New Age Instruments
& Materials Pvt. Ltd.

QUANTUM TECHNOLOGY

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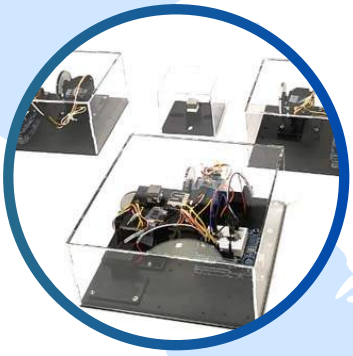

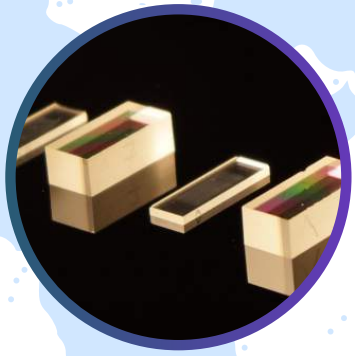
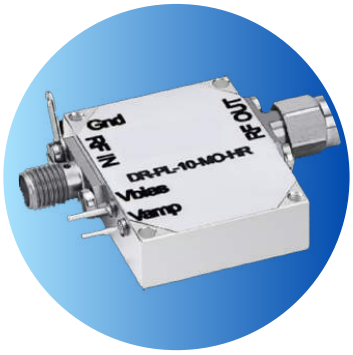

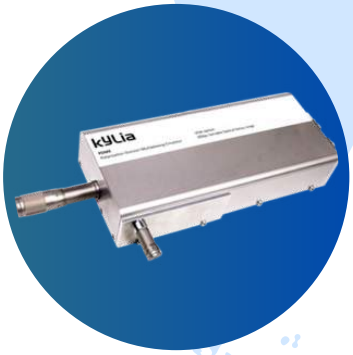

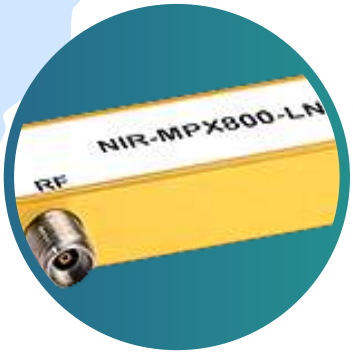

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QUANTUM TECHNOLOGY

"Empowering Progress Through Technology"

QUANTUM KEY DISTRIBUTION SYSTEM

Traditional methods of key distribution for encrypting data use public key cryptography, based on complex mathematical one-way functions. These one-way functions are easy to calculate in one direction but require much more time (of the order of few thousand years) to reverse them, by conventional computers.

By NEW AGE IN OUR Indigenous Products LINE

By NEW AGE IN OUR Indigenous Products LINE

We are offering QKD's based on below protocols:

- DPS-QKD(Differential Phase-Shift QKD)
- COW-QKD (coherent one-way QKD)
- MDI-QKD (Measurement device independent)- Under development

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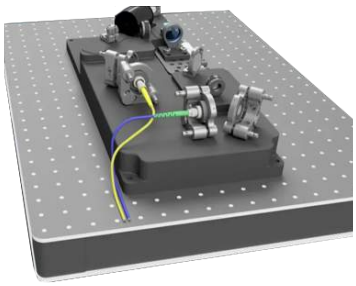
ENTANGLEMENT PHOTON SOURCE

High rate and high heralding Sagnac-interferometer source ofpolarization-entangled photon pairs, based on spontaneousparametric down-conversion (SPDC) within a periodicallypoled Lithium Niobate crystal (type 0). Access to allmechanical and electrical parameters, ideal platform forResearch & Development teams.



POLARIZATION ENTANGLED PHOTON PAIR SOURCE (OPEN SOURCE ON BREADBOARD)

High-quality polarization and frequency entanglement
Broad bandwidth covering C- and L- bands
High fidelity and excellent stability
Turn-key and room-temperature operation
Low power consumption

QUANTUM RANDOM NUMBER GENERATOR

The QRNG is a fast compact physical random number generator based on quantum noise in a photo detection process.

The QRNG is a fast compact physical random number generator based on quantum noise in a photodetection process. The device generates up to 480Mbits random bits per second after implementation of a proprietary hashing function. It integrates diagnostic functions that allow to assess nominal operation of key parts of the device.

SPCM

SPCM-AQRH

Excelitas' newly enhanced SPCM-AQRH Single-Photon Counting Module detects single photons over the wavelength range of 400 nm to 1064 nm with performance parameters superior to other solid state or vacuum-tube based photon counters.

TIME TAGGER

The Time Tagger Series provides endless capabilities for single-photon counting and you unleash them with no efforts. Whether you use the Time Taggers' powerful software or derive from extensive code examples in Python, Matlab, LabVIEW, or C#/C++ - you get your experiments up and running within minutes.

HANDHELD COINCIDENCE COUNTER

- Counts up to 2 million events
- Adjustable coincidence window between 1 and 7 nanoseconds
- Compatible with 5V and 3V3 TTL input signals
- Input for Gating signal
- Adjustable LED Backlight
- Computer control interface via SCPI commands over serial USB port
- Python sample code with graphical user interface provided for windows, Linux and OS X

LASER/ NARROW LINEWIDTH LASERS

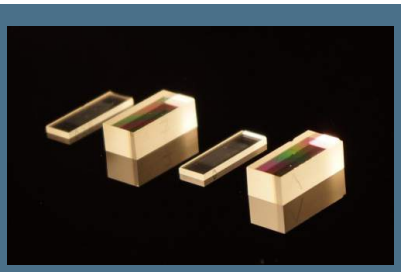
We are providing narrow linewidth lasers for Raman spectroscopy applications. We provide both transversal single-mode and multi-mode ECDL (External Cavity Diode Lasers) lasers for scientific and industrial applications. VBG (Volume Bragg Grating) and FBG (Fiber Bragg Grating) stabilization techniques are available, matching almost any Raman spectroscopy application.

SINGLE FREQUENCY LASER BENCHTOP,775 NM, UP TO20 MW, PM OUTPUT

single frequency laser coupled with Polarization Maintaining fiber at 775 nm in a single benchtop housing. Built with Fiber Bragg Grating, it provides a pure, single longitudinal mode, and extremely stable wavelength and up to 20 mW of output optical power with a high Side Mode Suppression Ratio (SMSR). This laser can be used in applications such as a CW seeding the external modulation and coherence interferometry. The laser is temperature stabilized with the built-in TEC controller. The laser drive current and operation temperature can be controlled so by using the intuitive front panel or an optional USB interface of the benchtop.

C&L BAND SOURCE

Single mode external cavity tunable laser. Developing the technology over the years, we have optimized the lasers to have a high sweep speed, wide tuning range, narrow linewidth and low noise.



PPKTP

Periodically poled KTP (PPKTP) is a ferroelectric nonlinear crystal with a unique structure that facilitates efficient frequency conversion through quasi-phase-matching (QPM). The crystal is comprised of alternating domains with oppositely oriented spontaneous polarizations, enabling QPM to correct the phase mismatch in nonlinear interactions.

FEATURES

- Customizable frequency conversion within a large transparency window (0.4 – 3 µm)
- High optical damage threshold for durability and reliability
- Large nonlinearity (d33=16.9 pm/V)
- Crystal lengths up to 30 mm
- Large apertures available upon request (up to 4 x 4 mm2)
- Optional HR and AR coatings for improved performance and efficiency
- Aperiodic poling available for high spectral purity SPDC

NON LINER CRYSTAL FOR SPDC

We can provide MgO:PPLN crystals and waveguides for highly efficient, non-linear frequency conversion.

We offer:

COMPONENTS AND MODULES

- **Fiber Coupled Bulk Crystal Module**
- **Ruggedised Waveguide Package**
- **Component Waveguide: Fiber**
- **Component Waveguide: Free-Space**
- **Component Fiber In Fiber Out Waveguide**

MGO:PPLN CRYSTALS AND CHIPS

- **SHG Crystals**
- **OPO Crystals**
- **DFG Crystals**
- **SFG Crystals**
- **Waveguide Chip**

PPLN CRYSTAL ACCESSORIES

- **PPLN Ovens**
- **Temperature Controllers**
- **PPLN Crystal Clip Kits**
- **PPLN Oven Mount Adapters**
- **Waveguide Accessory Pack**

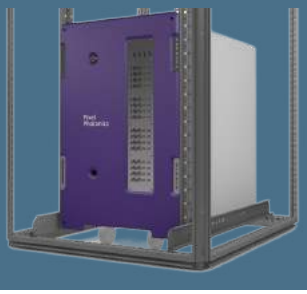
SNSPD DETECTOR

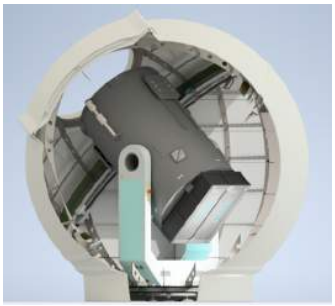
Our unique approach combines superconducting nanowire single photon detectors (SNSPD) with photonic integrated circuits. Our SNSPD rack detector comes at a 19” industry rack and stands out because of its reduced size and easy handling. By integrating the cryostat, vacuum system, compressor and electronics in one single housing, the system is compact and easy to use.

We offer SNSPD in two configurations:

1) Table Top Detector Configuration

2) 19” industry rack Detector configuration





OPTICAL GROUND STATIONS

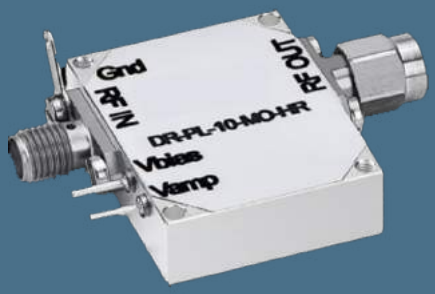
We offer a fully functional optical ground station with a 40 cm & 80cm-aperture telescope. The OGS includes a telescope, mount, and enclosure. All functionalities for applications in QKD and laser-communication (such as accurate tracking, tip-tilt mirrors, initial alignment) are given. The operational wavelength regime ranges from 500 nm to 1700 nm.

Q-CMOS CAMERA – FOR PHOTON NUMBER RESOLVING

We has a Unique Camera for Quantum Technology. Q-CMOS Camera: World's first camera that achieves the ultimate in quantitative imaging by photon number resolving.

INTENSITY MODULATOR

We offer the most comprehensive range of commercial LiNbO3 intensity modulators:
Mach-Zehder modulators, from low frequencies to 40 Gbps / 40 GHz and for a broad range of wavelength windows including: 800 nm, 1060 nm, 1300 nm, 1550 nm and 2 microns. When they are matched with the family of RF drivers, these modulators serve all applications, from laboratory experiments to demanding industrial systems.



RF DRIVERS FOR INTENSITY & PHASE MODULATOR

We offer wideband RF amplifier modules designed for analog applications at frequencies up to 40 GHz. The DR-AN are characterized by a low Noise Figure and a linear transfer function.

Modulator driver modules specially designed for telecommunication modulation formats such as NRZ, RZ up to 44 Gb/s, DPSK up to 28 Gb/s, and 22 Gb/s (D)QPSK up to 2 x 28 Gb/s.

PHASE MODULATOR

We offer the most comprehensive range of commercial LiNbO3 phase modulators. Phase modulators, from low frequencies to 40 Gbps / 40 GHz and for a broad range of wavelength.

OPTICAL DELAY LINE

The Variable Optical Delay Line (VODL) is a device that enables a very precise and stable control of an optical delay up to 12ns.

The optical delay can continuously be tuned thanks to a micrometer head (manual option) or a motorized actuator (piloted option).

QUANTUM SENSING & QUANTUM COMPUTING EDUCATION KITS

NV-Center based Quantum Sensing for Education

We offer the following three kits with different experiments included in them:

	Quantum Sensing Basic	Quantum Sensing Advanced	Quantum Computing
CW ODMR	●	●	●
Fluorescence Quenching	●	●	●
Scalar Magnetometry	●	●	●
Hyperfine Detection	●	●	●
Hyperfine Driving	○	○	
Vector Magnetometry	○	○	
Temperature Sensing	○	○	
Pulsed ODMR		●	●
Rabi		●	●
Ramsey		●	●
Hahn Echo		●	●
Single Spin Detection			●
g(2) Correlation Function			●
Hadamard Gate			●
CNOT-Gate			●
Deutsch–Jozsa Algorithm			●

QUANTUM CRYPTOGRAPHY EDUCATIONAL KIT

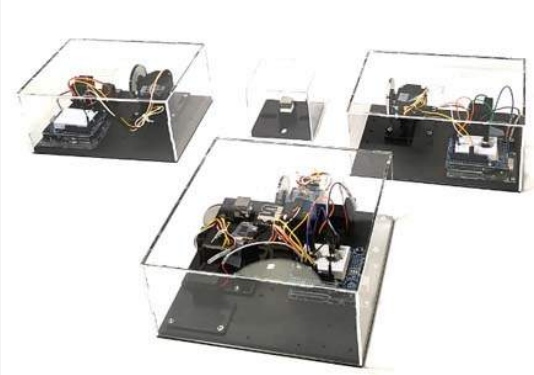
QUANTUM CRYPTOGRAPHY EDUCATIONAL KIT is a user assembled and operated Educational Kit designed to convey the ideas and steps of a Quantum Key Distribution implementation. The "quantum channel" is simulated with macroscopic pulses of red laser light and the classical channel with infrared pulses. An optional Eavesdropper Kit is available to exploit the security loophole due to the non-quantum nature of macroscopic laser light.

1. Programmable Quantum Cryptography Educational Kit without Eavesdropper add on (unassembled)

2. Programmable Quantum Cryptography Educational Kit without Eavesdropper add on (assembled)

3. Programmable Quantum Cryptography Educational Kit with Eavesdropper add on (unassembled)

4. Programmable Quantum Cryptography Educational Kit with Eavesdropper add on (assembled)



QUANTUM MECHANICS LABORATORY KIT

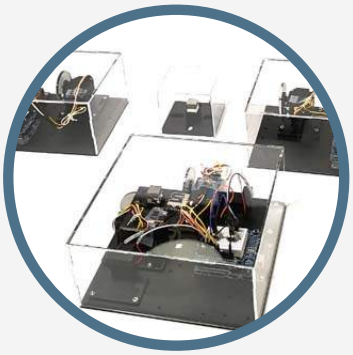
Experiment 1: Measuring Single Photons

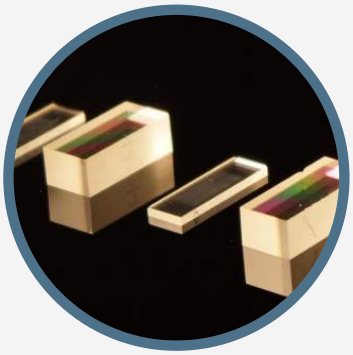
Experiment 2: Generating Bi-Photons

Experiment 3: Quantum States and Measurement Bases

Experiment 4: Photon Bunching and Indistinguishability

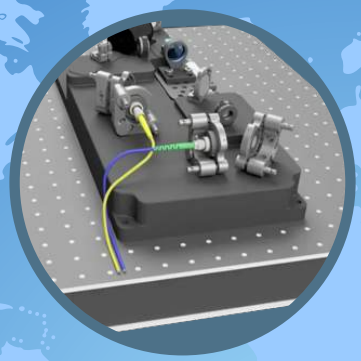
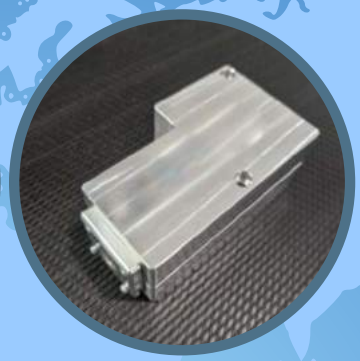
Experiment 5: Non-Locality and Local Realism







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IF NEEDED, WE CAN ARRANGE ONLINE MEETING.