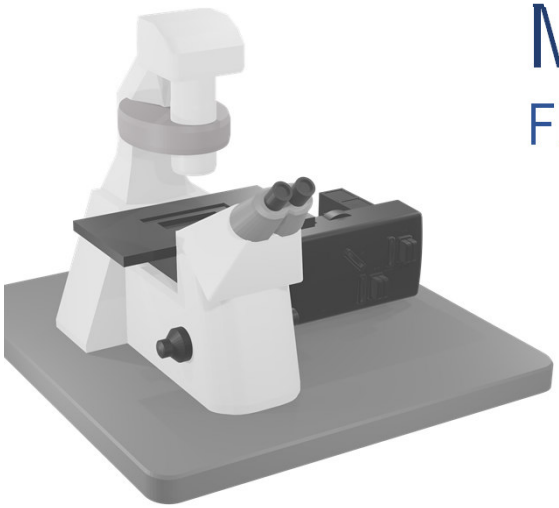


Molecular Interaction Imager

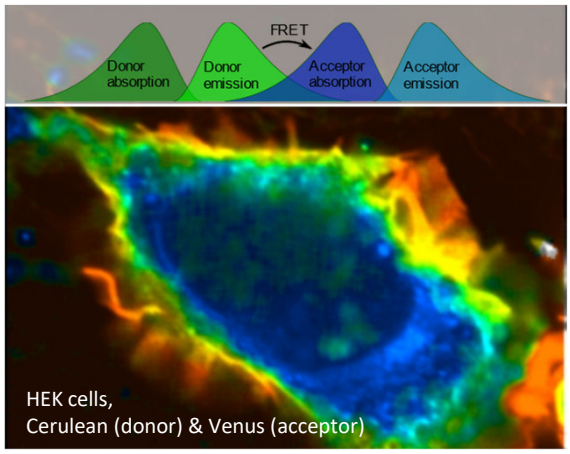
FLIM-FRET microscopy out of the box

Comfortable and reliable – calibration-free FLIM-FRET imaging with B&H's renowned lifetime precision.

This turnkey FLIM microscope is configured to give you the best results out of the box. Equipped with compact and all fiber coupled picosecond pulsed diode-lasers for all FRET capable fluorophores from 375 nm to 785 nm, it provides the results you need, both at university and in the medical lab, at an unbeatable price.

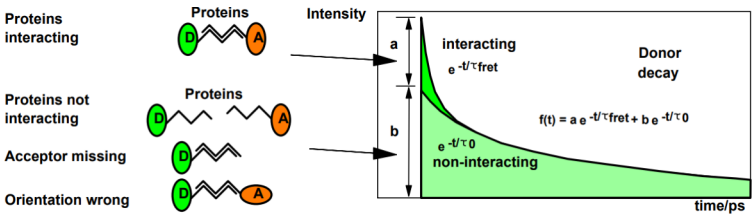
Make molecular interactions visible

Direct, calibration-free access to molecular interaction – that is the power of FLIM-FRET. Förster Resonant Energy Transfer (FRET) is a process where an excited fluorophore (donor) can transfer the excitation energy to a neighboring fluorophore (acceptor) if their respective emission and absorption spectra overlap. Even if the fluorophores are used only as staining agents, FRET measures the interaction between the labelled proteins of interest and can be evaluated from the fluorescence decay. The efficiency of this excitation transfer strongly depends on the distance between the interacting molecules. Often called a molecular ruler, a FRET efficiency measurement reveals the interaction of labelled molecules and can be related to molecular distance on the nanometer scale.



Calibration-free FLIM-FRET

Standard FRET measurements rely on the intensity variations of the emitted light and require various calibration measurements for interpretation. These uncertainties are elegantly avoided by a lifetime measurement based FRET experiment: FLIM-FRET. An isolated donor molecule (no excitation transfer to the environment) has a long fluorescence lifetime with emission probabilities long after excitation. If an acceptor molecule is near, the excitation can be transferred to the acceptor with a certain probability. This excitation transfer is observed as a shortening of the donor lifetime.

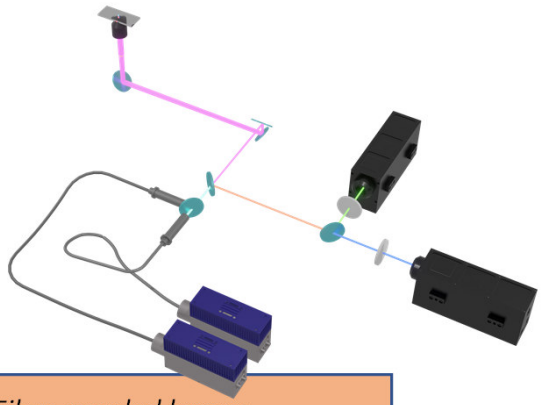


The volume probed by the laser beam typically contains both interacting and non-interacting donor populations, thus the lifetime trace is a bi-exponential decay with a fast (interacting) and a slow (non-interacting) component. A precise measurement, B&H's claim to fame, can reliably determine the lifetime ratios from a accurate fit in the analysis suite 'SPC image NG'. The lifetime ratio reveals the FRET efficiency from a single donor FLIM image. Furthermore, the measurement is self-calibrating as the non-interacting lifetime is always measured at the same point of the sample! FRET experiments couldn't be simpler.

Comfortable and versatile

This molecular interaction imager is the scalpel among multi-tools. Less uncertainties in your research without loss of capability: fixed wavelength excitation and well defined detection filters make your experiments comparable – every time. Naturally, filter sets are available for your application. CFP/YFP/GFP? GCaMP? FLIM-FRET, FC(C)S or imaging in neurology? Drop a new filter unit in and get on with your science. Reduce your system price, pay only for the experiments you are really doing.

Fully motorized sample movement for large area stitched imaging, 3D imaging and video rate FLIM-contrast recording of dynamic changes are only a few of the highlights. All at the fraction of the cost of a multi-tool. Go to www.becker-hickl.com or follow the QR code below for a quick quote.



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- Fully motorized sample stage
- 3D Z-stack FLIM
- Video rate recording ready – Express FLIM*
- Seamless analysis integration including Phasor Plot +, image segmentation by lifetime, FCS analysis
- Area and line scanning modes, as well as true point measurements for correlation measurements.
- Fast laser scanning unit for optimal image acquisition
- Basic detection filter kit, chosen for your experiment.

*Depends on choice of time-tagging unit

Options:

- Choice of laser system
  - Picosecond pulsed laser diodes from UV to NIR
  - Femtosecond pulsed lasers for multiphoton microscopy
  - Tunable laser units with frequency doubling unit – seamless excitation from visible to MidIR.
- Choice of fast and efficient Becker&Hickl hybrid single photon detectors
- Incubator with optional environment control for live cell work.

Complete a quote request form or speak to a representative.

Examples:

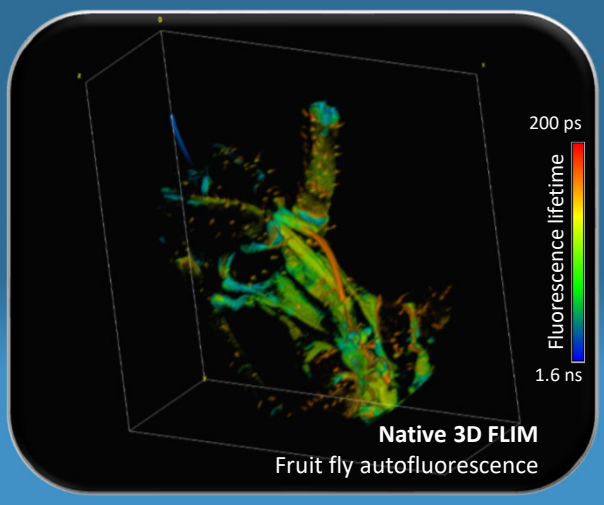
Multiphoton Metabolic Imager

- 2x TOPTICA FemtoFibre Ultra (780 nm & 920 nm)
  - ~1 W, <100 fs, 80 MHz, AOM+GDD
  - Wavelength multiplexed excitation
- Ultra-precise lifetime measurements, IRF ~20 ps
  - Time-channels down to 213 fs, 3 ps jitter
  - Parallel dual channel acquisition
- Detection max. 250 nm – 720 nm
  - NADH: 420 nm – 480 nm, FAD: 500 nm – 550 nm

FLIM-FRET Molecular Interaction Imager

- 2x B&H picosecond diode lasers,
  - 60 ps - 120 ps FWHM.* 20 MHz, 50 MHz, 80 MHz, CW
- High photon rate measurement, IRF ~100 ps*
  - 80 MHz continuous, 120 MHz peak. 4 ps time-channels, ~17 ps jitter.
  - Parallel dual channel acquisition
- For any FRET pair, e.g. GFP/YFP, Cerulean/Venus, etc.

*depending on wavelength



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