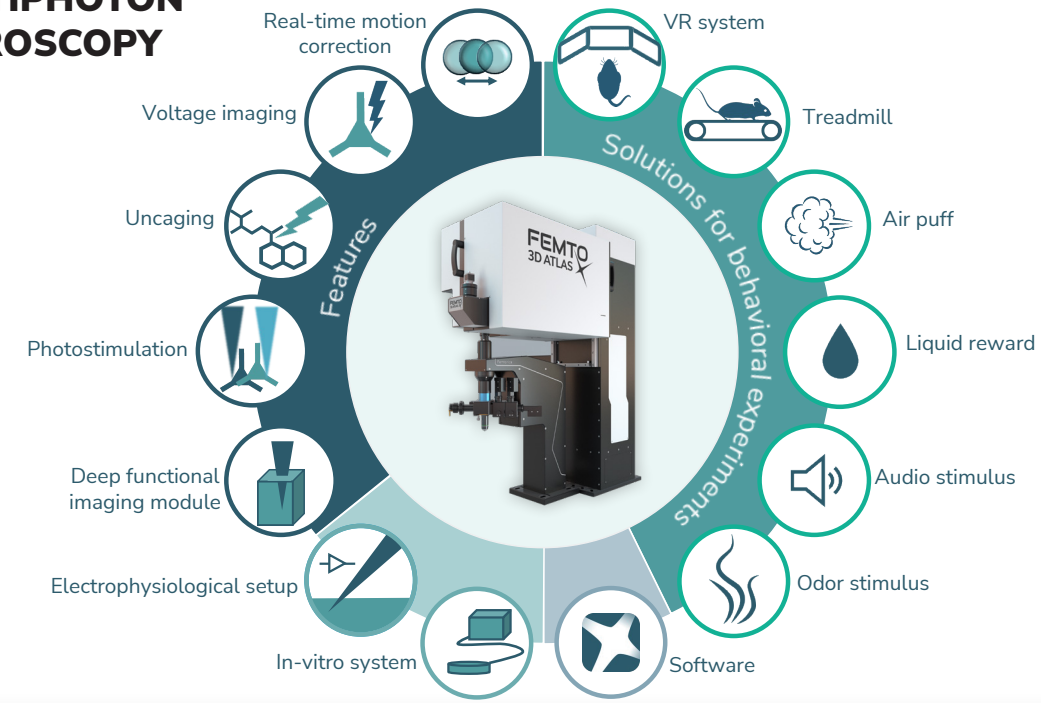
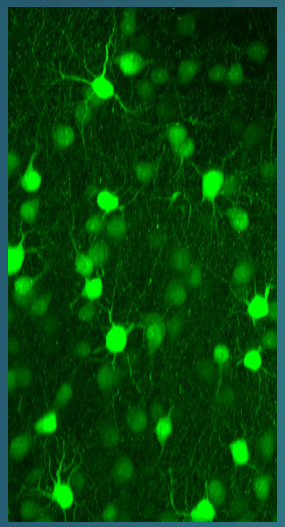
ALL-IN-ONE BEHAVIOR + ULTRA FAST 3D MULTIPHOTON MICROSCOPY



LIST OF POPULAR APPLICATIONS



- BEHAVIOR EXPERIMENTS
- DEEP FUNCTIONAL IMAGING
- VOLTAGE IMAGING
- OPTOGENETICS
- BLOODFLOW IMAGING
- NETWORK IMAGING
- DENDRITIC IMAGING
- UNCAGING EXPERIMENTS
- 3-PHOTON MICROSCOPY
- FLIM
- ELECTROPHYSIOLOGY
- CHRONIC IMAGING

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THINKING AHEAD

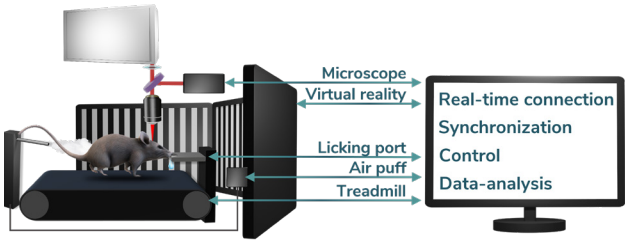
FEMTONICS MICROSCOPY

APPLICATIONS

DISCOVER THE ENDLESS POSSIBILITIES OF THE STATE-OF-THE-ART FEMTONICS MICROSCOPES

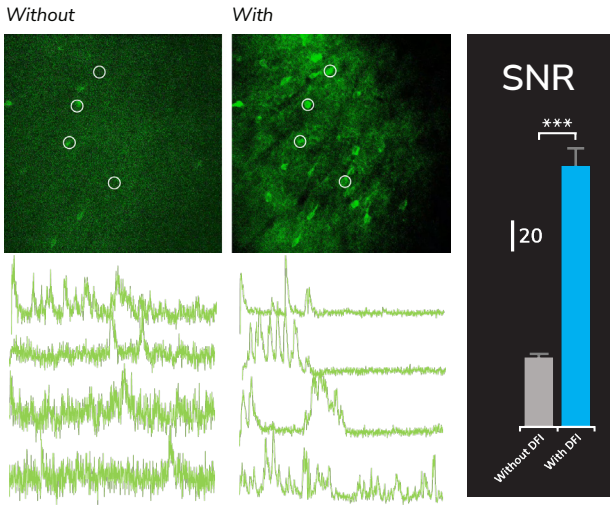
COMPLEX BEHAVIOR EXPERIMENTS

Imaging neural activity in behaving animals is challenging, since all kinds of movement may generate imaging artifacts. With the hardware and software solutions provided by Femtonics, we promise, that your experiments will be at its best behavior!



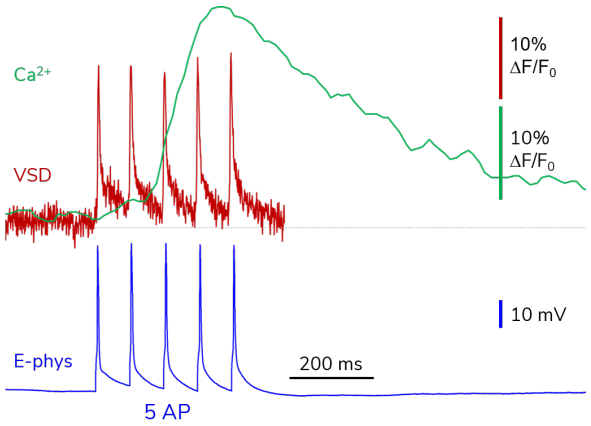
DEEP FUNCTIONAL IMAGING

One of the most significant advantages of two-photon microscopy is the ability to examine the deeper layers of the neocortex. Deep Functional Imaging with the FEMTO3D Atlas and FEMTO3D Atlas Plug & Play provides fast, 3D imaging means to access regions even around 1 mm deep.

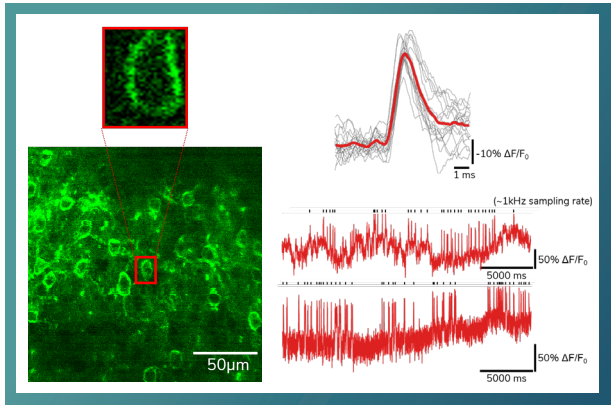


Improved SNR using Femtonics DFI package at –850 micrometers in cortex. Green traces: example ROIs. Bar graph: SNR

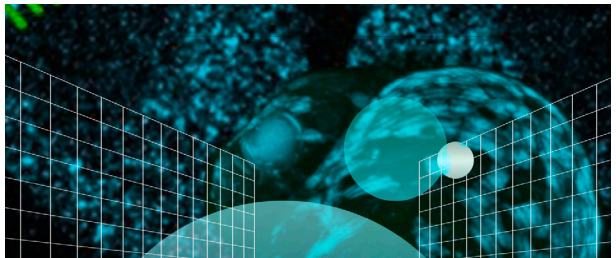
3D VOLTAGE IMAGING



Recently, the development of better genetically encoded voltage indicators allowed scientists to directly measure membrane potential changes. To take advantage, we need an advanced imaging system, which can image above the kHz speed. Femtonics' acousto-optical technology offers a unique and reliable off-the-shelf solution to capture action potentials, even up to 100kHz in multiple horizontal planes simultaneously.

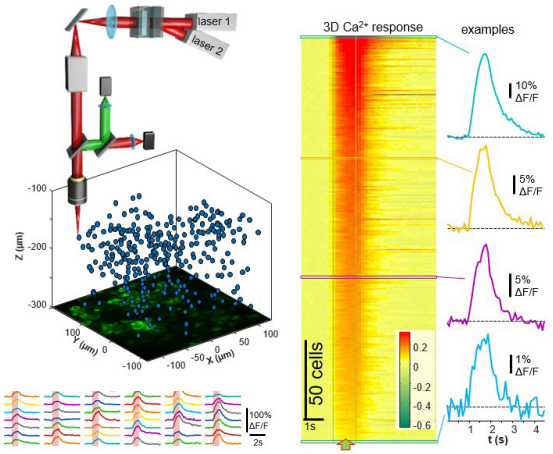


In vivo imaging in mice with chessboard ROIs



3D OPTOGENETICS

Photostimulation can be interlaced with imaging by selecting a scan area covering one or more somata situated anywhere in the 3D volume. With the timing of the stimulus under our control, the spatial and temporal properties of the network elements can be examined holistically and even chronically.



Simultaneous photostimulation and imaging

BLOODFLOW IMAGING

Abnormalities in hemodynamics are linked to various disease states, such as stroke, Alzheimer's, etc. However, to better understand these associations, more precise optical techniques are needed for interrogating blood flow velocity *in vivo* in 3D. The FEMTO3D Atlas microscopes employ superior techniques to perform high-quality blood flow tracking at the cellular level.