Specialise Instruments
INTELLIGENT SOLUTIONS

Specialise Instruments
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Specialise Instruments Mkt. Co.

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Email : anguraj@simc.co.in
Mobile : +91 9791101350

CONTENTS

CRYOGENICS

Lake Shore CRYOTRONICS

LAKESHORE MAGNETOMETER SYSTEMS

7400 S Series Vibrating Sample Magnetometer
Features of the 7400 S Series

1 × 10-7 emu noise floor at 10 s/pt
7.5 × 10-7 emu noise floor at 0.1 s/pt
Max - field 3.42 T
Widest available temperature range—4.2 K to 1,273 K
Vector, Magnetoresistance and autorotation options
FORC & Magneto caloric effect software.

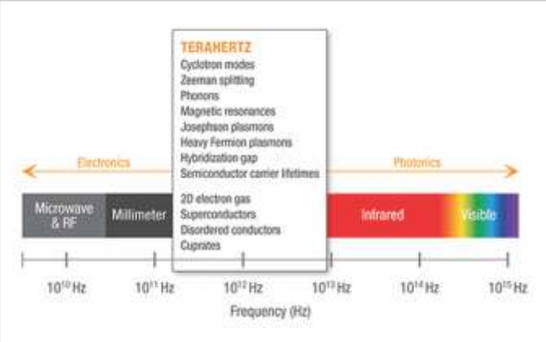
8400 SERIES HALL EFFECT MEASUREMENT SYSTEM

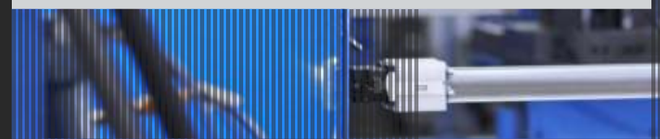
Features of the 8400 Series

Ideal for variable temperature measurement and mobilities from 1 to $10^6 cm^2/Vs$
Optional AC field extends mobility measurement range down to $10^{-3} cm^2/Vs$
Maximum DC fields to 1.67 T (8404) and 2.25 T (8407)
Optional AC fields to 1.18 T (8404) and 1.31 T (8407)
Standard resistance range of 0.5 mΩ to 10 MΩ
High resistance option widens range to 200 GΩ
Low resistance option significantly reduces resistance noise floor
Temperatures from 10 K to 1273 K

8500 SERIES THZ SYSTEM FOR MATERIALS CHARACTERIZATION

Optimal solution for electronic, magnetic and chemical materials research and characterization.
Uses THz frequency energy and an integrated high field cryostat to measure material spectroscopic responses across wide range of frequencies, temperature and field.
Stimulates materials using THz frequency radiation from 0.1 to 10 THz.





CRYOGENICS

Lake Shore CRYOTRONICS

CRYOGENIC PROBE STATIONS

Temp 1.6K – 675
Field: Max Field upto 3T (Horizontal / Vertical)
Max probe up to 6 probe arms
Max sample size 2in sample diameter (std) / 4” sample diameter (Model FWPX)
Vacuum: 10^{-5} torr (std) / 10^{-7} (Optional)
Cryofree options also available

Model CPX High Performance

Model TTPx Tabletop

TEMPERATURE MEASUREMENT AND CONTROL

Cryogenic Temperature Controllers

Monitor & control temperatures
from <300 mK to over 1,500 K. Choose from variety of sensor inputs, sensor excitation ranges, display features, and interfaces.

Cryogenic Temperature Monitors

Monitor temperatures from 300 mK to over 800 K.
Choose from one or eight
standard inputs. USB, IEEE-488 and
RS-232C interfaces, relays, and analog outputs available.

Cryogenic Temperature Sensors

Measure temperatures from <10 mK to over 1,500 K. A wide selection of diodes, CERNOX, RTDs, thermocouples, (Germanium) HR Series, Platinum and mounting packages are available.

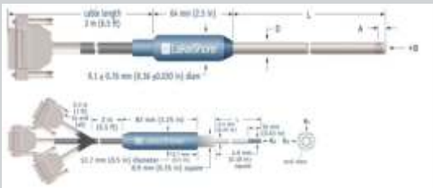
MAGNETIC MEASUREMENT AND CONTROL

Gaussmeters

Measure both DC and AC magnetic fields, and control DC fields. Ideal for both industrial and scientific research applications. Handheld and benchtop units.

Hall Probes

Axial, transverse, multi-axis, gamma, and tangential Hall probes for measuring magnetic flux density. Choose from a wide range of lengths and thicknesses.
Probes also available for cryogenic applications.

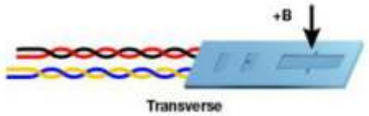


Fluxmeters

Measure total flux in industrial and measurement system settings. Ideal for magnet testing and sorting, and as the main component in BH loop or hysteresis graph measurement applications.

Hall (Magnetic) Sensors

Small, compact axial and transverse Hall generators for measuring flux density. Available for use at cryogenic temperatures.



Leiden Cryogenics BV
Leader in Low Temperature Techniques

Dilution refrigerators: cryo & Cryofree models
Temperature down to <5mK

USM1600 (DILUTION LT UHV SPM WITH SC MAGNET)

Temp : lower than 40mK (dil fridge)
Magnetic Field 11T, 15T vertical or 9/2/2T vector magnet
Measurement : STM
Three electrical contacts on sample holder
(6 electrical contacts : Option)

FEATURES

Long holding time (Longer than 5 days) at the base temperature by Dilution refrigerator.
Stable STM (<0.1nm/h) at the lowest temperature.
High energy resolution (<0.1eV) in Magnetic field.

UNISOKU
TII Group
MUTUAL SATISFACTION

USM 1400 (VARIABLE TEMPERATURE UHV SPM)

temp : 5.5K to RT
Optional : Magnetic Field : 0.5T*
The magnet can be applied in USM1400TL.
Side loading :USM1400LL, in-situ deposition possible.
Top loading :USM1400TL, in-situ deposition possible.
X-Y Z piezo motor Lens stage can be installed in STM
Measurement : STM, AFM, Raman, TERS, Photonic SPM

FEATURE

Large NA(>0/35) internal Lens works well for the high efficiency photon detection.
Bottom mounted Helium tank realise the wide application such as optics and SEM.

USM 1300 (HELIUM 3 LT UHV SPM WITH SC MAGNET) (Top loading)

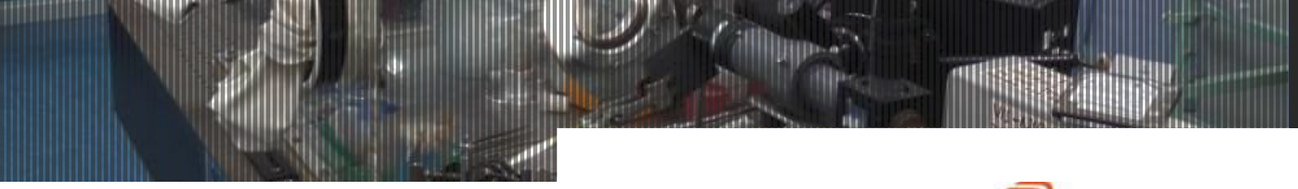
Temp : 0.4K - 100K
Magnetic field :11T, 15T vertical or 9/2/2T vector magnet
Measurement : STM, AFM

FEATURES

Below 1K with easy operation
Highly Delivery record (>50) and reliability.
Stable STM (<0.1nm/h) at the lowest temperature

Other available models : 1200 &1400-4P

CRYOGENICS



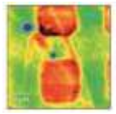
CRYOGENICS

Measurements Possible using Atomic/Magnetic Force MicroscopeState of Art Systems

Magnetic Domain Imaging

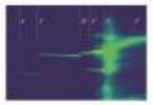
Piezo Response Force Microscopy

Kelvin Probe Microscopy

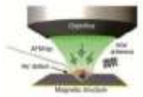


Measurements Possible using Confocal Microscope

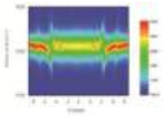
Quantum Dot Spectroscopy



Colours Centre in Diamonds

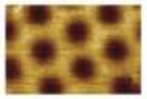


Raman Spectroscopy



Other SPM Measurements

STM on superconductors



Scanning Gate Microscopy

Scanning Hall Probe Microscopy

MICROSCOPY AT LOW TEMPERATURE & HIGH MAGNETIC FIELD

Attocube's State-of-the-art Systems are optimized for the operation in extreme environments and cover a wide range of well-established instruments including widely used techniques of scanning probe and confocal micrsocopy.

Measurements Possible using Atomic Force / Magnetic Force / Confocal Microscope State of Art Systems

State Of The Art Microscopy

- Patented attocube Positioning technology
- Powerful Electronics
- Variable temperatures & high magnetic field
- Robust & Reliable performance
- Flexible Upgrade options
- Large Scan at lower temperatures

CRYOGEN FREE CRYOSTAT

With the attoDRY series attocube provides unique helium free cryostats with umatched low mechanical vibrations, unusually low acoustic noise, and exceptional temperature stability.

attoDRY2100
Ultra Low Vibration
Fully Automated
touchscreen control

1.5K-300K, 9T (Std)

attoDRY1100
Ultra Low Vibration
Fully Automated
touchscreen control

4K-300K, 9T (Std)

attoDRY1100
Ultra Low Vibration
Manually Controlled
Economical,

4K-300K, 9T(Std)
(optional temp controller),

attoDRY 800
Cryo-optical table
Ultra Low vibration
Fully Automated
Touchscreen control
4K-350K

OTHER MEASUREMENTS AT LOW TEMPERATURE & HIGH MAGNETIC FIELD

Measurements for Magnetic Anisotropy

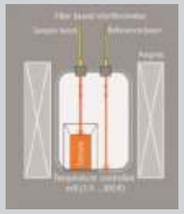
Product key features

- in-situ double rotation
- full field (e.g. 9 T) in 3D
- integrated chip carrier socket
- resistive encoder for closed loop operation

Measurements for thermal expansion & magnetostriction

Product key features

- Based on attocube's miniature fibre based interferometer
- Resolution down to 1nm(absolute) on mm sized samples (1 ppm)
- sample size 2- 30mm.



FPS SYSTEM (Pico-precise three-axes displacement measurement system)

The FPS3010 is an ultra-precise interferometric displacement measurement and analysis system, equipped with three fiber-based sensor heads. It combines attocube's superior interferometer technology with advanced software automation facilitating the real-time interpretation of complex measurement data.

Product features

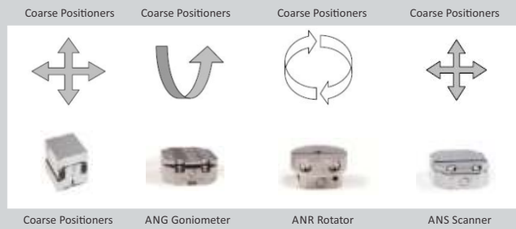
- Accurate
- Ultrafast
- Radiation Hard
- Real Time Interfaces
- Multi axis operation upto 3 m
- Angular Measurements
- Non invasive& Miniature
- Environmental Compensation
- Compatible with low temperature and high magnetic field.

POSITIONERS FOR LOW TEMPERATURE & HIGH MAGNETIC FIELD PREMIUM LINE POSITIONERS

attocube's Premium Line addresses customers working on cutting-edge research experiments conducted under extreme environmental conditions. All of them are compatible with attocube's microscope instruments.

Product Features:

- Large Travel Ranges
- Extreme Environments
- Closed Loop Control
- Multi Axis Operation



CROGEN & CRYOGEN-FREE MAGNET & MEASUREMENT SYSTEMS (CFMS)

Magnetic field upto 22T, completely cryogenfree
Temperature range: 50mK To 1000K

Magnetic measurements
- Vibrating sample magnetometer (VSM)
- AC magnetic susceptibility
- Heated VSM (upto 700/1000K)

Electrical measurements
- DC/AC resistance & Hall effect
- Critical current
- Heated resistivity probe station
- Rotating sample platform

Thermal Measurements
- Heat Capacity
- Thermal transport

Ultra low temperature measurements
- He 3 refrigerator insert
- Dilution refrigerator insert

Mini CFMS Up To 9 Tesla

High Field CFMS Up to 18 Tesla

S700X SQUID Magnetometer

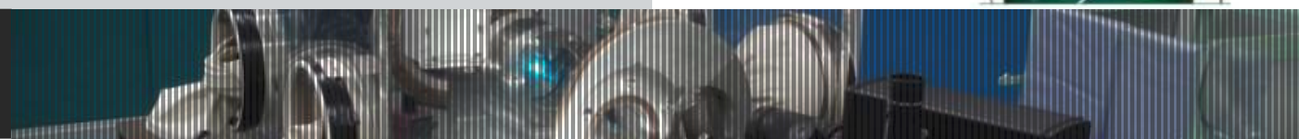
Features:

- Superconducting Magnet upto 7 Tesla
- Continuous operation from 400K down to 1.6K
- Variable Temperature Sample Space of 9mm with He-4 Gas
- 10^-8 EMU sensitivity for total moment
- Cryogen free option available
- LabVIEW operating software

Options:

- AC and DC measurements
- Oscillator and extraction mode
- He-3 for temperatures down to < 300mK
- Oven option to 700K
- Optical fibre illumination
- Pressure cell
- Transverse field
- milli Tesla field resolution
- Full environmental Shielding

CRYOGENICS



SURFACE SCIENCE

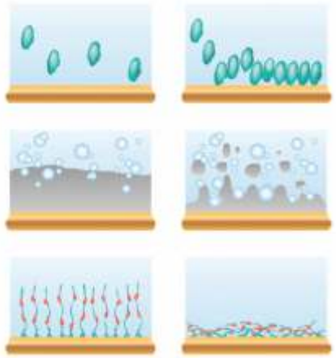
Biolin Scientific
[Progress Together]

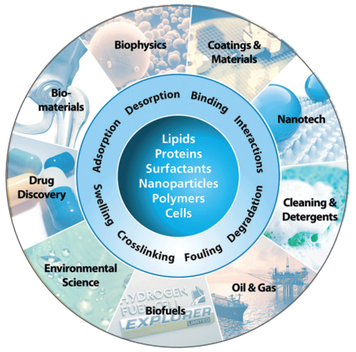
Q-Sense

Study surface interactions
In real-time
With nanogram precision

Analyze events such as
Adsorption/Desorption
Binding
Degradation
Cross-linking
Swelling/Collapse

Find out
How much
How fast
What process
What structure





Q-SENSE PRO

Fully automated for large-scale analysis

- Unattended measurements
- High throughput
- Precise sample handling

Q-SENSE ANALYZER

Fast sample processing at high quality

- Evaluate parameters efficiently
- Compare data easily
- Quantify mass and viscoelasticity

Q-SENSE EXPLORER

Versatile and modular for quantification at research laboratories

- Endless experiment possibilities
- Combinations with other techniques
- Quantify mass and viscoelasticity

Q-SENSE INITIATOR

The superior QCM with Dissipation monitoring technology

- High quality data
- Robust design
- Wide range of experimental conditions

Specications	Q-Sense Pro	Q-Sense Analyzer	Q-Sense Explorer	Q-Sense Initiator
Number of sensors	8	4	1	1
Minimum sample volume	~50 µl	~200 µl	~200 µl	~200 µl
Temperature range, +/- 0.02 °C	4 – 70 °C	15 – 65 °C	15 – 65 °C	20 – 45 °C
Time resolution	0.005 s	0.005 s	0.005 s	0.5 s
Harmonics	7	7	7	2
Quantication of mass, viscoel. prop	Yes	Yes	Yes	Limited*

2016 04 08

www.biolinscientific.com/q-sense

Attension

Biolin Scientific
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FORCE TENSIOMETERS

Measurements
Surface tension
Interfacial tension
Critical micelle concentration
Dynamic contact angle
Surface free energy
Powder wettability
Sedimentation
Density


Sigma 700/701


Sigma 702


Sigma 703D

OPTICAL TENSIOMETERS / CONTACT ANGLE METERS

Measurements
Static contact angle
Dynamic contact angle
Surface free energy (SFE)
Surface tension
Interfacial tension
Batch contact angle
Roughness corrected contact angle
Interfacial rheology (viscoelasticity)


Theta


Theta Lite


Theta QC

HIGH PRESSURE CHAMBER

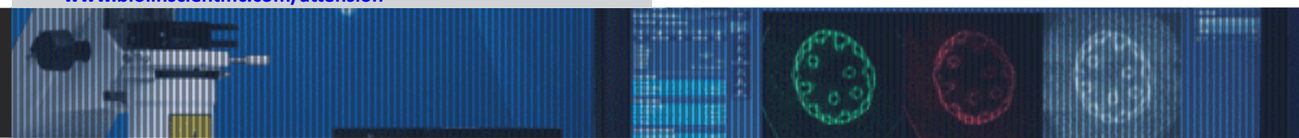
For optimal interfacial tension and contact angle measurements at high pressures and temperatures.

Enhanced oil recovery (EOR),
Supercritical fluids (SCF), supercritical CO_2
CO_2 storages
Polymer industry


Theta High Pressure Chamber

www.biolinscientific.com/attension

SURFACE SCIENCE



SURFACE SCIENCE

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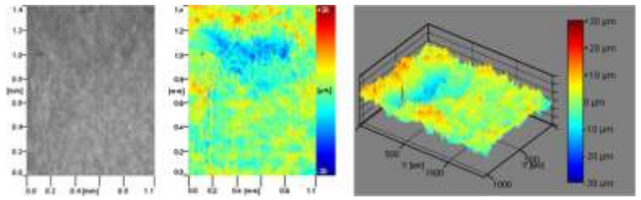
Theta 3D TOPOGRAPHY MODULE

For 2D and 3D surface roughness measurements

- Coatings and surface modifications
- Paper and board wettability
- Biocompatibility of implants
- Construction and building material



KSV NIMA

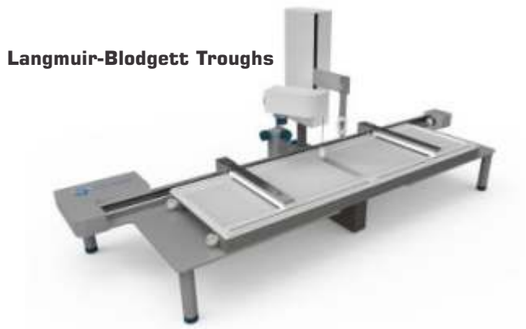
KSV NIMA Langmuir and Langmuir-Blodgett Troughs (KSV NIMA L & LB Troughs) are used to fabricate and characterize monomolecular films with precise control of lateral packing density.

- Biomembranes (e.g protein and ion interactions)
- Interfacial shear rheology of thin films
- Functional coatings (e.g nanotubes, nanowires, graphene)
- Surfactant formulation (e.g polymerisation, enzyme-substrate reactions)
- Nanoparticles (e.g surfactant and colloid stability)

Surface Potential Sensor

Surface Potential Sensor (SPOT) measures the potential difference above and below the thin film.

- Determining effective dipole moments.
- Determining molecular orientation.
- Film electronic structure characterization.
- Molecular structure characterization.
- Complex formation monitoring.



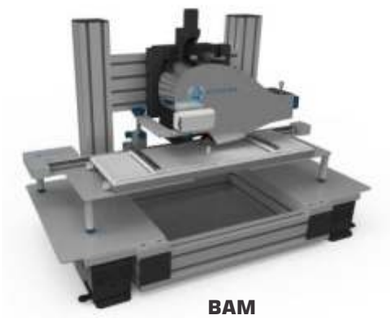
Langmuir-Blodgett Troughs

SPOT

Langmuir Troughs

BREWSTER ANGLE MICROSCOPE (BAM)

Brewster Angle Microscopes (BAM) enable visualization of monolayers, typically at the air-water interface in a Langmuir Trough. They create an image of the surface by detecting changes in the refractive index of the water surface in the presence of surfactant molecules. This provides information on homogeneity, phase behavior and film morphology.



BAM

www.biolinscientific.com/ksvnima

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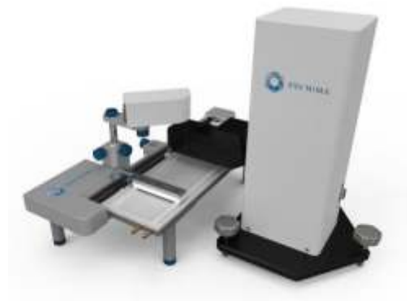
(MICRO BAM)

Monolayer/film behavior.
Monolayer/film homogeneity Influence of sub-phase conditions on film structures.
Monitoring of surface reactions.
Monitoring and detection of surface active materials.?



Micro BAM

KSV NIMA

DIP COATERS

KSV NIMA Dip Coaters are robust computer-controlled instruments for precise thin film deposition. Provide solutions for dip coating of small to large samples in either single or multiple vessels that are suitable for both simple and complex vessel sequencing.

Sol-gel coatings
Layer-by-layer assemblies
Self-assembled monolayers

Multi vessel large dip coater

Multi vessel dip coater

ISR

INTERFACIAL SHEAR RHEOMETER

For measuring the viscoelastic properties of films at fluid interfaces (gas/liquid and liquid/liquid).

Prediction of emulsion, froth and foam stability.
Determination of thin film structure.
Examination of phase transitions.
Real-time monitoring of surface reactions.
Continuous monitoring of molecule adsorption into interfaces.

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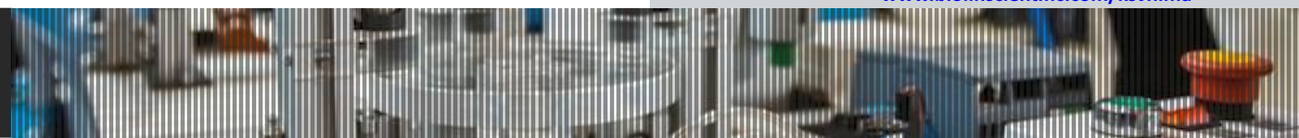
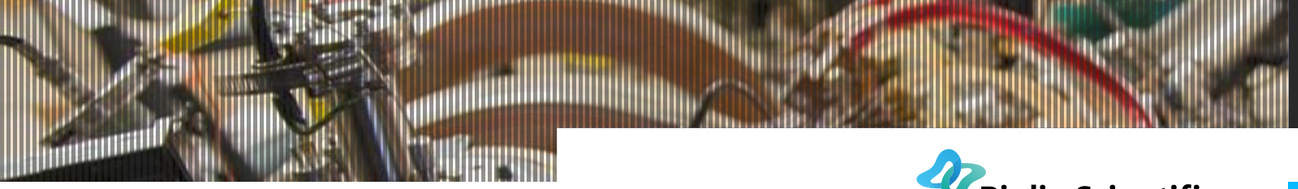
SURFACE SCIENCE





LASERS

KSV NIMA

PM-IRRAS (FTIR)

For IR analysis of monolayer floating on an aqueous sub-phase or deposited on reflective substrates.

- Chemical composition of thin films.
- Molecular-scale quantitative analysis of molecular orientation.
- Adsorption/desorption and surface reactions in mono- and multi-layers.
- Phase transitions in thin films.
- Hydration/hydrogen bonding

Biolin Scientific
[Progress Together]

PM-IRRAS (FTIR)

Excellence in Surface Plasmon Resonance
BioNavis

MP-SPR Navi
The new generation of SPR

The new Multi-Parametric SPR solves some of the previously open-ended questions and enables measurements on a number of samples, surfaces and conditions, traditional SPR cannot.

SPR Navi™: The only MP-SPR instruments on the market.

- Real-time molecular interactions kinetics, on-/off-rates, adsorption, desorption, affinity, concentration, adhesion.
- Physical properties (thickness, swelling, adsorbed mass)
- Optical properties (complex refractive index)
- Electrochemical behavior

www.bionavis.com

TekhnoScan

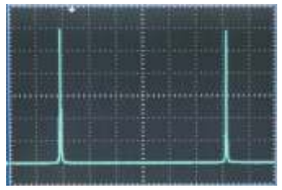
CW SINGLE FREQUENCY TUNABLE RING LASER

Single-frequency ultra-wide-tunable laser systems with high-precision scanning of radiation line.

Ring Dye lasers
Wavelength range: 570-620 nm,620-700 nm,285-350nm with resonant frequency doubling, Linewidth: <100Khz,Output Power: >1W,

Ring Ti :Sapphire lasers,
Wavelength range:695-770nm,750-850 nm, 850-950, 950-1050nm
Linewidth:< 5 kHz, Output Power: >1.9W @ 12W Pump

Applications:
Ultrafast Spectroscopy,
Frequency combs,
Microfabrications,
Nano-Photonics,
Microsurgery,
Amplifier Seeding,
Sub-Systems for
OEM integration,
Jet Fluorescence



FIBER LASERS

Yb Doped Fiber based Femtosecond lasers
All-fiber based Mode-locked ytterbium laser. High energy and Pulse duration of 500fs to 3 ns. wavelength range 1070nm,rep rate from 25Mhz to less than 100 Khz Wavelength tunable model Yetterbius-1100,Tuning range: 1060 to 1115nm

Er Doped Fiber based Femotosecond lasers
Femtosecond pulses, all-fiber design, wavelength range 1560nm and 780nm. Output power up to 250mW without any amplification Pulse Width: <100fs, Rep rate: 12-18MHz

OPOTEK INC.
TUNABLE LASER SYSTEMS

BROADBAND OPO LASERS
Compact, wide tunable OPO Laser systems

Radiant: Tunable from UV-VIS-NIR, Integration of all components in one Single unit make this product Rugged and Reliable for your precise research applications.

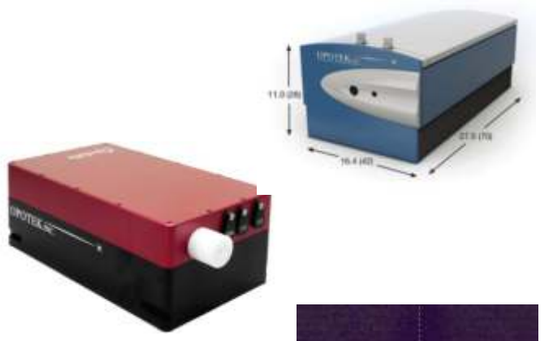
- **Tuning range** :220-3450nm on different models
- **Energy**: Up to 60mJ
- **Rep rate**: 10 or 20Hz

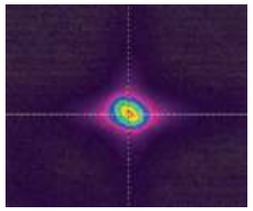
Opolete: An integrated turnkey tunable laser system. it is the most compact system of its kind with a foot print of Only 7x12”

- **Tuning Range:** 220 to 3450nm
- **Energy:** Up to 12mJ
- **Rep rate:** 20Hz

Phocus: A unique, dedicated OPO for Photoacoustic Imaging

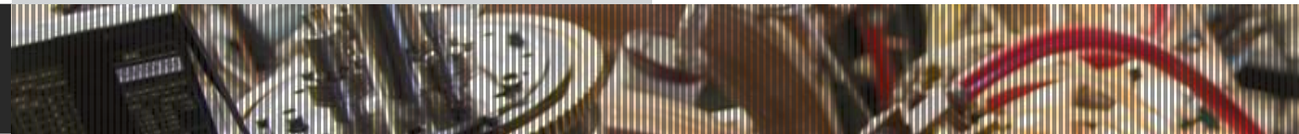
- Higher energy Upto 125mJ
- Wavelength tuning from 690nm to 950nm
- Access to 532nm,1064nm option
- Fiber optic Bundle, for direct light delivery to biological tissue





Typical far field beam profile at 450 nm
(Model: Radiant 355)

SURFACE SCIENCE



LASERS

EXCIMER LASERS

LightMachinery's State of the art performance Excimer lasers offer an unbeatable combination of laser performance, reliability, customer support and value.
LightMachinery excimer lasers now feature exciPure technology, introduced in 2016, represents the greatest improvement in excimer gas lifetime and reduction in operating costs in a generation

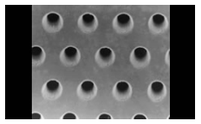
IPEX 700 Series

Specially designed for medium duty cycle operation in Scientific applications like Pulsed Laser Deposition(PLD), industrial and R&D environments
Features
- eXcipure Technology for ultimate gas lifetime and low cost operation
- Simple, direct control from a new generation tablet based interface
- Aircooling Upto 25Hz, Small footprint
- Energy Range: 475mj and 700mJ at 248nm on different models
- Pulse Repetition Rate: 15Hz,25hz,50Hz,100Hz Versions

LightMachinery
Excellence in lasers and optics

Pulsed Laser Deposition

Micro-Machining



Wire Stripping

CO_2 LASERS

World's leading manufacturer of Transversely Excited Atmospheric Carbon Dioxide (TEA CO2) lasers.
Impact Series: High power lasers for 24/7 materials processing and drilling of non-metallic materials.
Lasermark Series: For hiquality marking of date and batch codes to consumer product packages and electronic components

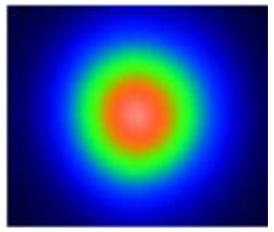
Applications: Marking, Material Processing, Wire Stripping, Drilling and Non destructive in testing in semiconductor, automotive, aerospace and packaging

GREEN DPSS LASERS

Green Diode Pumped Solid State Laser up to 18W CW output.
Near-perfect TEM00 mode with extremely low optical noise and excellent long-term stability.
- Wavelength:532nm
- 5W,10W,15W and 18W Output power
- Compact laser head with seal enclosure for long lifetime, closed-loop, purpose-built TEC chiller integrated in power supply.
- Extreme low noise <0.03% rms with Noise Elimination Technology (NET)
- World-class long-term power stability <±0.25% over 24 hours

Applications: Pumping Ti:Sapphire lasers: ultrafast & continuous-wave, Pumping Dye Laser, Flow cytometry, Solar cell processing

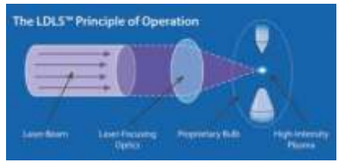
LIGHTHOUSE PHOTONICS



Typical far-field beam profile

BROADBAND LIGHT SOURCES

A revolutionary single-light source technology LDLS - Laser-Driven Light Sources . LDLS Sources deliver Ultabright light and broadband range from 170-2100nm. These Lamps are more than ten times longer life than conventional Xenon arc and Deuterium lamps.



ENERGETIQ

EQ99X
Wavelength: 170-2100nm
Output Power:0.5W
Spectral Radiance:10mW/mm2.sr.nm
Optical interface: window coupled
Cooling : Air Cooled

EQ99X-FC
Wavelength: 190-2100nm
Output Power:80mW
Spectral Radiance:60µm/nm
Optical interface: Fiber coupled
Cooling: Air Cooled

EQ1500
Wavelength: 170-2100nm
Output Power:1.5W
Spectral Radiance:30mW/mm2.sr.nm
Optical interface: Window coupled
Cooling: Water Cooled

EQ400
Wavelength: 170-2100nm
Output Power:15W
Spectral Radiance:100mW/mm2.sr.nm
Optical interface: Window coupled
Cooling: Water Cooled

FEATURES
- 170 to 2100nm Wavelength coverage on a single light source
- Electodless operation for long lifetime, 9000Hrs
- Very High brighness across the spectrum
- Excellent Spatial and Power stability

EXTREME ULTRAVIOLET/ SOFT X-RAY SOURCES

FEATURES
- Unique electrodeless Z-Pinch technology - Low debris / low consumable cost
- 20W into 2pi using Xenon - Higher Brightness and power for a wide variety of applications
- Small plasma size - Below 1mm diameter
- Cost-effective and compact - Low cost per EUV Watt - Small footprint

APPLICATIONS
- EUV Mask Inspection
- EUV Metrology
- EUV Resist Development
- Defect Inspection
- EUV Microscopy

Q-SWITCHED ND-YAG LASERS

Compact ,medium to High Energy Q-switched Nanosecond Nd-YAG Lasers

Beamtech®

Nimma
- Flashlamp Pumped
- Wavelength: 1064nm,532nm,355nm,266nm
- Rep rate: 1to 10 Hz,Variable
- Energy: 450mJ to 2000mJ@1064nm on different models

Vlite
- Flashlamp Pumped, Dual Pulse
- Wavelngth:532nm
- Rep rate: 1-15Hz, Variable
- Energy: 135mJ to 500mJ@ 532nm

LAPA
- Diode Pumped, Completely Air cooled
- Wavelength: 1064nm,532nm,355nm,266nm.
- Rep Rate: 20Hz, 200Hz,1KHz
- Energy: 80mJ @1064nm
- 1 billion Shots of Lifetime

Applications: LIBS, LIF, LIDAR, PIV, OPO Pumping, Tisaphire Laser Pumping, Dye Laser pumping.

LASERS

SPECTROSCOPY

FLS980 Fluorescence Spectrometer
Combined Steady State and Lifetime Spectrometer

Modular design enables flexibility, customisation for measurement needs and ease of future upgrades.
Unrivalled spectral coverage from the deep UV to the mid-IR range up to 5500 nm– allows the widest possible range of samples to be measured
Highest Sensitivity (>25,000:1 standard; >35,000:1 optional) – Industry leading sensitivity, allows detection of very weak fluorescence signals
High performance triple grating monochromators with integrated filter wheels – high stray-light rejection allows more accurate results for highly scattering or weakly emitting samples

FS5 Spectrofluorometer

Multiple detector ports in one integrated instrument, measure up to 1650 nm and fluorescence lifetimes down to 25 ps, in one instrument
>6,000:1 Water Raman SNR, high sensitivity allows for detection of very weak fluorescence signals
Three detectors as standard, reference detector to correct for light source fluctuations, transmission detector for absorbance, single-photon counting (SPC) detector for ultimate sensitivity
Plug & Play sample modules, automatic sample module recognition and initialisation saves the user time and effort. Wide range of modules available for varied sample analysis

Dedicated Fluorescence Lifetime Products

Edinburgh Instruments manufacture a variety of spectrometers that are dedicated to the measurement of fluorescence lifetimes using TCSPC.

Lifespec II

Fastest TCSPC instrument on the market due to zero temporal dispersion
Subtractive double-monochromators result in zero temporal dispersion
5 ps – 50 µs lifetimes (detector and laser dependent)
Extended NIR range – spectral coverage up to 1650 nm
Compact footprint
Multi-laser integration through two excitation ports; super-continuum, Ti:Sapphire, and plug-and-play

Lp980 Transient Absorption Spectrometer
Laser Flash Photolysis and much more.

All-in-One spectrometer for Transient Absorption, Laser-Induced Fluorescence, Raman and Laser-Induced Breakdown Spectroscopy (LIBS)
Transients can be measured up to 2.55 µmto cover a wide range of samples and sample types
Integrated ICCD allows transient spectra to measured within one laser flash
Advanced software package for complete computer control of all components and measurements

Maximize the LP980 capabilities by incorporating Laser-induced photoluminescence, Raman and LIBS analysis with transient absorption studies..

Princeton Instruments

Spectrograph Monochromator

Isoplane
High spectral resolution
Excellent imaging performance
Superior signal-to-noise ratio
Patented optical design (IsoPlane-320)
Triple-grating turrets with auto-turret and grating-identification functions

Spectra Pro
Availability of four models
Direct digital scanning
Interchangeable triple-grating turrets
Multiple entrance and exit port capabilities
High-throughput optics
High spectral resolution
Astigmatism-corrected optical system for multichannel applications

ICCD- (PI-MAX-4)

World's first emICCD cameras for single photon sensitivity, unsurpassed speed and linearity
Back illuminated EMCCDs coupled to Gen II and Gen III intensifiers for ultimate sensitivity and gating capabilities
1 MHz sustained intensifier gating repetition rate
Ultra-fast <500psec gating
Video-rate imaging and sustained spectral rates of >10,000 spectra per second
Double image feature (DIF) for velocity measurements
Widest range of CCDs, EMCCDs, Gen II and Gen III intensifiers availbale including 2Kx2K large format sensors

EMCCD (Pro EM)

Patented eXcelon3 technology for highest UV-to-NIR sensitivity
Unique vacuum technology backed by a lifetime guarantee
Spectra-kinetics mode and ultra-high-speed readout mode
EM gain calibration via OptiCAL with built-in light source
Simple, high speed GigE interface

X-RAY CCD (Quad-RO)

Front-illuminated CCD with 2084 x 2084 pixel array and 24 x 24 pm pixels resolution with 24 x 24 pm pixel size (ITO technology)
Sensitivity in X-ray energy range from - 3 KeV to > 20 KeV
Industry-standard FireWire interface
Multiple-port readout for high frame rates
Unique mechanical design for easy phosphor replacement

SPECTROSCOPY

Princeton Instruments

IR CAMERA (NIRVANA)

InGaAs 640 x 512 focal plane array, 20 pm/pixel sensor
Sensitive in 0.9 pm to 1.7 pm wavelength range
Thermoelectrically cooled version achieves -85°C using Princeton Instruments' unique vacuum technology; LN version for cryogenic operating temperatures reduce dark noise even further
High-speed imaging up to 110 fps
High-speed GigE interface
Flexible mounting design for imaging and spectroscopy

SOPHIA

ArcTec™ technology cools the sensor below -90°C without chillers or cryocoolers
Permanent vacuum guarantee
2048 x 2048 back-illuminated CCDs deliver >95% peak QE
Patented eXcelon technology -low fringing and enhanced sensitivity over broad wavelength range
Up to 16 MHz readout rate with up to 4-port simultaneous readout
New, ultra-low-noise readout electronics with ultra-stable bias
High-speed USB 3.0 data interface with optional fiberoptic connection for remote operation Compatible with IsoPlane and SpectraPro spectrometers

株式会社 東京インスツルメンツ
TOKYO INSTRUMENTS, INC.
Mutual Satisfaction

Raman Microscopy

Nanofinder FLEX 2

- Two lasers/easy switchable
- High speed mapping (Line illumination/Fast scan method)
- Compact size
- High Spatial resolution < 350nm
- High Spectral resolution <0.75cm-1
- Advance software

Nanofinder 30

- Fast Raman imaging, Low excitation power
- Motorized turret with 4 gratings
- Combined Confocal Raman /AFM system
- Simultaneous AFM topography/Raman image
- Device with high sensitivity and high spatial resolution

Nanofinder FLEX

- High cost performance
- Modular 3D Raman system
- High speed mapping (Line illumination/Fast scan method)
- High Spatial resolution < 350nm
- Maintenance-free
- User friendly software

SPECTROSCOPY

Specialise Instruments
INTELLIGENT SOLUTIONS

Mission

"Solution provider with cutting edge technologies for scientific community and industry."

Vision

"To be valued as a partner by our principal and key solution provider for our customers. We believe in building enduring relationships based on integrity, highest levels of technical know-how and the ability to provide extremely reliable support at all times"

First of its kind Systems

- Dual beam ND- YAG laser.
- Integration of powder XRD into indigenous glove box.
- ICCD for cancer detection.
- High speed picosecond camera for Plasma studies.
- Photo physics station with 4 tunable laser.
- High resolution ring dye laser for highly specialized application .
- Integration of lasers and ICCD for LIBS application .
- IR camera for signature analysis.
- Cryogen Free magnet system .
- Inverted Interfacial Shear Rheometer for petroleum research.
- 14 Tesla PPMS
- Up conversion Measurements for fluorescence setup.
- LB system with liquid- liquid trough for petrochemical research in shell India.
- SPM for low temperature high magnetic field system.
- SPM for low temperature and 3 axis vector magnet system.
- Integration of fluorescence spectrometer with super-continnum laser.
- Narrow line width VIS- NIR OPO system .
- Pulse electron deposition system.
- High speed squid VSM magnetometer .
- Custom dual head, high energy laser developed for holography.
- Field integrated PIV system implemented in India.
- Xray imaging CCD
- EMCCD sold in India.
- Multichannel ICCD system sold in India.
- Scanning Acoustic Microscope for NDE sold in India.
- Sale of Infrared Imaging for Plasma Research for diagnostics and process control of Tokamak.
- Introduction of lock in thermography as a NDE tool.
- PRFM for low temperature high magnetic field system.

Milestones

"Brought world class technology in India serving wide spectrum of industry and Research
First industrial project worth 3.2 million USD implemented in India for cigarette package marking with lasers way back in 1997.

Developed market reputation by providing service for systems even older than 20 to 25 years.
Technical expertise in specialize field, to support systems even after their life time.

Highly specialized & customized systems were conceptualized and designed in collaboration with customers.

Diversified in 1.7 MW Power project in green energy thereby Successfully commissioning 3 MW wind power project in a record time of 8 months

Successfully established overseas brand names in various field of spectroscopy, cryogenics, Condensed Matter Physics , lasers etc.
Diversified into Industrial processes offering online and & offline product range across the wide spectrum of industry. "