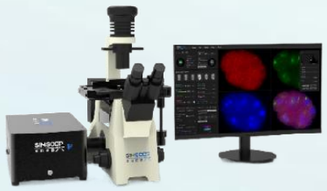
Microscope and Spectroscopy Product Line Card



Point Scanning /Line Scanning Confocal Microscope

- Frame rate: 8-30 fps@512x512
- Resolution: ~230 nm
- Simultaneous four-channel imaging
- Extensive integrated software

Spinning Disk Confocal Microscope

- Frame rate: 40-100 FPS@1024x1024
- Resolution: ~200 nm
- Turntable speed: 15,000 RPM

Confocal and Raman Microscope

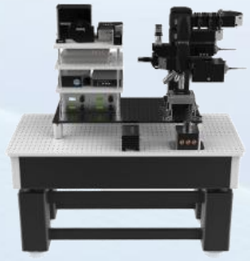
- Frame rate: 8-30 fps@512x512
- Resolution: ~230 nm
- Modular design
- Multi-channel compatibility

Point-Scanning Flow Cytometry Detection System

- Dual-functionality for synchronous "Detection + High-speed Imaging" monitoring
- Multi-channel spectral decoupling architecture

Widefield/confocal upright Raman, PL, Fluorescence Multifunctional Microscope

- Modular design
- Multi-channel compatibility
- Optional upright & inverted configuration
- Deep cryogenic cooling
- Upgrade for enhanced sensitivity



Multimodal Microscope

- Compatible with multiple beam channels
- Modular design with intelligent software integration
- Flexible switching of multi-path illumination
- Synchronous acquisition of multi-dimensional optical information

Handheld Confocal Raman Skin Analyzer

- Axial Resolution:10um~20um
- Detection Range: FP: 450 – 1750cm-1 HW: 2800-3750cm-1
- Detection of multiple skin components

STED Microscope

- Multi-channel compatibility
- Near-infrared band super-resolution
- Extremely weak signal detection
- Resolves down to 50 nm beyond the diffraction limit

2026 V2

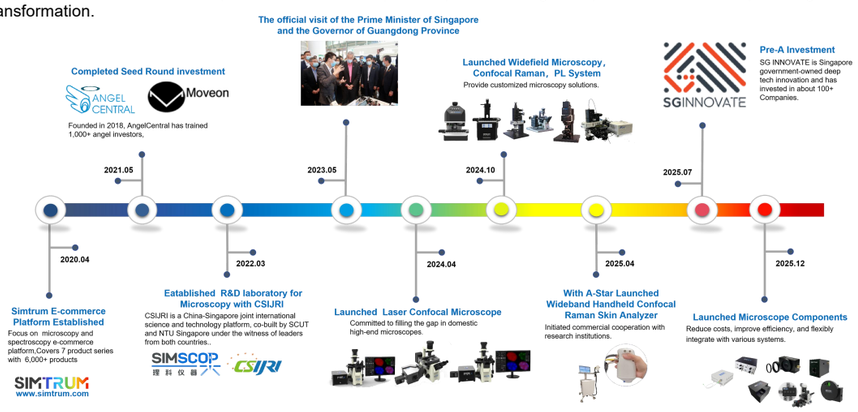
For customized projects please Contact us: **info@simtrum.com**

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.

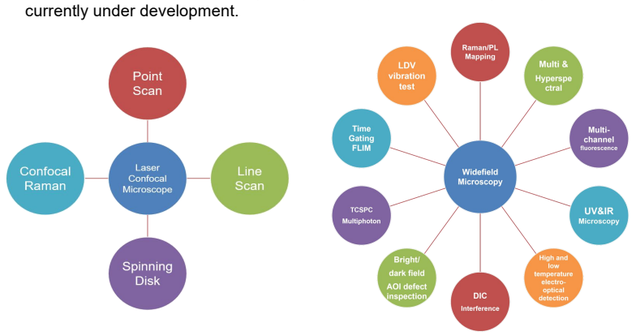
Vision: To be a leading photonics technology company that truly understands and adds value to our customers.
Mission : Driven by innovation, we deliver exceptional services and precise products to global photonics users, empowering customer success and advancing industry transformation.



Optical R&D Laboratory

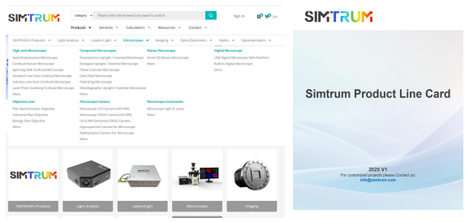
We have established a fully-owned optical laboratory in Guangzhou operating as a subsidiary of Simscop Instruments. This facility specializes in the R&D and manufacturing of high-end microscope systems and critical equipment components.

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

Four-channel Single-mode laser (375-808 nm)

- Wavelength range: 375-808nm
- Output power: >500mW

Narrow linewidth laser

- Wavelength range: 532–1064 nm
- Linewidth: MHz to kHz level

Four-channel Multi-mode laser (375-808 nm)

- Wavelength range: 375-808nm
- Output power: >500mW

Supercontinuum Light Source

- Spectral Range: 450–2400 nm
- Average Power: 3 W @ 80 MHz

Photodetectors

High Sensitivity Photomultiplier Tube

- Spectral range: 165~900 nm
- High quantum efficiency: 45%

Photodiode Detector （PD）

- Spectral Range : 5-1700 nm
- Bandwidth: 10/20/40/70 GHz

Si-APD Single-Photon Detector

- Spectral Range: 400–900 nm
- High Detection Efficiency: 70% @ 700 nm

High-sensitivity SIPM Detector

- Spectral Range: 300–950 nm
- Peak Sensitivity: PDE: 50%

Spectrometers

Large NA High Sensitivity Raman Spectrometer

- Wavelength range: 400-1100nm
- Resolution: <1nm Customizable

Near Infrared Spectrometer

- Wavelength range: 900–2500nm
- Resolution: <1nm Customizable

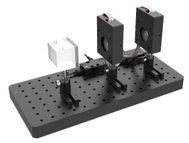
Multi Channel Spectrometer

- Wavelength range: 200-1100nm
- Resolution: 0.15nm

Portable Raman Systems - Research /Food and Drug Edition RMT KY

- Wavelength selection: 532/785/1064nm
- Output power: 0-500mW

Opto-Mechanics



Piezoelectric Polarization Rotator(R Axis)

- Rotational Travel:360° Continuous Rotation
- Homing Repeatability:0.1° (1.75 mrad)

Multi-channel Fluorescence Imaging Module

- Compatible Microscopes,Upright / inverted microscopes…
- Number of Channels: 2 / 3 / 4

Laser Speckle Reducer

- Small motor with eccentric cam design.
- Rapid deployment without commissioning.

Motorized filter wheel

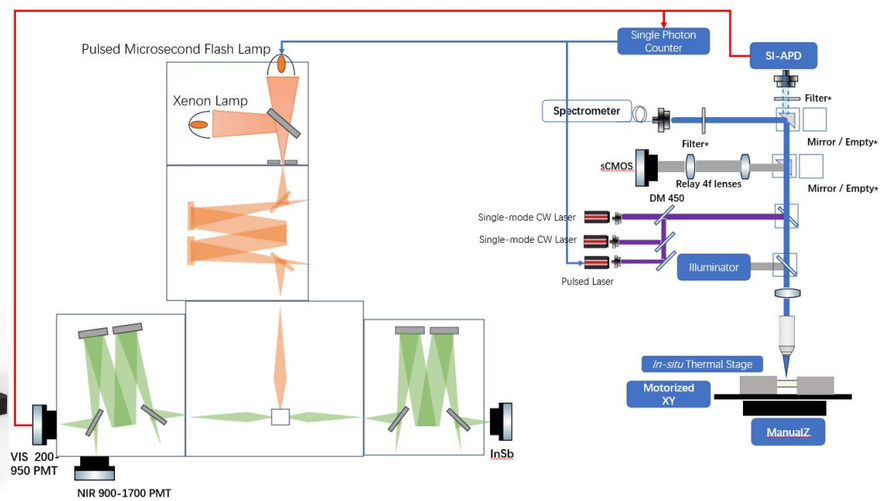
- Speed: 300°/s
- Positioning accuracy: 1°

SIMTRUM Singapore www.simtrum.com Telephone:+65 6996 0391 Email: info@simtrum.com

Raman/PL (Confocal) Microscope

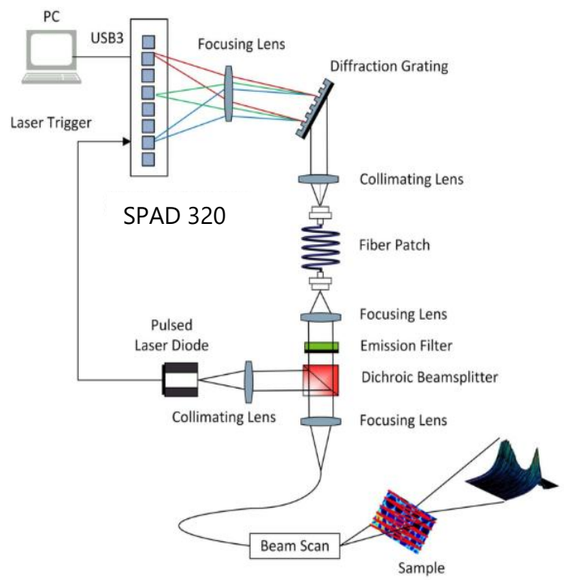
Solutions-1

Steady-State & Transient Fluorescence Spectroscopy Microscopy System



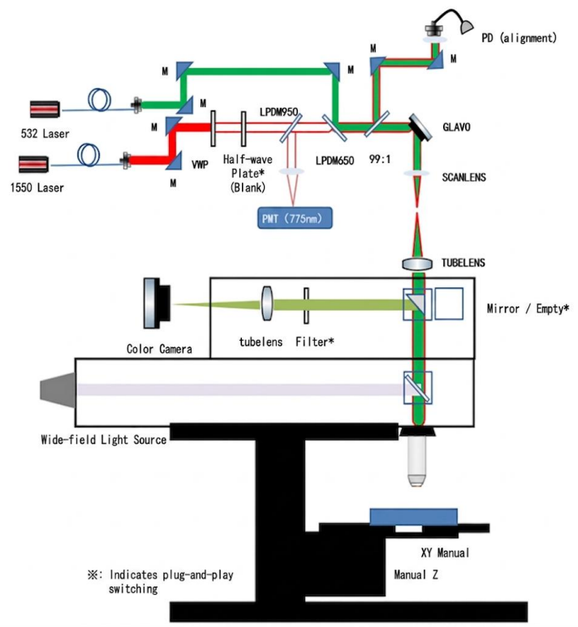
Solutions-2

Time-Gated Raman Microscopic Imaging



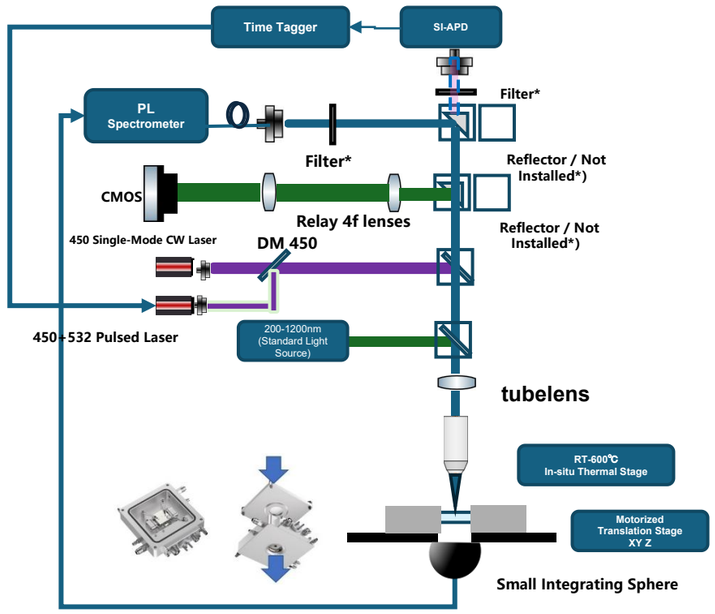
Solutions-3

SHG Spectral Microscopic Imaging



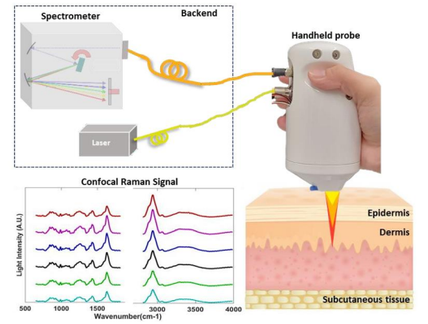
Solutions-4

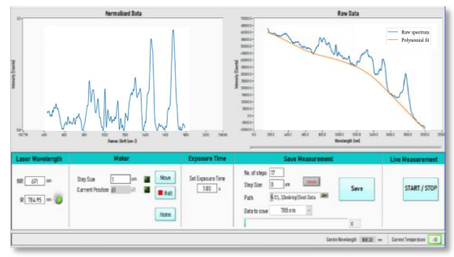
In-situ High & Low Temperature TRPL + Transmittance Detection of Perovskite



Solutions-5

Handheld Confocal Raman Skin Analyzer



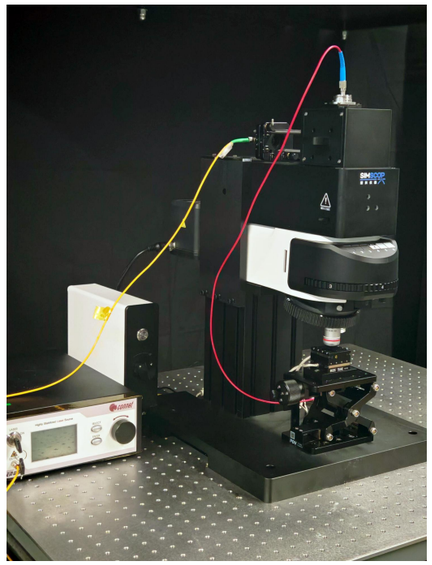


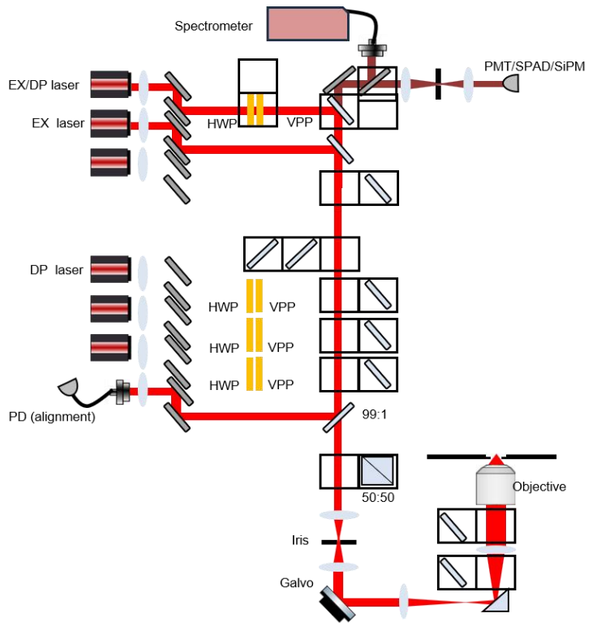
*For more application cases, please refer to the website www.simtrum.com

Point Scan Confocal Microscope

Solutions-6

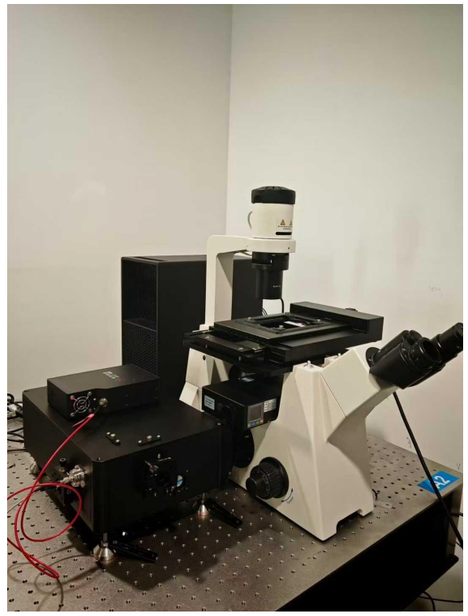
NIR Stimulated Emission Depletion（STED）Microscope

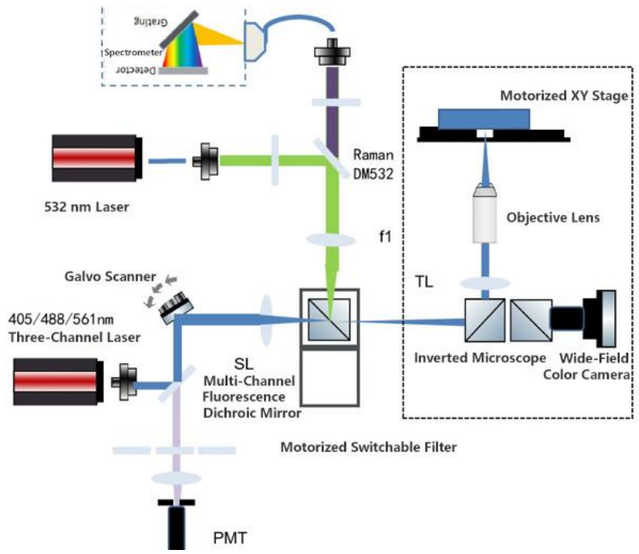




Solutions-8

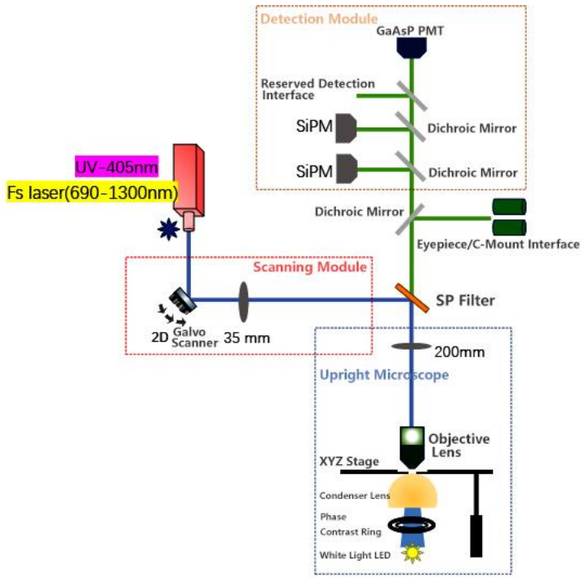
Dual-Mode Microscope
Fluorescence Confocal + 532 nm Raman

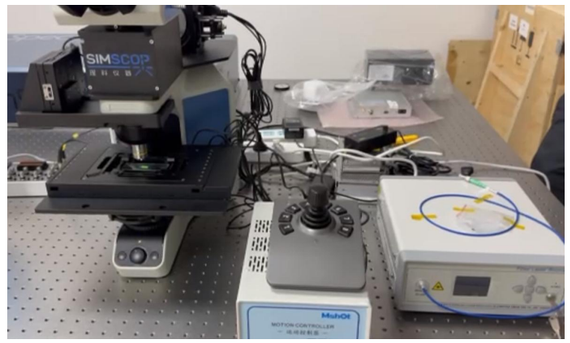




Solutions-7

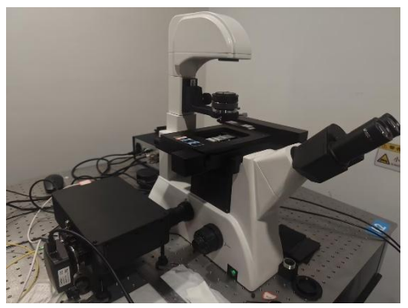
Single-point Confocal Two-photon Microscope

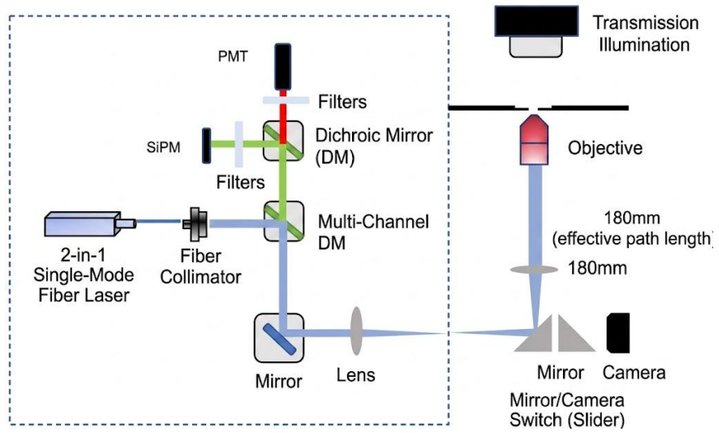




Solutions-9

Dual-Channel Point-Scanning
Flow Cytometry Detection System

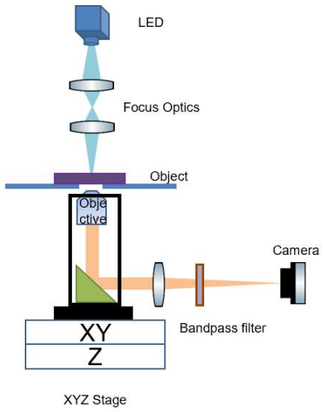


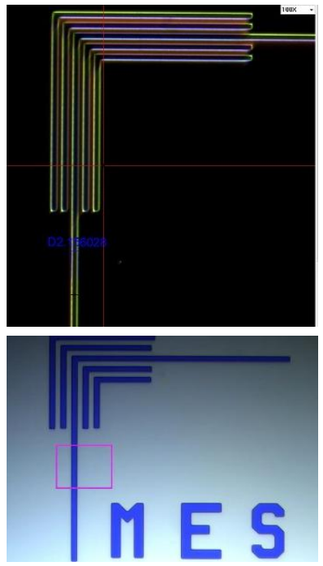


*For more application cases, please refer to the website www.simtrum.com

Solutions-1

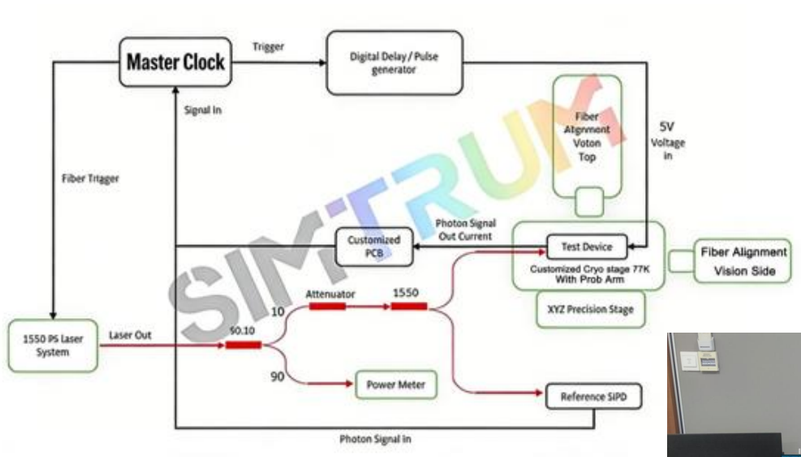
Semiconductor patterned wafer CD measurement

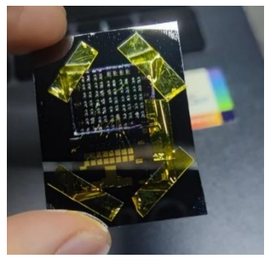




Solutions-2

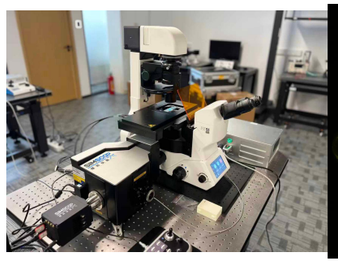
Wide-field TCSPC (Time-Correlated Single Photon Counting System) Microscope

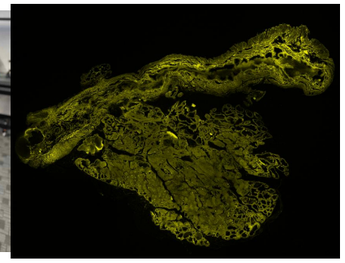


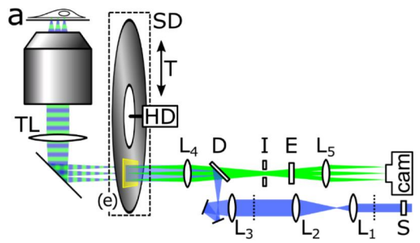


Solutions-1

Spin Disk Confocal Microscope



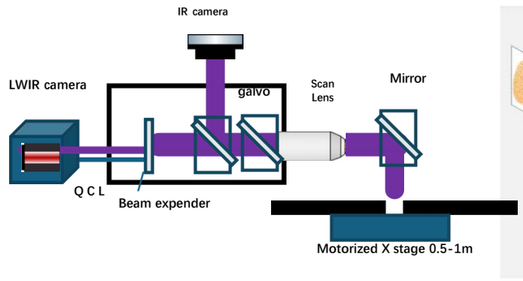


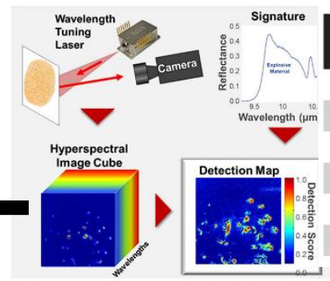


Simscop's single disk design

Solutions-2

Mid- to far-infrared hyperspectral microscope (for hazardous chemical testing)



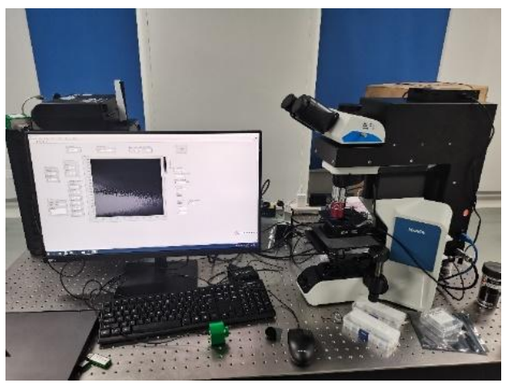


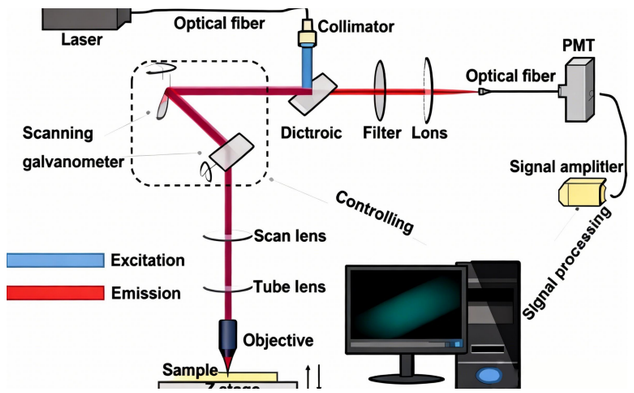
Laser Chip Name	Minimum Tuning Range	Minimum Tuning Range
BG-3.2-3.6	2820-3070 cm^{-1}	1160-1395 cm^{-1}
BG-4.4-5.2	1970-2230 cm^{-1}	1060-1320 cm^{-1}
BG-5.1-6.1	1660-1930 cm^{-1}	1010-1345 cm^{-1}
BG-5.5-6.2	1635-1780 cm^{-1}	830-1015 cm^{-1}
BG-6.1-7.4	1375-1615 cm^{-1}	795-1000 cm^{-1}
BG-6.2-7.4	1380-1595 cm^{-1}	760-900 cm^{-1}

Fig. 1. Overview of a hyperspectral imaging (HSI) measurement.

Solutions-3

Near-Infrared Confocal Spectral Microscope (NIR I/II Confocal Co-aligned)





*For more application cases, please refer to the website www.simtrum.com

Quantum Applications

High finesse cavity

- Finesse：10,000 – 400,000 (Customizable)
- Wavelength：500 – 3000 nm

High-accuracy Wavelength Measurement

- Wavelength Measurement Range: 450~1100nm; 970~1650nm
- Wavelength Resolution：500kHz；2 MHz;

Superconducting Nanowire Single-Photon Detector

- Typical Wavelength: Customizable
- Dark Count：0.01cps

Standardized Repetition Locking Optical Combs

- Operating Wavelength (Customizable) 1560 nm
- Spectral Bandwidth (Customizable) ＞20 nm

IR / NIR Applications

MIR QCL (3–13 μm)

- Wavelength range: 3–13 μm
- Output power: up to 40 W

FTIR Spectrometer

- Wavelength Range: 900–16000 nm
- Resolution: 0.5/2/4/8 cm^{-1} (optional)

NIR SPD Free-running

- Wavelength Range: 900–17000 nm
- Dark Count：< 1.2k cps@25%PDE

Infrared Camera

- Spectral Range: 0.4 ~ 14 μm
- Resolution: 0.08MP, 0.3MP

UV / EUV Applications

EUV Spectrometer

- Spectral Range: 1–200 nm
- Resolution: < 0.028 nm @ 40 nm

VUV/UV Spectrograph

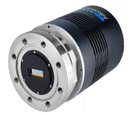
- Spectral Range: 115–1100 nm
- Resolution: 0.04 mm on average

VUV Light Sources

- Wavelength range: 115-400 nm
- Plasma chamber: average 30×9

UV camera

- Spectral Range: 240–280 nm
- Resolution: 1280 × 1024



XUV/VUV CCD Camera

- Spectral Range: 1–350 nm
- Pixels: 1024 × 255

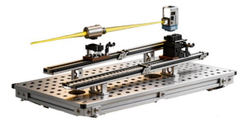
Maskless lithography UV laser writer

- Minimum line width: 0.5 μm
- Maximum Writing Area: 8"

Light Analysis

NIR Single-Photon Detector Gated

- Wavelength Range: 900–17000 nm
- Gated width:1ns typ.



Extended X-ray Absorption EXAFS

- Wavelength range: 4-30keV
- Resolving power: 1800-4000

Time-Correlated Single Photon Counting

- Channel count: 4/6/10/20
- Resolution: 1/4/8ps

Optical Power Meter

- Wavelength range: 0.19-25 um
- Power range：1nW-1000mW

Opto-Electronics/Imaging

AOM/AOTF/AOD/EOM

- Wavelength: 266 nm~10.6 μm
- Central frequency: 40-1500 MHz

Spatial Light Modulator

- Spectral range: 160-14000 nm
- Resolution: 2560x1600

High-sensitivity sCMOS camera

- High sensitivity: 95% @ 560 nm
- Low readout noise: 0.9 e^-

Vacuum CCD Camera

- Wavelength range: 5 eV – 20 keV
- Pixels: 4096 × 4096

Laser/Light

External Cavity Tunable Diode Laser

- Wavelength range: 399-1260 nm
- Free Space Output Power: ≥70 mW

Picosecond Pulsed Laser

- Wavelength range: 213-1064 nm
- Pulse Width：300-900 ps

Microscopy Imaging LED Sources

- Wavelength range: 360-730 nm
- Power Range: ≥3.5W/≥4.5W

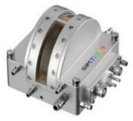
Lamp-Based Light Sources

- Wavelength:190 - 2500nm
- Lifespan: ~ 5,000 hours

Microscope Accessories

Optical Heating & Cryo Stage

- Temperature:-190~600°C /RT~1800°C
- Chamber Type: Airtight or vacuum



X-ray/XRD Heating & Cryo Stage

- Temperature:-190~600°C /RT~1500ºC
- Chamber Type: Airtight or vacuum

Electrical Probe Temperature Stage

- Temperature:-190~600°C /RT~1500ºC
- Chamber type: Airtight or vacuum

Adjustable Electrical Probe Station

- Temperature:-190~600°C /RT~1200ºC
- Temperature Stability: ±0.1ºC

Live Cell Imaging Incubation System

- Heating channels: 5 independent
- External expansion ports: 12

XYZ Microscope Stages

- Minimum Step Size: 50 nm
- Travel Range: 130×100 / 250×100

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

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