



Photik Scientific Pvt. Ltd.

Technology is the Future!



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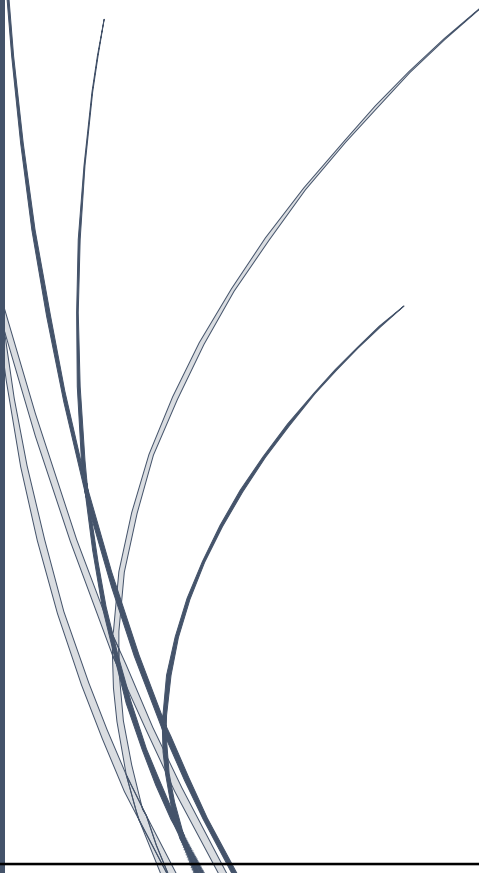
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Divisions

 **Photonics** 
Nanotechnology

 **Photonics**

Sources:

- Non-Coherent
- Coherent

Non-coherent Sources:

Lamp Sources

- Arc Lamp Sources
- QTH Light Source
- Lamp Housing
- Tunable Light Sources
- Calibration Light Sources
- Lamps and Sources



Solar Simulators

- Steady State Solar Simulators
- Flash Solar Simulators
- Quantum Efficiency Measurement
- IV Testing Equipment
- Filters for Solar Simulation
- Accessories for Solar Simulators





Coherent Light Source

Lasers

Continuous Wave lasers

- Diode Lasers: From Few mW to hundreds of watts, Wavelength stability up to 1pm, DFB, Single frequency lasers, linewidth up to 10kHz, Butterfly packages, power stability <0.25%, tunable wavelength up to 100nm.
- Fiber coupled diode lasers: From Few mW to hundreds of watts, Wavelength stability up to 1pm, DFB, Single frequency lasers, Butterfly packages, power stability <0.25%.
- Fiber Laser: Few mW to kilowatt
- Tunable Laser Diode: Narrow linewidth < 100kHz, Spectrally pure, Standard wavelengths from 630 to 1400nm, Wide wavelength tunability > 50 nm Power up to 100 mW, Mode-hop free tuning up to 30 GHz, Wavelength insensitive cavity alignment and output beam direction, Free space or fiber coupled output, Low frequency-noise, Self-aligning. Ti:sapphire ultra narrow Linewidth lasers.
- Gas Lasers: HENE, Co2, Mercury line sources, Excimer lasers, Metal-vapor lasers.





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Pulsed Lasers:

- Short pulse: from microsecond to millisecond lasers, high power, quasi continuous wave lasers.
- Nanosecond:
 - ✓ Nd:Yag : up to 100hz, up to 2 joules, <10ns
 - ✓ Nd:YLF/Phosphate Glass lasers: up to 20 joules
 - ✓ DPSS: Khz ns lasers
 - ✓ Tunable: Nanosecond OPOs 410...2500 NM
 - ✓ Dye laser
 - ✓ high Power
 - ✓ Custom Pulsed Lasers
 - ✓ RGB lasers: few mJ energy per pulse
 - ✓ Blue lasers: for holography applications
 - ✓ Single Longitudinal Mode Laser
- Picosecond:
 - ✓ Fiber Picosecond Lasers
 - ✓ Nd:Yag picosecond Lasers
 - ✓ Diode Pumped Picosecond lasers
 - ✓ Tunable OPO
- Femtosecond Laser:
 - ✓ Fiber Femtosecond lasers
 - ✓ Solid state femtosecond lasers
 - ✓ Tunable OPO





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LEDs

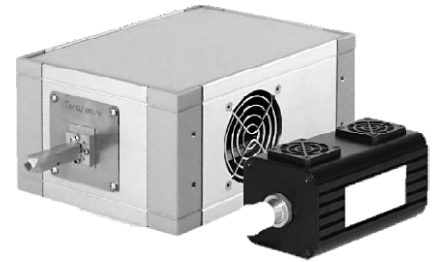
- LEDs With TEC cooled controller
- LED Engine
- LED Surface Radiator

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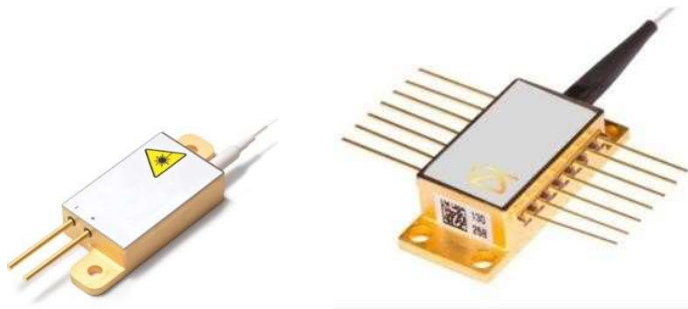
THz Source

- THz Generator
- THz sources: 100 GHz, 140 GHz, 200 GHz and 300 GHz available frequencies
- Tunable THz Source: 75 GHz, 150 GHz, and 300 GHz frequency ranges, High tunability (12 %)
- Ultrafast THz Source



Laser Diode

- Diode lasers:
 - ✓ low noise laser
 - ✓ compact
 - ✓ high Power
 - ✓ Picosecond
 - ✓ TO9/Butterfly
- Fiber coupled diode lasers
 - ✓ low noise laser
 - ✓ TO9/Butterfly
 - ✓ high Power



- Tunable Laser diode
- Laser Diode Driver
 - ✓ CW
 - ✓ Pulsed: up to ns
 - ✓ High Power: up to 36 V/21 A with TEC & Air Cooling
 - ✓ Laser diode driver for gas sensing
 - ✓ Multichannel: Up to 8 channels
 - ✓ Ultra-low noise: Current set-point resolution (@ 100 mA set-point): 0.025 mA, Temperature stability (typ.): <0.001°





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- **Laser Diode Controller**
 - ✓ TEC
 - ✓ Pulse Delay Generator: Ideal for timing and synchronization
 - ✓ Pulse Picker: up to 200 MHz input / 20 MHz output
 - ✓ Burst Shaper: get any burst shape at your input pulse clock frequency
 - ✓ Digital delay generator: 10 ps resolution - 15 ns insertion delay - 5 mV min input
- **Laser Combiner: Up to 7 laser diode combiners with dual port**
- **Tunable Laser:**
 - ✓ OPO: CW, Nanosecond, Picosecond, Femtosecond
 - ✓ laser diode: Narrow linewidth up to 100Khz, tapered Amplifier.
 - ✓ Ti:sapphire tunable lasers



Detection

- **Camera:**
 - ✓ CCD
 - ✓ CMOS
 - ✓ Monochrome
 - ✓ High Speed
 - ✓ FLIM/FRET
 - ✓ THz
- **Systems**
 - ✓ FLIM
 - ✓ FRET
 - ✓ Spectrograph
 - ✓ Spectrophotometer





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- ✓ Elemental Analyzer
- ✓ Microscopy
- ✓ Raman
- ✓ Transient Absorption Spectroscopy
- ✓ Laser Diode Test System
- ✓ Spectroradiometer
- ✓ QE measurement
- ✓ VI measurement

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■ *Detector*

- ✓ Energy Detector
- ✓ Power detector
- ✓ Multichannel
- ✓ IR detectors
- ✓ Alkali cells
- ✓ Photodiode
- ✓ High Speed
- ✓ CCD
- ✓ CMOS



■ *Spectrometer*

- ✓ Compact
- ✓ High Resolution
- ✓ Dual Channel



■ *Wavemeter*

■ *Spectrograph*

■ *Thz Scanner*

■ *CCD: CCD/ICCD/EMCCD*

■ *CMOS: High Speed, ICMOS, FLIM/FRET*





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- *High Speed Imaging:*
 - ✓ CCD
 - ✓ CMOS
 - ✓ Camera
 - ✓ Photodiode
 - ✓ ultra-fast gated intensified high-speed camera
- *Image Intensifier*
- *Integrating Sphere*
- *Photo Materials*
 - ✓ Photoresist plates
 - ✓ Photopaper
 - ✓ Color Photopolymer Bayfol® HX 200



Opto-mechanics

- *Mirror Mounts*
- *Optical Breadboards*
- *Optic Mounts*
- *Optical Rails*
- *Optical Posts*
- *Beam Routing*
- *Base & Brackets*





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Optics

- *Lenses*
- *Mirrors*
- *Polarizers*
- *Optical Filters*
- *Beam splitters*
 - ✓ Fiber Optics
 - ✓ Fiber Optic Modulator
 - ✓ Faraday Isolators
 - ✓ Deformable Mirrors
 - ✓ Adaptive optics



Motion Control

- *Linear motorised/manual stage*
- *XY/XYZ stage assembly*
- *Piezo electric stage*
- *Goniometer*
- *Rotational stage*





Systems

- *Micromachining*
- *Lithography*
- *Laser Combiners*
- *Frequency doublers, triplers, quadruplers*
- *Fluorescence Lifetime Imaging Microscopy (FLIM)*
- *Forster Resonance Energy Transfer (FRET)*
- *Additive Manufacturing*
- *Ultrafast laser systems*
- *High End Spectroscopy*
- *Particle Image Velocimetry*
- *LED/Laser diode testing systems*



H
100

Li
0.01

Be
0.07

Na
0.05

Mg
0.1

K
0.06

Ca
10

Sc
0.3

Ti
0.3

V
1

Cr
1

Mn
0.2

Fe
0.5

Co
0.2

Ni
0.8

Cu
0.1

Zn
0.5

Ga
< 100

Ge
2

As
10

Se
< 100

Br
< 100

Kr
< 100

Rb
0.01

Sr
0.2

Y
10

Zr
1

Nb
5

Mo
1

Tc
< 100

Ru
< 100

Rh
< 100

Pd
< 100

Ag
0.1

Cd
0.2

In
5

Sn
10

Sb
10

Te
< 100

I
< 100

Xe
< 100

Cs
< 100

Ba
0.2

Lu
< 100

Hf
5

Ta
< 100

W
5

Re
< 100

Os
< 100

Ir
< 100

Pt
< 100

Au
1

Hg
< 100

Tl
1

Pb
0.3

Bi
5

Po
< 100

At
< 100

Rn
< 100

Fr
< 100

Ra
< 100

La
40

Ce
4

Pr
< 100

Nd
< 100

Pm
< 100

Sm
< 100

Eu
< 100

Gd
< 100

Tb
1

Dy
< 100

Ho
< 100

Er
3

Tm
< 100

Yb
1

Ac
< 100

Th
< 100

Pa
2

U
30

Detectable Elements

with selected detection limits, ppm

1ppm=0.0001%

B
2

C
1

N
< 100

O
< 100

F
20

Ne
< 100

Al
1

Si
3

P
20

S
10

Cl
100

Ar
< 100



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- *Length and Angle Measurement Systems*
- *Nano positioning and Nano measuring Machine*
- *Laser Vibrometer*
- *Quantum accelerometer*
- *Gauging Probe*
- *Measurement and Calibration systems*
- *Climate Measuring Station*
- *Optical lattice clock*
- *Vapor cell lock*
- *Thin Film Measurement Systems*
- *Solar PV testing Equipment*
- *Microscopy*
- *LIBS, PIV, PLD, Z-scan*
- *Optical kit*
- *UHV chambers*





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Nanotechnology

ATOMIC LAYER DEPOSITION SYSTEMS

Atomic Layer Deposition Systems (Thermal Deposition and Plasma Deposition with load lock) having up gradation options such as ozone generator, Low Vapour Pressure Deposition, SAM are available, Glove Box Integration possible.



MASKLESS LASER LITHOGRAPHY

Laser Pattern Generators, 3-D Laser Lithography.
Applications : Microelectronics, Integrated Optics, Diffractive Optics, Micromechanics, Microcryogenics, Hybrid circuits, Flat panel displays, Microwave Integrated Circuits (MICs), MultiChip Modules (MCM), Photovoltaics, Photoelectrochemistry



RAPID THERMAL ANNEALING SYSTEM

Rapid Thermal Processing or Rapid Thermal Annealing Systems, Diffusion/LPCVD, PECVD, Thin Film Deposition, Electrostatics Chucks, Gas Flow Components.





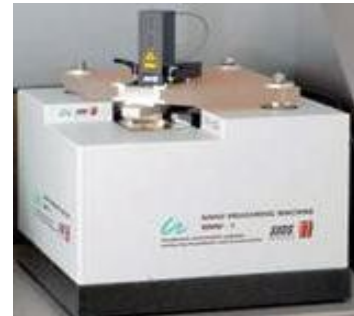
Physical and Chemical Vapor Deposition

- Sputtering
- Thermal and E-beam evaporation
- Pulsed laser deposition (PLD)
- Molecular beam epitaxy (MBE)
- Plasma Enhanced CVD
- UHV PVD
- RIE/DRIE
- Ion Beam Milling
- PA-MOCVD



NANO POSITIONING & MEASUREMENT

Nano Positioning & Nano Measuring Machine, Stabilized He-Ne Laser, Laser Interferometric Gauging Probe, Laser Interferometric Vibrometer, Miniature Retroreflector, Miniature Plane Mirror Interferometer, Optical-Interference Testing Rig for Application Tonometers, Gauge Block Calibration System.



HALL EFFECT MEASUREMENT SYSTEM

Hall Effect Measurement System 77K to 773K, Photonic HMS, High Temperature HMS, Probe Station

