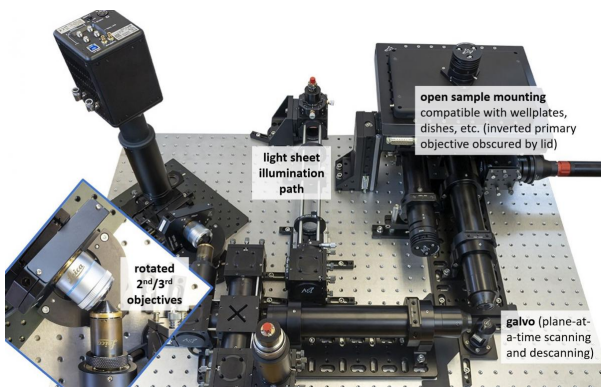
I will discuss the newly-available single-objective light sheet microscope from ASI/Applied Scientific Instrumentation in collaboration with Leica Microsystems including news since its initial announcement in December 2022. I will also discuss light sheet microscopy more generally and highlight other ASI light sheet offerings, as well as ASI-made modular microscopes in general.

ASI offers a OPM/SCAPE-type microscope system that enables 4D fluorescence imaging of biological samples at high speed and low light dose. Successful validation of the system captured microtubule dynamics with resolution of approximately 400 nm over a field of view of more than 300 μm and camera-limited frame rate.

This microscope is an ideal replacement for confocal microscopy for volumetric imaging applications. It accommodates the same sample mounting but allows for faster imaging of dynamic processes with negligible bleaching and phototoxicity.

The system is:

- flexible and customizable to fit various user needs
- affordable compared with alternative systems
- well-suited to image cells, organoids, or cell cultures
- compatible with well plates, 35 mm dishes, and chamber slides
- compatible with most sCMOS cameras and laser launches
- offers camera-limited frame rates and with millisecond flyback for fast volumetric imaging
- compatible with a range of environmental control options
- can be operated with open-source software



References

1. <https://www.asiimaging.com/products/light-sheet-microscopy/single-objective-light-sheet/>