

(150nm-25um) Ultra High Resolution NIR Spectrometer

ATP7330

Feature:

- Ultra high resolution, up to 0.01nm;
- Four different lengths customized: 210, 350, 510, 760mm
- Wavelength range: 150nm-25um (Customized)
- Tower rotation grating, built-in 3 gratings, multiple gratings optional: 90, 150, 300, 400, 500, 600, 900, 1200, 1800, 2400, 3600line ;
- Power supply: DC 12V@<4A;
- ADC depth: 18 bit (output 16bit);
- Multiple optical input interfaces: SM905 fiber interface or free space input;
- Dual-output with two CCD configured, Several types of detectors are available;
- Crossed C-T light path and toroidal aberration calibration design;
- The control of the instrument (such as grating conversion, wavelength scanning, etc.) is all controlled by computer
- Data output interface: USB2.0 & UART;
- 15-pin expansion interface;
- SMA external trigger signal;
- Multiple attachment can be select.

Application:

- Raman Spectroscopy;
- Fluorescence Spectroscopy;
- Photoluminescence Spectroscopy;
- Absorption, Reflection & Transmission Spectroscopy;
- LIBS;
- Microscope.

Describe:

ATP7330 is an ultra-high resolution spectrometer developed by Optosky with 20 years of spectrometer development experience. After five years of research and development, ATP7330 adopts reflective grating, which is convenient for quick replacement. The grating tower wheel is controlled by software, which can accurately locate the grating and test wavelength.

The ATP7330 system uses a simulated and optimized optical system to ensure high resolution. This design provides the possibility of multi fiber imaging at the same time by correcting the aberration. ATP7330 series has multiple input and output options, providing endless possibilities, scalability and diversity for researchers. Both single point detectors and array cameras can be used.

ATP7330 has four models with different focal lengths: 210, 350, 510 and 760mm. Different from prism spectrum or transmission grating, each ATP7330 can cover applications from ultraviolet to near-infrared and short wave infrared bands. Just select the appropriate grating, you can have more freedom in the selection of wavelength and resolution.

ATP7330 can receive SMA905 fiber input light or free space light, and output the measured spectral data through USB2.0 or UART port. .

ATP7330 only needs a + 12V DC power supply, which is very easy to use. All the controls can be electrically controlled by software.



1. Selection Table

PN	Focal Length	Aperture Ratio	PMT Resolution*	CCD Resolution**	Linear Dispersion
ATP7330-FL210	210mm	F/3.5	0.4nm	0.4 nm	4.17 nm/mm
ATP7330-FL350	350mm	F/4.2	0.1nm	0.14 nm	2.38 nm/mm
ATP7330-FL510	510mm	F/6.5	0.07	0.09	1.65nm/mm
ATP7330-FL760	760mm	F/9.7	0.04	0.05	1.03nm/mm

Notes:

- 1) *: with 1200 g/mm grating @ 435.8 nm and 10 μ m slit width and 4 mm slit height
- 2) **: with 1200g/mm grating @ 435.8nm 14 μ m pixel, 20 μ m slit width

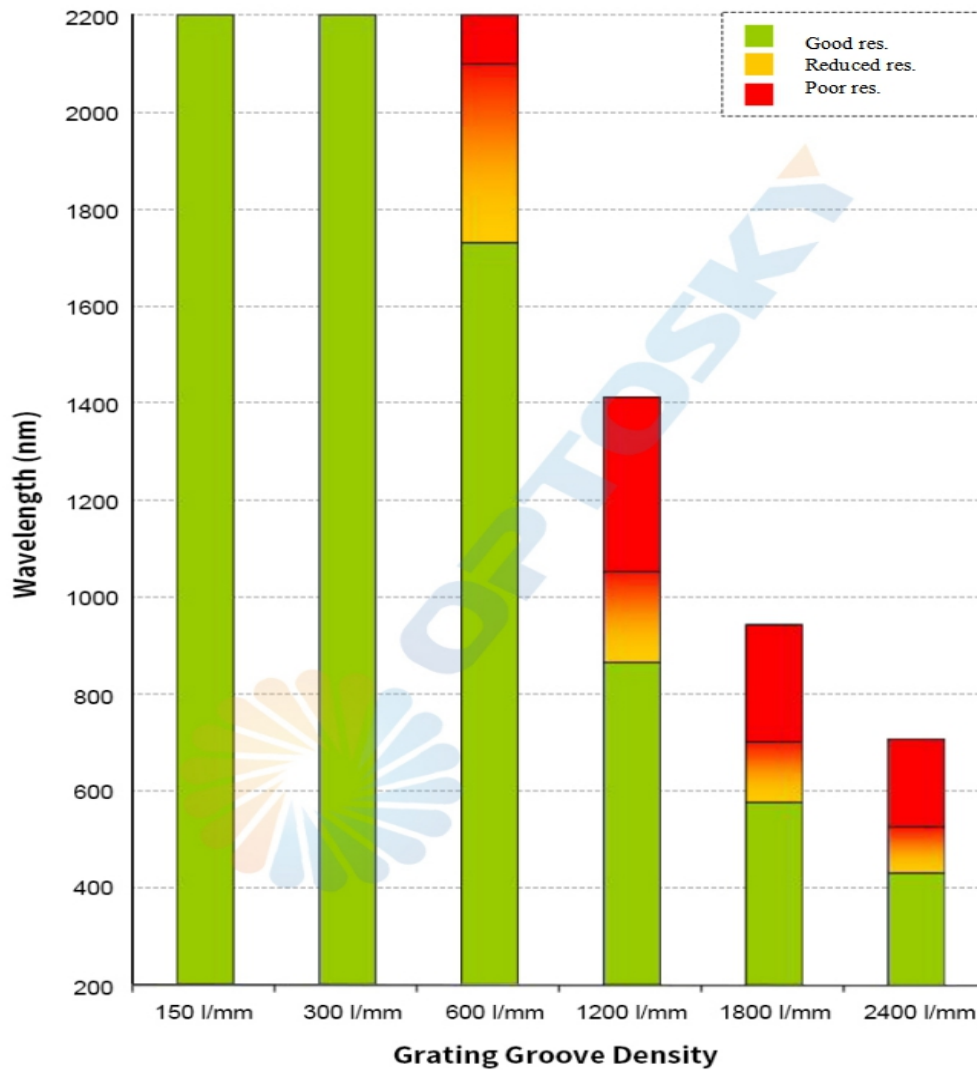


Figure 1 Different lines grating with corresponding wavelength range

2. Customized Detector

Spectral range	Model	Types	Material	Response range	Pixels	Cooled
<1100nm	ATP-S1	Cooled back-illuminated area array CCD	Si	150~1100nm	2048X64	-20°C
	ATP-S2	Deep-cooling back-illuminated area array			2048X264	-70°C
	ATP-S3	Deep-cooling area array EMCCD			1600 x 200 1600 x 400	-100°C
	ATP-S4	Unit Si detector			1X1	-10°C
	ATP-S5	Ultra-low temperature cooled CCD			2048X264	-130°C
	ATP-S6	Liquid nitrogen cooled CCD			2048X264	-190°C
900~2500nm	ATP-S7	Cooled linear array InGaAs CCD	InGaAs J11	900~1700nm	512X1	-20°C
	ATP-S8	Refrigerated linear array InGaAs CCD	InGaAs J13	900~2500nm	512X1	-20°C
	ATP-S9	Unit InGaAs detector	InGaAs J11	900~1700nm	1	-20°C
	ATP-S10	Unit InGaAs detector	InGaAs J13	900~2500nm	1	-20°C
>2.5μm	ATP-S11	Unit PbS detector	PbS	1~3μm	1	-20°C
	ATP-S12	Cooled line array PbS detector	PbS	1~3μm	256X1	-20°C
	ATP-S13	Cooled unit pyroelectric detector	Pyroelectric	1~25μm	1	-20°C
	ATP-S14	Cooled linear array pyroelectric detector	Pyroelectric	1~25μm	256X1	-20°C

3. Performance Parameter (180-2500nm)

Detector	
Model	TE Cooled CCD,TE Cooled InGaAs CCD, Cooled down to -40°C
Wavelength Range	180-2500nm
Effective Pixels	CCD: 2048, SWIR InGaAs CCD: 512
Optical Parameter	
Wavelength Range	180-2500nm, Customized
Optical Resolution	10 pm ~ 5 nm (Depend on different focal length, slit size, spectral range)
Max. Dynamic Range	SCMOS & CCD: >1400; SWIR InGaAs: >10000
Light Path Parameter	
Optical Design	Asymmetric Cooled C-T Optical Path
Focal Length	210, 350, 510 & 760mm
Grating	Tower rotation grating, built-in 3 gratings, multiple gratings optional: 150,300,400,500,600,900,1200,1800,2400,3600 line;
Grating Rotation Mode	Electronic Control
Grating Rotation Angle	0.36 μrad
Input Slit Width	5,10,25,50,100,150,200 μm Customized
Incident Light Interface	Support dual entry: SMA905 fiber interface, free space
Output Optical Interface	Support dual entry.
Electrical Parameters	
Integration Time	10μs - 256s
Data Output Interface	USB 2.0
ADC depth	18bit (output 16bit)
Power Support	12V DC±5%
Working Current	<4A
Working Temp.	-20°C ~ +45°C
Storage Temp.	-30°C ~ +70°C
Max. Working Humidity	< 90%RH (No Condensation)
Physical Parameters	
Dimension & Weight	ATP7330-FL210 : 600*400*155mm,15kg ATP7330-FL350 : 23Kg ATP7330-FL510 : 35Kg ATP7330-FL760 : 45Kg

4. Detachable Three-stage Grating Tower Wheel

- Each tower wheel can be installed with three gratings, which can be freely selected when order in.
- The tower wheel has optical installation interface, which can be calibrated automatically after installation.
- Wavelength coverage, luminous flux and resolution can be optimized according to requirements.

5. Customized Accessories

- Various fibers.
- Filter runner;
- Light source;
- 17 kinds of gratings optional;
- Wavelength calibration and intensity calibration system;



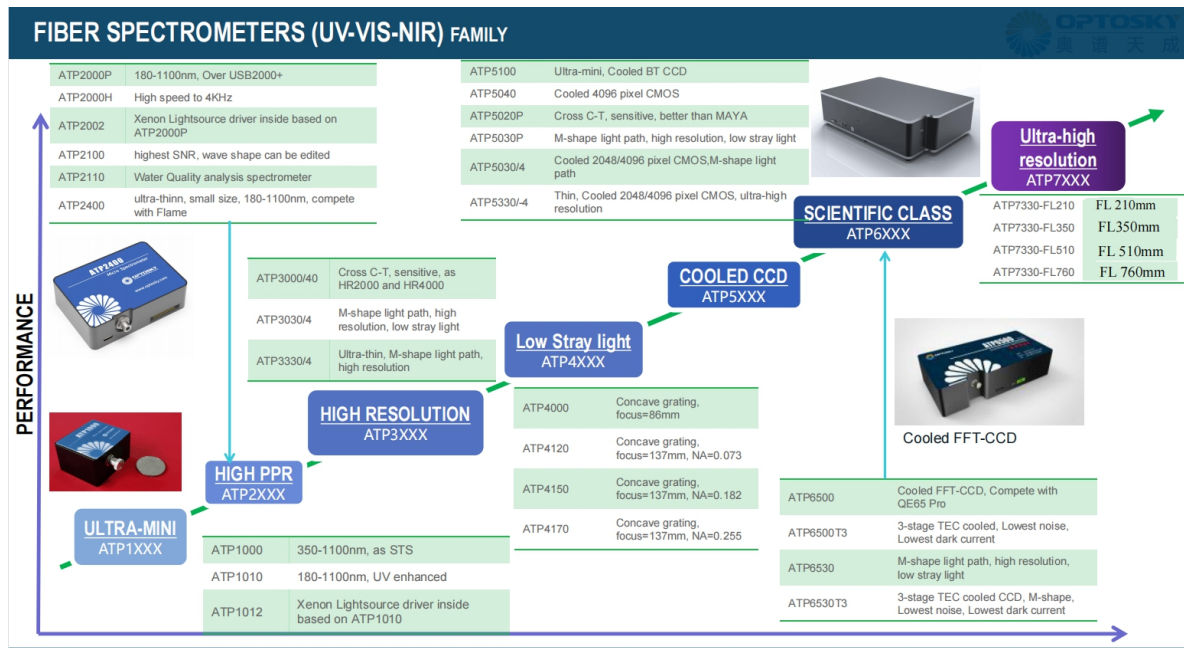


Fig 1 UV-VIS-NIR Spectrometer Order Guide

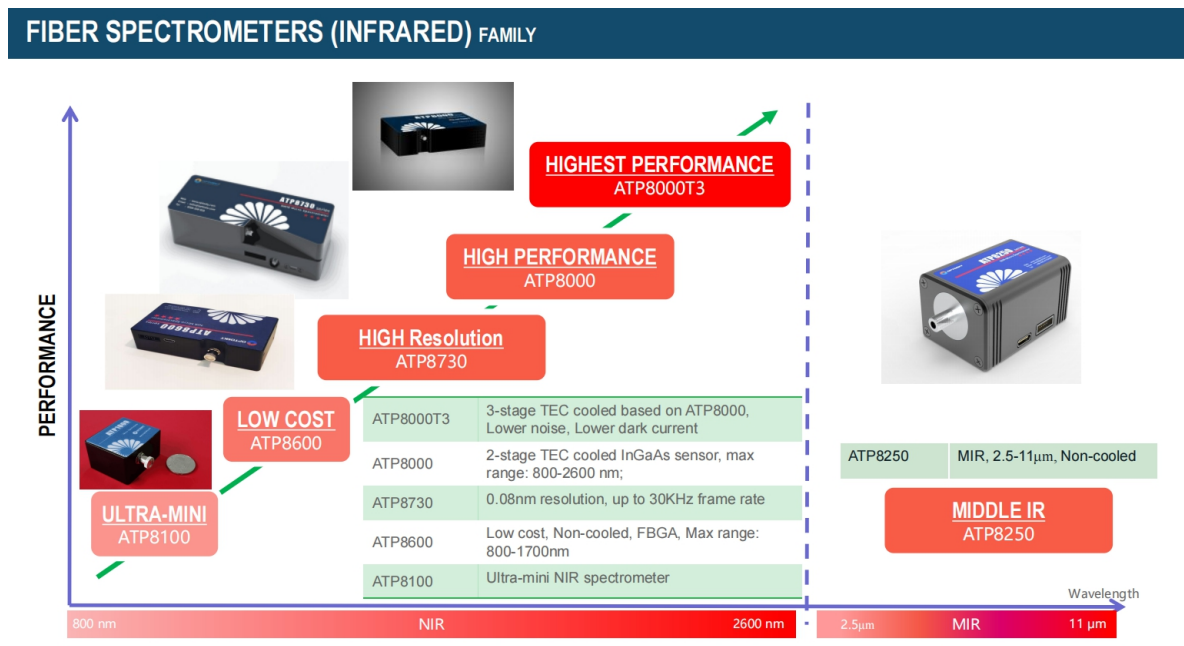


Fig 2 NIR-MIR Spectrometer Order Guide

6. Company Profile

Optosky company is an first-class spectroscopy solution provider, with the headquarter locates in the 7th floor of the research institute of the Chinese Academic of Science at an area of 2500 square meter in Xiamen city where successfully

held the international 9th BRICK summit in 2017. The subsidiary company locates in Wuhu city with an area of 2035 square meter.

The company founder Dr. Hongfei, Liu graduated Doctor degree from Chinese Academic of Science and postdoc degree from Xiamen University, by integrating both of top Universities' spectroscopy technology background into Optosky company aiming at developing the leading spectroscopy equipment in the world.

The company bases on unique technologies of Optomechanics, Spectroscopy Analysis, Process Weak Optical and Electrical Signals, Cloud Computing, and have been developed wide products line of the competitive Raman spectroscopy instruments, micro spectrometer, hyperspectral imager, field spectroradiometer, fluorescence spectroscopy, LIBS etc. Driven by advanced technologies and products, Optosky brand has been well-known to customers all over the world.

Optosky company base on technologies innovation, market driven direction, customer first, provides first-class products and services, and one-stop solutions to many fortune 500 companies in many industries. The company received praise from different industries companies, as well as many innovative intellectual property, software copyright, qualification certification, and winner awards over hundred numbers.

Optosky receives top class A introduced high-tech company to international Xiamen city, the national high-tech and new innovative technology company award. The founder Dr. Hongfei Liu receives the innovation talent award by ministry of science and technology.

The company is currently conducting the exclusive project of major industrialization national oceanic administration with a total fund of five million us dollar. The company in charge of drafting national industry standard of VNIR and SWNIR Field Spectroradiometer, and six national standard drafter, including China National Standard Drafter for Hazmat detector based on Raman spectroscopy, China National Standard Drafter for Buoy-type Monitor eco-environment, China National Standard Drafter for water quality monitor in unmanned boat, China National Standards drafter for online water quality monitor by spectroscopy, China National Standard Drafter for UV-absorbent measure fabrics.

The company has over 70 IPs and over 20 innovative patents.

The company received ISO9001:2015 certification, CE certification, Police Administration Certification, FDA approval compliant, IQOQPQ compliant.



Figure 2 Optosky (Xiamen) Photonics Inc. Company Headquarter

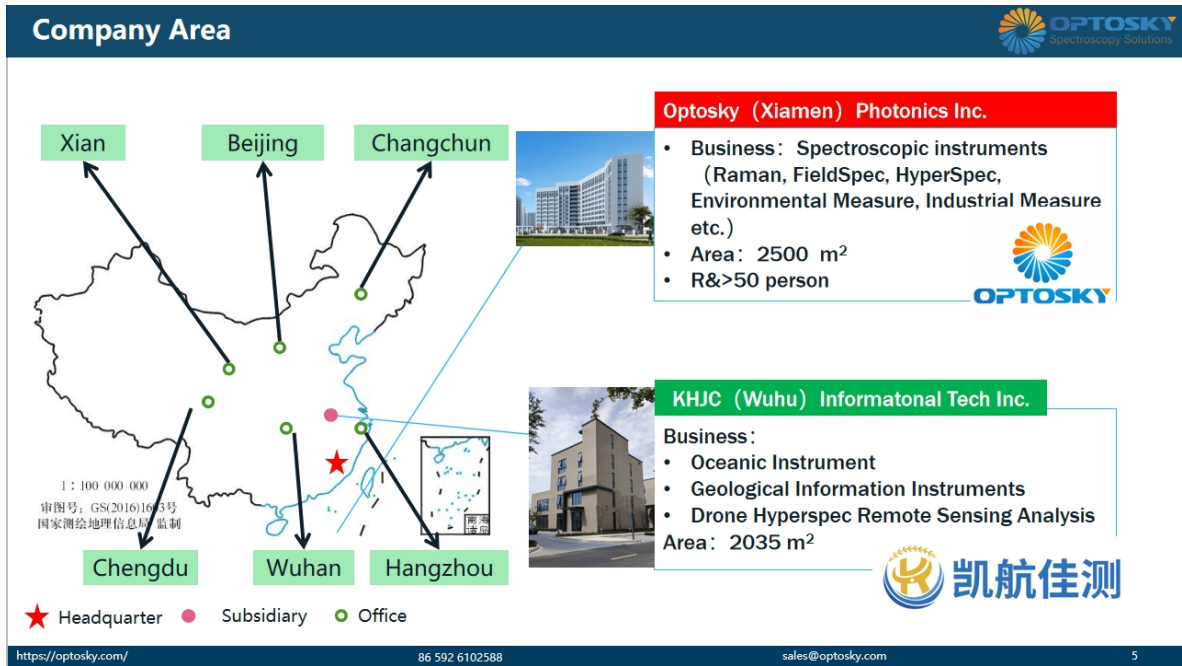


Figure 3 Optosky Company Area

Qualification



			
ISO9001:2005	GB/T 23001 Informationization & Innovation	CE, RoHS, LVD 17 models	Police Approval 11 models
			
GB/T 29490 IP implementation	5 Innovative patents	35 patents new utility design	32 Software copyright

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Figure 6 Qualification

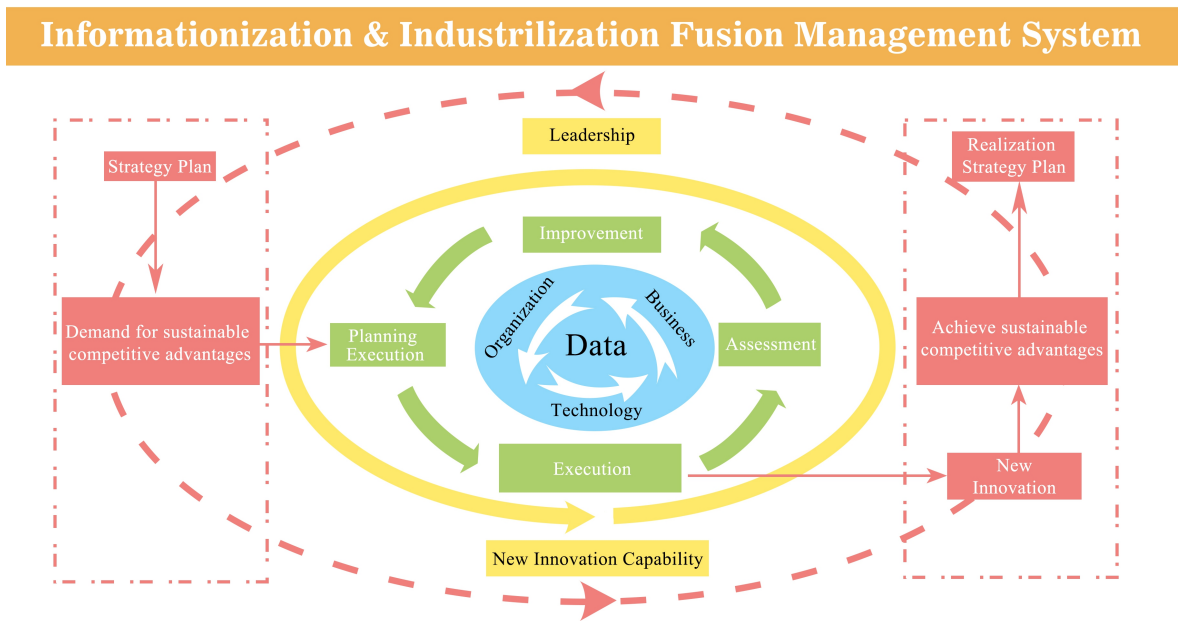


Figure 7 GB/T 23001_Informationization & Industrilization Fusion Management System

Co-Founder—Dr. Hongfei Liu 



Postdoctoral Hongfei Liu

- Selected "Innovative Talent" by Science and Technology ministry
- Top Class A Talent by Xiamen City
- CCTV Science & Technology Interview
- Fortune 500 experience in Agilent, II-VI

Honors

- Selected by science & technology ministry as "Innovation Talent"
- CCTV Science & Technology Interview
- Top Class A Talent credited by Xiamen City
- **Innovation Hero**

Education

- PhD • Chinese Science of Academic • Prof. Gui-Lin Chen, Originator in spectroscopy
- Postdoctoral • Xiamen University • Prof. Zhong-Qun Tian guided by the SERS founder M.Fleischmann

Career

- Engineer → R&D Manager → GM
- **Agilent**, Leader of instrument, Fortune 500 company, Job: engineer
- II- VI Incorporated (Nasdaq: IIVI) leader in optical & electrical industries, Job: GM of Instrumentation and Automation

Academic

- University graduate tutor
- obtain more than 60 IPs, more than 10 Innovation patents;
- Publish more than 20 papers, 2 recorded SCI, 8 recorded EI

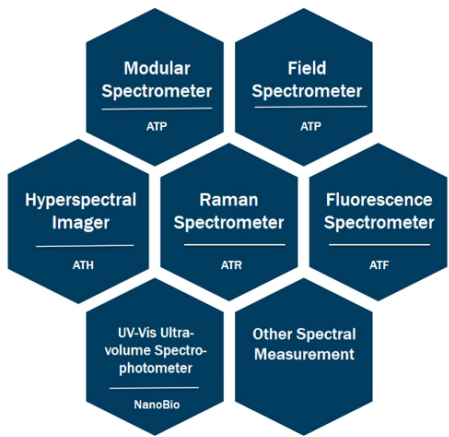


Founder & Tutors

Figure 8 Optosky's Co-founder_Dr. Hongfei Liu

Category & Application 

Category



Application

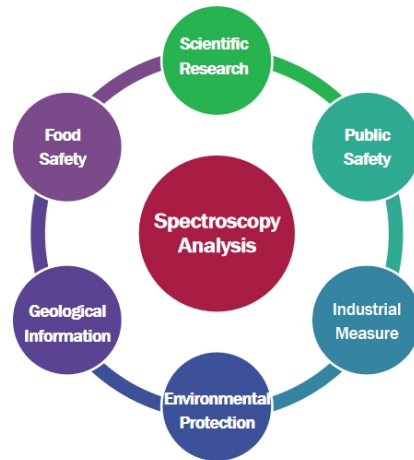

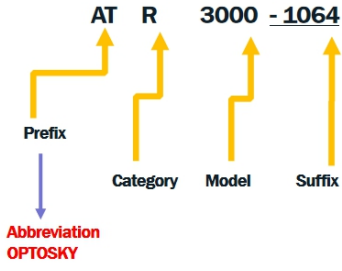


Figure 9 Category & Application

Model Name Rule


Model Name Rule:

- Prefix
- Category
- Model
- Suffix



- **ATR** - Raman Spectrometer
- **ATP** - Micro Spectrometer
- **ATH** - Hyperspectral Imager
- **ATF** - Micro Fluorescence Spectrometer
- **ATL** - LIBS
- **ATW** - Water
- **ATE** - Environment Protect
- **ATFD** - Food Safety
- **GA** - Public Safety (**Gong An**)
- **GF** - Gas Monitor (**Gas Finder**)
- **GY** - Industrial Monitor (**Gong Ye**)

eg:

- Raman Microscope: ATR8300MP-1064
- Hyperspectral Imager: ATH9500

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Figure 10 Model Name Rule