

GMP

GENERAL
MICROTECHNOLOGY
& PHOTONICS

Proud sponsor of

Winter School of Experimental Molecular Dynamics & Kinetics

22 | February
23 |
24 | 2021

<https://winterschool.cc/experimental-molecular-dynamics-and-kinetics>

Awards by: GMP, SLAC National Accelerator Laboratory



Ultrafast and multidimensional spectroscopy

PHAROS

High Energy Femtosecond Lasers



- 190 fs – 20 ps tunable pulse duration
- 2 mJ maximum pulse energy
- 20 W output power
- 1 kHz – 1 MHz tunable base repetition rate
- Automated harmonics generators (515 nm, 343 nm, 257 nm, 206 nm)

HARPIA

Comprehensive Spectroscopy System



- Modular and extendable
- Femtosecond multi-pulse transient absorption and reflection measurements
- Femtosecond fluorescence upconversion
- Time-correlated single-photon counting (TCSPC) and stimulated Raman scattering (FSRS)

**Laser Spectroscopy**

FTIR, stand-off detection
and open path spectroscopy
across the near and mid-IR.

*“Enables the scientific
community and industrial
partners to push boundaries”.*

**520 and 1040 nm
femtosecond laser sources**

- Pulse duration < 150fs
- Pulse energy = up to 35nJ
- Rep-Rate = 100MHz

**near-IR OPO**

- 1.4 μm – 4 μm (7100 cm^{-1} – 2500 cm^{-1})
- Signal Power up to 850mW

**mid-IR OPO**

- 5 μm – 12 μm (7100 cm^{-1} – 2500 cm^{-1})
- Signal Power up to 850mW

Applications

Quantum Imaging

Microscopy

Mid-IR 'fingerprint' Spectroscopy

FTIR/Stand-off Detection Spectroscopy

Environment



Raman Microscopy

RMS 1000

Characteristics:

- **Truly Confocal** – multiple position pinhole for high spatial resolution, fluorescence and background rejection and application optimisation
- **Five-Position Grating Turrets** – for unrivalled spectral resolution from $<0.1 \text{ cm}^{-1}$ and coverage over $5 \text{ cm}^{-1} - 30,000 \text{ cm}^{-1}$
- **Two Spectrograph Options** – standard compact and long focal length spectrographs available for ultimate resolution, sensitivity, and stray light rejection
- **Four Simultaneous Detectors** – up to 4 detectors can be installed, including high efficiency TE-cooled CCDs, EMCCDs, InGaAs and more
- **Photoluminescence Microscopy, Time-Resolved Measurements, Fluorescence Lifetime Imaging (FLIM)** – extend the Raman capabilities to fluorescence and beyond



Check it out:

<https://www.gmp.ch/spectroscopy/raman-spectroscopy/raman-microscope-rms1000>

Photoluminescence Spectroscopy

FLS 1000

Characteristics:

- Complete modular construction enables maximum flexibility and upgradability
- Industry leading sensitivity $\text{SNR} > 30,000:1$
- Unrivalled spectral coverage from the deep UV to the mid-IR up to 5,500 nm
- 325 mm focal length monochromator performance for high spectral resolution and excellent stray light rejection
- Multiple light sources, detectors, single or double monochromators are available – upgrade at anytime
- State-of-the-art Fluoracle® software package for data acquisition, analysis and presentation



Check it out:

<https://www.gmp.ch/spectroscopy/spectrometer/photoluminescence-spectrometer-fls1000>

Complementary products for your lab:



Antivibration by



Joined tables

- active and passive anti-vibration tables
- floor vibration cancellation systems

These optical tables and isolation systems offer industry-leading performance and rigidity thanks to an all-steel construction and the highest core density and smallest honeycomb cell area on the market.



- Rigid coupling between optical tables.
- End-to-end coupled tables in "L" or "T" shapes.
- Precision ground and aligned joiner plate system
- The tables can, at any time, be separated and supported individually or rejoined.

More information:

<https://www.gmp.ch/vibration-isolation-table/table-breadboard-optical-table/optical-table-optical-tops-breadboards-and-supports>

STACIS III

Flexible advanced active vibration isolation system. Employing advanced inertial vibration sensors, sophisticated control algorithms, and state-of-the-art piezoelectric actuators, STACIS cancels vibration in real time by continuously measuring floor activity, then expanding and contracting piezoelectric actuators to filter out floor motion.



Application note:

<https://www.techmfg.com/learning/applicationnotes/table-base-at-ifw-dresden>

More information:

<https://www.gmp.ch/vibration-isolation-table/nanotechnology-anti-vibration/stacis-iii-active-piezoelectric-vibration-cancellation-systems>



Linear Stages

Zaber design and manufacture precision positioning devices that are affordable, integrated, and easy to use. Devices are used in many different applications and markets, such as photonics and optics, life sciences, microscopy, and industrial automation.

X-LDQ-AE Series

Zaber's LDQ-AE Series devices are motorized linear motor stages with high precision and speed capabilities. The built-in linear encoder allows closed-loop servo positioning. The LDQ-AE's innovative design allows speeds up to 1.5 m/s and a minimum incremental move of 25 nm.

See more: <https://www.gmp.ch/positioning-motion-control/actuator-linear-rotation-stage/linear-motor-stages-with-built-in-control>

X-LRT-AEC Series

are computer-controlled, motorized linear stages designed for positioning high loads to within 20 μ m accuracy. An integrated linear encoder combined with stage calibration provides high accuracy positioning over the full travel of the device.

Devices have a 300kg load capacity, 100–1000mm travel options, and an integrated linear encoder with 50 nm resolution, which provides slip/stall detection and position correction.

See more: <https://www.zaber.com/products/linear-stages/X-LRT-EC>

X-LHM-E Series

computer-controlled, motorized linear stages with a compact size and affordable price tag. They are stand-alone units requiring only a standard 24 or 48V power supply.

These stages connect to the RS-232 port or USB port of any computer, and they can be daisy-chained with any other Zaber products. The daisy-chain also shares power, making it possible for multiple X-Series products to share a single power supply.

See more: <https://www.zaber.com/products/linear-stages/X-LHM-E>

GMP

GENERAL
MICROTECHNOLOGY
& PHOTONICS

Active in the fields of photonics, spectroscopy, laser and micropositioning for more than 40 years, we offer the instruments you need for successful research.

Our photonics specialised engineers are available for personal advice, demonstrations and tests to find the perfect fit for you!

Check out our [product guide](#) and [contact us!](#)