SIMTRUM

Product Line Card
Quantum Applications

2026 V1

For customized projects please Contact us:

info@simtrum.com

SIMTRUM
www.simtrum.com

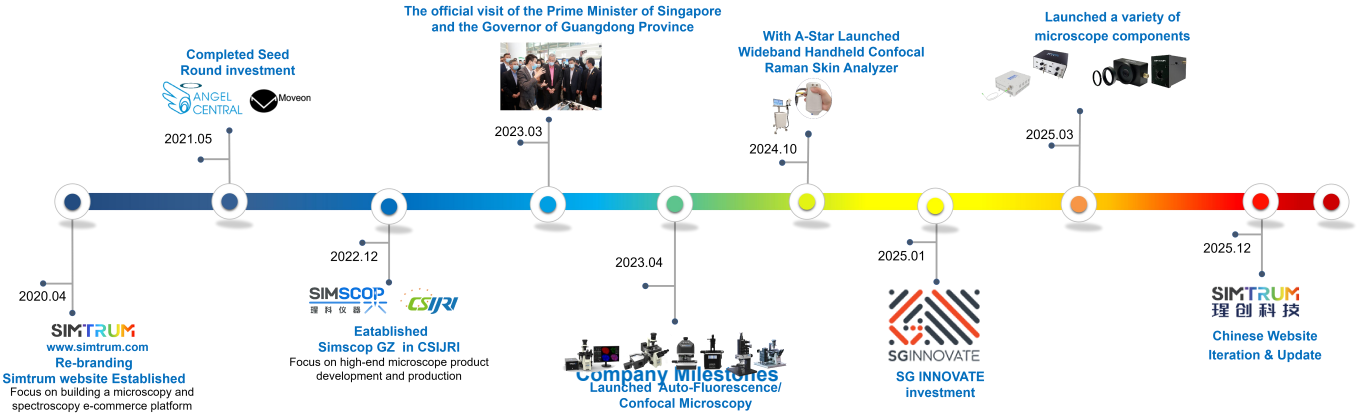
SIMSCOP 理科仪器
www.simscop.com

Company Profile

Established in Singapore in 2019, SIMTRUM Group specializes in innovation and applications within microscopy and spectroscopy. Its core team brings decades of optical technology expertise. In 2022, the company partnered with the CSIJRI in Guangzhou to establish a joint R&D laboratory for microscopy with independent research capabilities. The team now includes multiple Ph.D. graduates from the National University of Singapore (NUS), and has grown to dozens of members.

SIMTRUM has collaborated with leading institutions such as Nanyang Technological University (NTU), NUS, A-Star, and Xiamen University to develop high-end microscopy systems. In March 2023, the company's Guangzhou R&D center was visited by former Singapore Prime Minister Lee Hsien Loong and the Governor of Guangdong Province. Later that year, SIMTRUM won first prize in the startup category of the Guangzhou Technology Innovation and Entrepreneurship Competition and secured multiple technology patents.

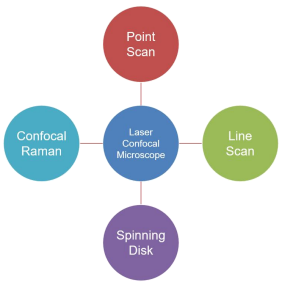
Vision: To be a leading photonics technology company that truly understands and adds value to our customers.
Mission: Driven by innovation, we deliver exceptional services and precise products to global photonics users, empowering customer success and advancing industry transformation.

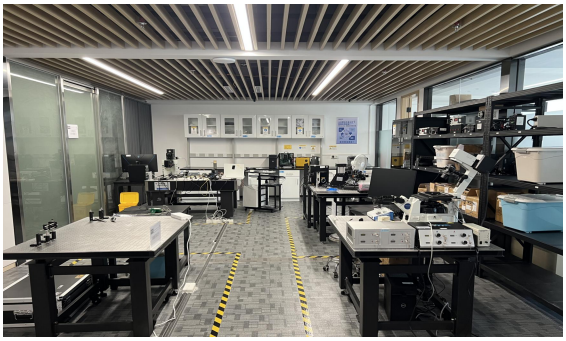


Optical R&D Laboratory

We have established a fully-owned optical laboratory in Guangzhou operating as a subsidiary of Simscop Instruments. This facility specializes in the R&D and manufacturing of high-end microscope systems and critical equipment components.

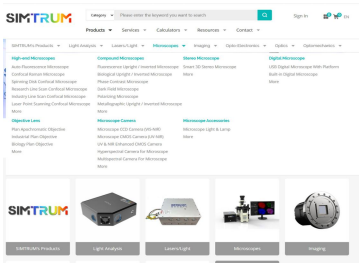
Our proprietary microscope systems include confocal laser microscopes and wide-field microscopes, along with core components such as detection modules, photomultiplier tubes (PMTs), silicon photomultipliers (SiPMs), multi-channel lasers, and motorized filter wheels. Additional products are currently under development.





Real scene of optical R&D laboratory

Focus on microscopy and spectroscopy e-commerce platform



E-commerce platform website:www.simtrum.com

Simtrum is a specialized e-commerce platform dedicated to microscopy and spectroscopy, serving scientific research, industrial, and healthcare fields with high-quality products and aiming to be a trusted partner in the sector.

The platform features seven major product categories: Microscopes, Light Analysis, Lasers/Light sources, Imaging, Opto-Electronics, Optomechanics, and Optic, offering over 4,000 products in total. Each category is equipped with a product line card to facilitate efficient selection.

As a supply chain-integrated systems provider, Simtrum employs a rigorous testing system where every product undergoes professional inspection and performance verification before launch. This ensures reliability and delivers a ready-to-use, worry-free experience for customers.

With 10 years of expertise, we support 3,000+ customers with 30+ tailored solutions.
Trust Simtrum for your microscopy and spectroscopy needs.

Laser Stable/Reference System

Optical Frequency Comb

Standardized Repetition Locking Optical Combs

Operating Wavelength (Customizable) 1560 nm
Spectral Bandwidth (Customizable) ＞20 nm
Output Power (Customizable) 100 mW

Fully Locked Optical Frequency Combs

Operating Wavelength (Customizable) 1560 nm
3dB Spectral Bandwidth (Customizable) ＞30 nm
Output Power (Customizable) 30-100 mW

Asynchronous Optical Sampling Light Source

Wavelength 1560±10 nm
3dB Spectral Bandwidth 20 nm
Output Power 50 mW

Optical Frequency Comb Accessories

Wavelength 1560±10 nm
Input Pulse Repetition Rate 100-250 MHz
Input Pulse Energy 2 nJ

Laser Frequency Locking

Saturated Absorption Spectroscopy Frequency Stabilization Module

Frequency Stability < 10MHz(12h)
Operating Wavelength Range 400-1600 nm
Modulation Frequency 0-100kHz

Active Power Stabilization Module (QTM-APS)

Operating Wavelength 780-950 nm
Max. Output Efficiency 1.5 dB
Power Stability 0.1%@8hrs

High-Finesse Cavity for Laser Stabilization

Finesse Option 10k-400k
Wavelength 500-3000nm
Multiple Wavelength Available
Cavity Linewidth < 100kHz
Typical Cavity Vacuum Level < 1E-5 Pa
Temperature Stability < 0.001 C

Laser Diode Controller

Temperature Stability < 5mK
Locking Period > 1 month
Current Range 0-200mA
Current Noise < 1uA
Pzt Tuning Voltage 0-150V

Automatic Laser Locking System

Frequency Stability < 3.5E-13/1s
Laser Linewidth < 100kHz
Operating Wavelength Range Li, Na, K, Rb, Cs, Sr, Yb, …
Auto-relock speed within 10s

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Laser Modulation Device

Acousto-Optic Device

Multi-wavelength/Multi-aperture/ Multi-frequency

Free Space Acousto-Optic Modulators(AOM)

Wavelength 266-10640 nm
Aperture 0.5-8 mm
Frequency 40-200 MHz

Fiber Coupled Acousto-Optic Modulators

Wavelength780-940 nm
Loss ＜3 dB
Frequency 40-300 MHz

Fiber-coupled Acousto-optic Tunable Filter

Wavelength 800-1700 nm
Loss < 3 dB
Frequency 60-100 MHz

Free Space Acousto-Optic Tunable Filter

Wavelength 200-4500 nm
Aperture 3-20 mm
Frequency 18-135 MHz

Acousto-Optic Q-switch (AOQ)

Wavelength1064-10600 nm
Aperture 1-11 mm
Frequency 20-80 MHz

Acousto-Optic Frequency Shift (AOFS)

Wavelength 633-1064 nm
Aperture 1-3 mm
Frequency 20-115 MHz

Phase Modulators

Wavelength 280-960 nm
Aperture 2-3 mm
Frequency 25MHz-1 GHz

Acousto-Optic Deflector (AODF)

Wavelength 266-1083 nm
Aperture 1-26 mm
Frequency 70-230 MHz

AOM Driver/RF Low-Noise Signal Source

Flexible Multi-Channel Phase-Coherent Radio Frequency Source WL-FlexDDS

RF generators 8
Output frequency (sine wave)
0.3 MHz-400 MHz
DDS (direct digital synthesis) 1GSps

Flexible Multi-Channel Phase-Coherent Radio Frequency Source WL-FlexDDS-NG

RF generators 12
slots(dual RF generator module) 6
data streaming capability ＞30MBytes/s

Dual-Channel 400 MHz Agile Waveform Generator WL-FlexDDS-NG-DUAL

sampling rate 1 GS/s
resolution 14 bit
frequency range 0.3-400 MHz

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Laser Modulation Device

Electro-Optic Modulators/Spatial Light Modulator

Electro-optical Amplitude Modulator

Wavelength 780-1550 nm
Bandwidth 10-40 GHz
Loss ＜5 dB

Electro-optic Phase Modulator

Wavelength 780-1550 nm
Bandwidth 300 MHz - 40 GHz
Loss < 3 dB

Phase Spatial Light Modulator

Wavelength 400 - 1700 nm
Resolution 1920 × 1080
Response Time 16-600 ms

Digital Micromirror SLM

Wavelength 350-2500 nm
Resolution 1920×1080
Real-time transmission rate 30-120 Hz

Laser Modulation Detector: Photodiode

Silicon photomultiplier (SIPM)(300-950nm)

Spectral Range 300 - 950 nm
Dark Voltage 2 mV
Peak Wavelength 420 nm

Single Photon Detector (SPD)(200-1700nm)

Spectral Range 200 - 1700 nm
Timing Resolution/Jitter < 40 ps
QE 25% - 35%

Photomultiplier Tubes (PMT)(160-900nm)

Spectral Range 160 - 900 nm
Peak Wavelength 380 - 500nm

Photodiode Detector (PD)

Spectral Range 200 nm-12 um
Bandwidth 0 -70 GHz

Pyroelectric Infrared Detectors (2-12um)

Spectral Range 2 - 12 μm
Size/Pixel 1 mm × 1 mm - 3 mm × 3 mm

Single-Photon Avalanche Diode Array

Array configuration 512 × 512
Spectral Range 400 - 900 nm

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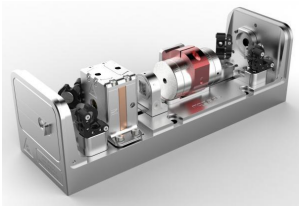
Quantum Cascade Lasers (MIR)

MIR Multi-Channel Widely Tunable External Cavity QCL-Glider

Spectral Linewidth 1-2 cm^{-1}
Tuning Range 50-300 cm^{-1}
Grating Period 100-450 gr/mm



Tapered Amplifier

Operating Wavelength (Customizable) 630-671nm
Tuning Range 1 nm
Output Power 250-4000 mW

CW Narrow Linewidth Laser and Low Noise Amplifiers

Narrow Linewidth Package Modules (532-1064 nm)

Wavelength 532-1064 nm
Output Power 100-800 mW(Multimode)

Narrow Linewidth Laser Diodes (1530-1625nm)

Center Wavelength C/L-band (1525-1625 nm)
Output Power 10-20 mW
Linewidth ~ 1kHz

1/1.5 μm High Power Narrow Linewidth Fiber Lasers

Center Wavelength 1020-1080nm
Output Power 10-40 W
Linewidth 20 kHz

Erbium Doped Fiber Amplifier

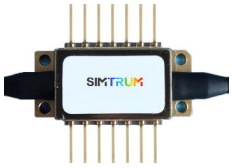
Wavelength 1530-1565 nm
Output Power 13-45 dBm

Ytterbium Doped Fiber Amplifier

Wavelength 1030-1100 nm
Output Power 17-40 dBm

Thulium-Doped Fiber Amplifier

Wavelength 1920-2020 nm
Output Power 20-30 dBm



High Power SOA Butterfly Devices (1060-1560 nm)

Wavelength 1060-1650 nm
Output Power 8-25 dBm

Fiber Raman Amplifier

Wavelength 1425-1465 nm /1528-1565 nm
Raman Gain 10/20 dB

Narrow Linewidth, High Power Laser

Wavelength 177 - 5000 nm
Linewidth < 10kHz
Typical Power > 1W (max 200W)

CW Multiple Wavelength Laser

Multichannel CW Multimode Lasers

Wavelength 405/450/488/520/532/561/
589/637/685/755/780/….
Output Power > 500mW
Power Adjust Accuracy 1%
Software and Manual Control
Analog and Digital Modulation Available
Stability < 1/2/3% Available

Multichannel CW Single-mode Lasers

Wavelength 405/450/488/520/532/561/
589/637/685/755/780/….
Output Power > 20/50mW
Power Adjust Accuracy 1% (continuous adjust available)
Software and Manual Control
Analog and Digital Modulation Available
Stability < 1/2/3% Available

Broadband and Tunable Laser

External-Cavity Diode Laser

Wavelength 394-2000nm
Output Power (depend on wavelength)
Linewidth < 100kHz
Continuous Tuning Range > 20GHz
Isolator, TEC, LDC, and Fiberization are Available

C/L-band Tunable Laser

Wavelength 1529-1567nm and 1554-1607nm
Output Power upto 300mW
Up to 64/96/128 Channels ITU-T
Continuous Tuning Range > 20GHz

Supercontinuum Fiber Laser

Wavelength 375-2400nm
Power > 3W
Fiber Coupled Output

ASE Light Source

Wavelength 973-1940nm
Output Power 10-400mW
Dual-band Supercontinuum Available

Light Analysis

Linewidth Analyzer

Wavelength 450 - 1625 nm
Effective linewidth range 1 kHz - 100 MHz

Wavemeters

Wavelength 380 nm - 2600 nm
Measurement Speed 76 kHz
Absolute Accuracy 200 MHz

Fiber Spectrometers (200nm-5um)

Wavelength 200 nm - 5 um
Detector Model Hamamatsu
Resolution < 1nm

VIS-NIR Beam Profiler(350-1750nm)

Wavelength 350 - 1750 nm
Resolution 4096*3072
Sensor pixel size 3.45 - 17 um

Scientific VIS-NIR CMOS Camera

Wavelength 200 nm – 1100nm, 900-2200nm
Resolution 640x512, …, 2048x2048
QE typical 95%

VIS CCD Camera

Wavelength 160 nm – 1100nm
Resolution 1024x1024, 2048x2048, 4096x4096
Applicable for Spectroscopy and Imaging

SIMTRUM Optical System and Components

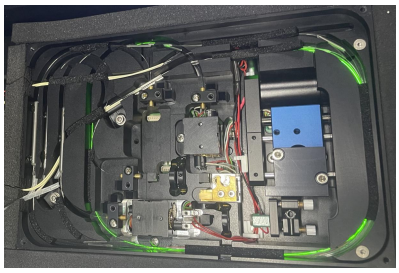
Optical System – Vacuum System

Ultra-high Vacuum Atomic Glass Cell

Vacuum < 1E-8 Torr
Non-magnetic Mounting
All-glass Construction (no epoxy/frits)

Vacuum Chamber

With Ion Pump and Differential Pumping Tube



Compact Laser System

Compact Quantum Optics
Compact Bioimaging Optics
Compact Material Science Optics
Compact Ultrafast Spectroscopy Optics
You sketch it, we make it!

Fiber Optics

Pump Combiner/MFA/CPS

Pump Wavelength 800 - 1000 nm
Signal Wavelength 1030 - 1080/1450 - 1600 nm

Filter Coupler

Center Wavelength 780 - 1550 nm
Optical Power 500mW - 20 W

532nm/633nm In-line Isolator

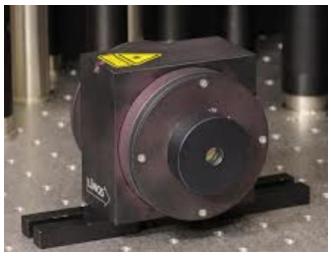
Wavelength 532/633 nm
Isolation 28-45 dB
Insertion Loss 1.8-3.2 dB

532nm/633nm Polarization Beam Splitter/Combiner

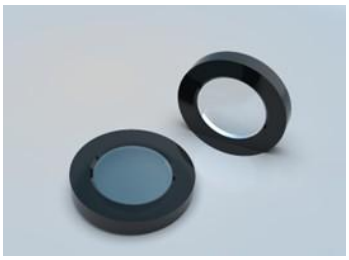
Wavelength 532/633 nm
Insertion Loss 1.5-1.8 dB
Return Loss 50 dB

Optical Components

Custom Multi-Wavelength, Multi-Layer Coating - Low Volume



Spatial Optical Isolator



Waveplates

Wavelength 355 - 10640 nm

Dichroic Mirror

Thickness 3.5 mm
Diameter 25.4 mm

Filters

Wavelength 200 - 3000 nmTransmittance 93% - 99%

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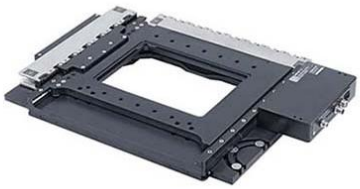
Optomechanics



Motor Stages

Built-in Controller
Minimum Incremental Move 50 nm
Accuracy 5 µm

Galvo Mirror Systems

Max Beam Diameter 5 mm
2-Axis System Beam Offset 10 mm

Motorized Mirror Mount

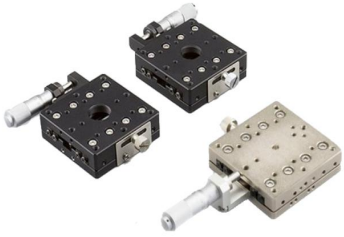
Piezoelectric Linear Stroke
0.7µm@150V
For Rapid-Stepping Phase-Shifting
Applications

Rotation Stages

Rotation Angle 3 mrad

Motorized Precision Rotation Mount

Bidirectional Repeatability ±0.1°
Backlash ±0.3°
Max Rotation Velocity 25 deg/s



13mm Linear Stages

Minimum reading 10 µm
Drive Direction Center/Right
Platform dimensions 40 × 40 mm