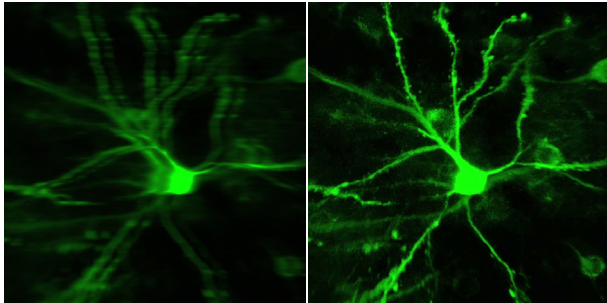


FEMTONICS FOCUSPINNER

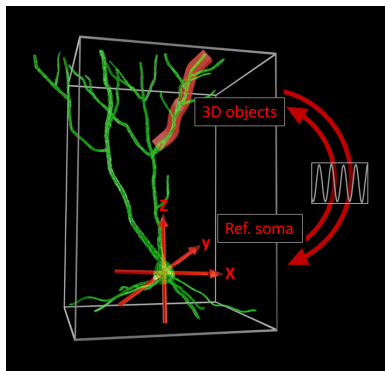
Enhance your in vivo measurements effortlessly with the Femtonics FocusPinner, which offers **REAL-TIME MOTION CORRECTION** in the Z (axial) direction, effectively eliminating motion artifacts.



Example of real time motion correction.
(Left) Without motion correction, (right) with motion correction. Fine details of the neuron can be distorted.

Our solution takes advantage of acousto-optics technology and elevates it to a whole new level. The algorithm is based on correction calculations derived from selecting stable objects within the field of view (FOV), which serve as reference points during scanning. With our method providing an effortless means to scan in any direction in 3D, reference

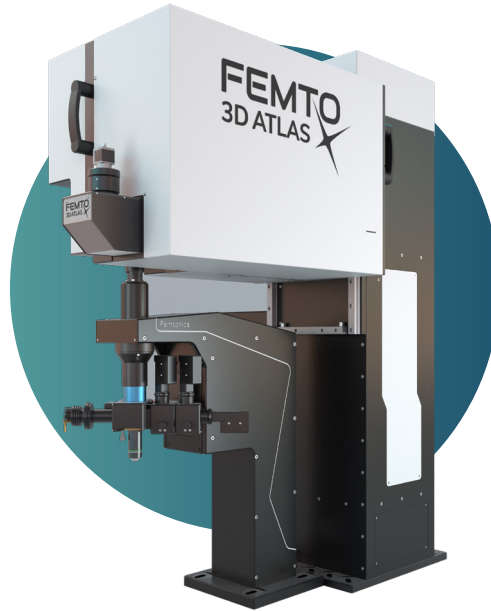
measurements are equally efficient in the Z direction as they are in the XY direction, which is a unique feature of the Femtonics FocusPinner.



NEW SOFTWARE FEATURES OF THE FEMTO3D ATLAS

- 100 kHz sampling rate per point.
- Advanced photostimulation features.
- Image overlay functionality for chronic imaging.
- Optimized precalculation time.
- Common template for post-hoc motion correction.
- Matching of camera and 2P images with a haircross.
- Tiled Imaging functionality.
- Tiled ZStack functionality.
- Compatibility with Suite2P and FIOLA packages for cell and Ca signal extraction.
- Support for cameras.
- Windows 11 compatibility.

**LOOKING FOR INNOVATIVE
SOLUTIONS OF YOUR OWN?**

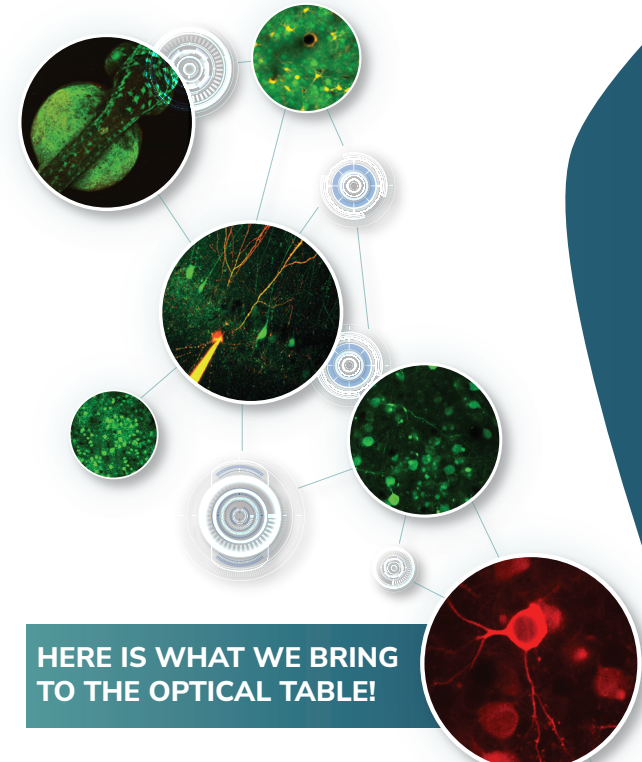


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THINKING AHEAD
FEMTONICS
MICROSCOPY

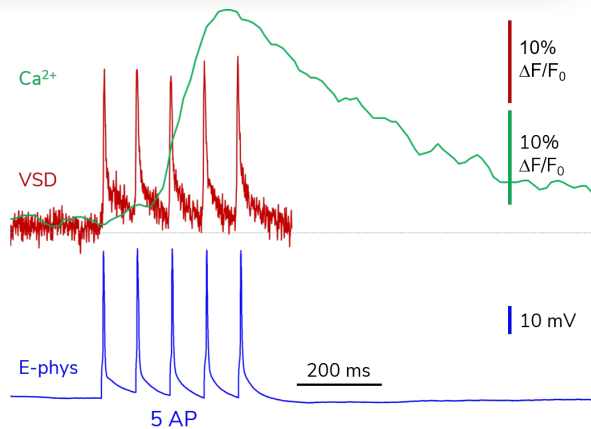
WHAT'S NEW AT FEMTONICS?

EVERY YEAR WE STRIVE TO IMPROVE OUR **TWO-PHOTON MICROSCOPES**, AND DEVELOP **BRAND NEW TECHNOLOGIES** TO MEET THE CURRENT NEEDS OF THE SCIENTIFIC COMMUNITY.



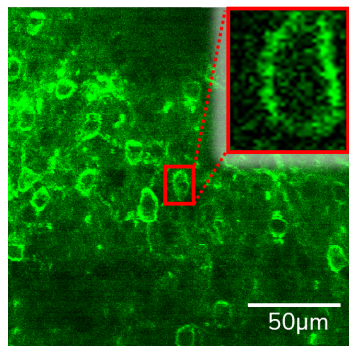
**HERE IS WHAT WE BRING
TO THE OPTICAL TABLE!**

VOLTAGE IMAGING

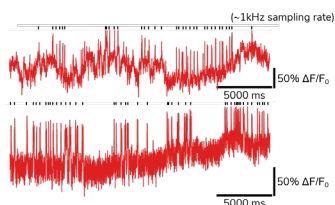


Validation of concept comparison of acousto-voltage imaging and electrophysiology results.

Recently, advancements in genetically encoded voltage indicators have allowed scientists to directly measure changes in membrane potential.



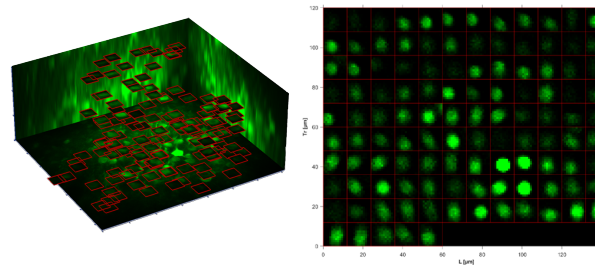
To leverage this development, we have enhanced our advanced imaging system to accommodate all voltage imaging requirements. Femtonics' acousto-optical technology provides a unique and reliable off-the-shelf solution for capturing action potentials, even up to 100 kHz in multiple horizontal planes simultaneously, with online motion correction.



In vivo voltage imaging in mice with chessboard ROIs

GRIN LENS OPTICS

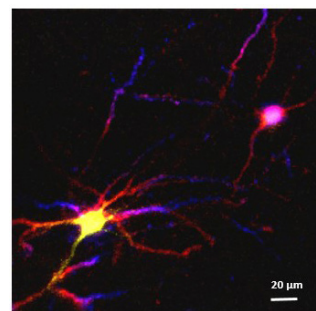
With two-photon microscopes, observing the upper layers of the brain is a straightforward task. However, reaching deeper brain regions is more challenging, as the energy required by the optics could also lead to photodamage in the animal. Grin lens imaging was developed to circumvent this problem by inserting a lens that enables focusing even in the thalamic regions. Acousto-optics and the GRIN lens work together seamlessly in the FEMTO3D Atlas microscopes.



Validation of concept images for acousto-voltage imaging and Grin lens compatibility.

BESSEL BEAM OPTICS

Bessel beam imaging provides a method for rapidly acquiring volume images reflected on a 2D surface by elongating the focal point into a beam. In our acousto-optic system, we can recreate fast volumetric images without any loss of 3D information using our drift scanning methods, thus retaining all the advantages and even improving upon them.



Rapid volumetric imaging using drift scans, with depth information.

FEMTOSTAGE

The highest quality precision motorized stage, the **FEMTOSTAGE**, is now available for your upright laboratory microscope. It's a brand-new, self-developed motorized XY stage equipped with a flexible sample holder. Custom configurations are also available to adapt it to the specific needs of the user. The FemtoStage is suitable for both in vivo and in vitro experiments.



SPECIFICATIONS:

- Size: 600 × 510 × 73 mm (without legs)
- Travel range: ± 35 mm (XY, motorized), 45 mm (Z, manual)
- Load capacity: 6 kg
- Minimum step size: 50 nm
- Flatness: within 0.15 mm