Dear all,

ALMF is pleased to announce the workshop on ***Lattice Light Sheet*** (***LLS***) technique, implemented in ***Zeiss LLS7*** microscope (please see the detailed information below). This microscope is currently installed in ALMF and available for tests and running experiments.

The workshop will be run by Zeiss on **July 26th and 27th** in ALMF. Workshop will start with a lecture discussing principles and applications of the LLS technique, followed by hands-on sessions at the Zeiss LLS7 microscope. Researchers are welcome to bring their samples for the tests during the workshop.

The lecture will be open for everyone, no need to register. For participating in a hands-on session please contact ALMF ***before July 20th***. Please indicate which sample you will bring and your availability during hands-on time slots

Schedule

26.07 10:00-11:00 Lecture: Principles and applications of the Lattice Light Sheet 7
Hubert Bauch - Carl Zeiss Microscopy GmbH
Room: 202
Zoom link
Meeting ID: 916 0285 0179
Passcode: 040929

26.07 13:30-17:30 Hands-on workshops on Zeiss LLS7 microscope:
Hubert Bauch - Carl Zeiss Microscopy GmbH
Room: 13-514C (ALMF)

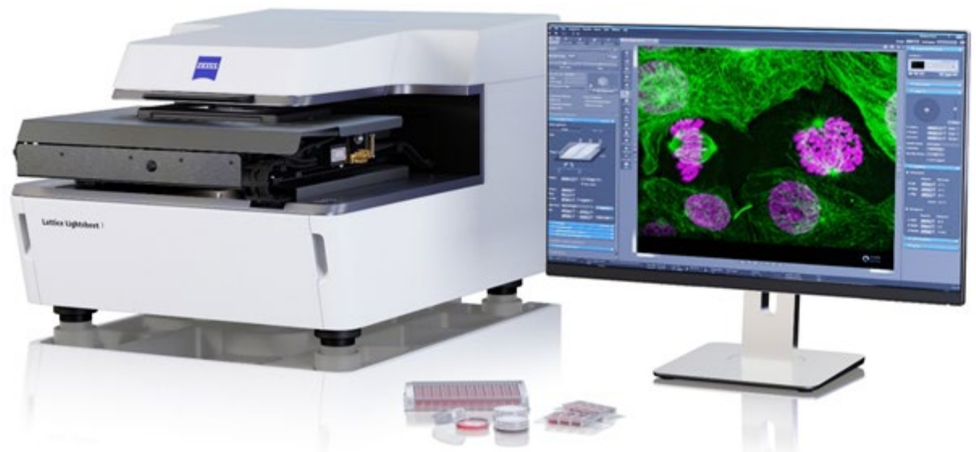
27.07 09:30-12:00 Hands-on workshops on Zeiss LLS7 microscope:
Gert Sonntag - Carl Zeiss Microscopy GmbH
Room: 13-514C (ALMF)

27.07 13:30-17:30 Hands-on workshops on Zeiss LLS7 microscope:
Gert Sonntag - Carl Zeiss Microscopy GmbH
Room: 13-514C (ALMF)

ZEISS Lattice Light Sheet 7 - Technical background and application

Light Sheet imaging generally allows gentle fluorescence imaging because only the focal plane is illuminated by the excitation light. Specimen structures in front and behind the focal plane are not exposed to light and therefore photobleaching and phototoxic effects are drastically reduced not to harm living samples. In traditional light sheet systems the minimum thickness of the light sheet is predetermined by the diffraction of light. The minimum thickness does not allow imaging with a clear subcellular resolution which would be very useful for live cell/tissue time lapse imaging.

A solution to overcome this limitation is to use a ‘lattice light sheet’ which was published by Eric Betzig in 2014. In contrast to the solution of Eric Betzig the ZEISS Lattice Light Sheet 7 features an inverted design to allow the use of standard cell culture vessels with glass bottom like 35mm dishes, multi well slides, etc. The system allows extremely gentle long-term fluorescence imaging as well as high speed imaging with a maximum speed of 3 volumes/s under physiological conditions with subcellular resolution. Furthermore, the results show a nearly isotropic resolution in the lateral and axial direction which is beneficial for 3D visualization and quantification.



More information can be found at the webpage:

www.zeiss.com/microscopy/int/products/imaging-systems/lattice-lightsheet-7.html