MESOSCOPE

**Location:** CSB L10 Support Room 16

**Applications:** Imaging neuronal activity in noncontiguous areas working in unison in live behaving transgenic mice, using calcium sensors such as GCaMP6f.

**Specifications:**
- A two-photon microscope that can rapidly scan at random positions with a large field-of-view (5mm diameter and 1mm depth)
- InSight X3 DeepSee pulsed IR laser (680nm 1300nm) with second output at 1045nm
- Two-channel high-sensitive GaAsPPMT Detectors
- Lateral resolution 0.66 microns and axial resolution ~ 4 microns at the centre

**Contact:** Asst Prof Hiroshi Makino at hmakino@ntu.edu.sg
MULTI-PHOTON MICROSCOPE FOR INVIVO IMAGING

PRAIRIE ULTIMA TWO-PHOTON MICROSCOPE

Location: CSB L10 Support Room 5

Applications: Two-photon imaging, uncaging, widefield optogenetic stimulation

Specifications:

- Prairie Ultima two-photon microscope on a breadboard
- The upright microscope stage can be customised for manipulating in xyz-θ
- Excitation wavelength for imaging 700~950nm; for uncaging 405nm and 561nm
- Emission wavelength: 509nm; 583nm
- Objective lens: Olympus LUMPlanFL/IR
- Detectors: multi-alkali and GaAsP PMTs

Contact: Prof George Augustine at George.Augustine@ntu.edu.sg
MULTI-PHOTON MICROSCOPE FOR OPTOGENETICS

OLYMPUS FV-MPERS

Location: CSB L10 Support Room 8


Specifications:
• Multi-photon system built around FVMPERS upright microscope with hybrid scanning unit
• Two pulsed IR lasers: MaiTai HP DS and Insight DS
• Visible lasers: 405nm, 458nm, and 558nm
• Objective lenses: 10x W, 25x W, 40x W and 60x W
• Filter sets to image in cyan, yellow, green

Contact: Prof George Augustine at George.Augustine@ntu.edu.sg

Latest as of 1 June 2020
MULTI-PHOTON MICROSCOPE WITH FLIM-FRET

OLYMPUS FV-MPE

**Location:** CSB L10 Support Room 7

**Applications:** Optogenetic stimulation and patch clamp in acute brain slice, FLIM-FRET

**Specifications:**
- Multi-photon system built around FVMPE upright microscope
- Tunable, pulsed IR laser
- Visible lasers: 405nm, 488nm, 599nm, and 635nm

**Contact:** Prof George Augustine at George.Augustine@ntu.edu.sg
TWO-PHOTON MICROSCOPE FOR IN VIVO DEEP TISSUE IMAGING

LEICA DM6000

Location: Academia Basement
Large Animal Procedure Room

Applications: Suitable for in vivo deep tissue imaging of non-human primates, small animals and mice, confocal imaging of cells/tissue sections

Specifications:
• Upright microscope (DM6000) with motorised filter turret, nosepiece
  • One-photon confocal imaging using white light laser
  • Two-photon deep tissue imaging using infrared OPO laser
• Stereo Microscope
• Assorted objective lenses (11) from 1x to 63x
• Assorted filter cubes (13) that cover entire visible spectrum, including CFP/YFP FRET, FURA2
• Hamamatsu EMCCD-Camera for lowlight detection DFC365 monochrome camera for routine fluorescence imaging
  • MC170 HD colour camera for H&E imaging
• 1 MA-PMT detector, 2 GaAsP-PMT Detectors
• LAS Control Software
• XYZ-stage to image non-human primates

Contact: Asst Prof Yusuf Ali at yusuf.ali@ntu.edu.sg

Latest as of 1 June 2020