OPTOSKY
Spectroscopy Solutions

Datasheet

High Sensitivity & High Resolution Portable Raman Spectrometer

ATR2500

Feature

- Full free space design, super high sensitivity;
- Ultra-high sensitivity detector;
- Ultra-low noise circuit;
- Ultra-light, ultra-small, ultra reliable;
- Powerful spectral analysis software;
- Eliminate fluorescent background;
- Peak search and display;
- USB 2.0;
- Friendly man-machine interface.

Application:

- Nanoparticles and new materials
- Research of Research Institute
- Bioscience
- Forensic Medicine
- Material science
- Medical immunoassay
- Agriculture and food identification
- Gems and inorganic minerals ID
- Environmental science

Describe:

ATR2500 is a Raman spectrometer developed by Optosky for more than 20 years. After 5 years, it has developed a brand-new, optimized and designed high-sensitivity Raman spectrometer with breakthrough characteristics. It has ultra-small and ultra-light, High resolution, high sensitivity, high reliability, etc. ATR2500 adopts Optosky's latest full free space optical path technology, which increases the Raman signal collection efficiency by nearly 4 times, thereby increasing the sensitivity by 4 times.

The ATR2500 Raman spectrometer is very suitable for laboratory scientific research. It is small in size, high reliability, easy to measure, and the detection results are accurate and reliable. The excellent low stray light design of ATR2500 makes it easy to use. The multi-function software randomly distributed by ATR2500 has been strictly tested by hundreds of scientists around the world and collected their improvement opinions. After nearly a hundred versions of updates, the function is very complete and stable, which is very suitable for the development of Raman research.

Model	Spectral Range (cm^{-1})	Resolution (cm^{-1})
ATR2500-27	250-2700	4~6
ATR2500-40	200-4000	7~10

Note:

- Tested according to the American National Standard ASTM E2529-06;

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1 Performance Parameter

ATR2500			
Interface	USB 2.0		
Integration time	4ms - 120s		
Voltage	DC 5V±5%		
Work temperature	-10~45 ℃		
Work humidity	< 95%		
Dimension(L*W*H)	Without probe：119.2×89×35 mm With probe：139×89×35 mm		
Weight	390 g		
Reliability			
Spectral reliability	σ/μ < 0.5%　(COT 8 hours)		
Temperature reliability	Spectral shift ≤ 1 cm^{-1} (10-40 ℃)		
Spectral intensity	<±5%（in 5 ~ 40 ℃)		
Optical parameter			
Spectral range (cm^{-1})	250-2700	/	200-4000
Resolution (cm^{-1})	4~6	/	7~10
SNR	>1300:1 (918 cm^{-1} of Acetonitrile，4sIntergation, 130mW)		
Detector			
Model	Ultra-sensitive linear array detector		
Spectral range	200-1100 nm		
Effective pixels	2048 pixels		
Dynamic range	50000：1		
Laser			
Center wavelength	785±0.5nm		
Half width	0.08 nm		
Maximum output power	≥300 mW，the actual output power software can be set		
Minimum power output adjustment	1mW		
Power stability	σ/μ <±0.2%		
Raman probe			
Rayleigh Scatter Resistance	6 mm		
Operating Distance(OD)	OD>8		
NA	0.3		
Aperture	7mm		

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2 ATR2500 Spectrum

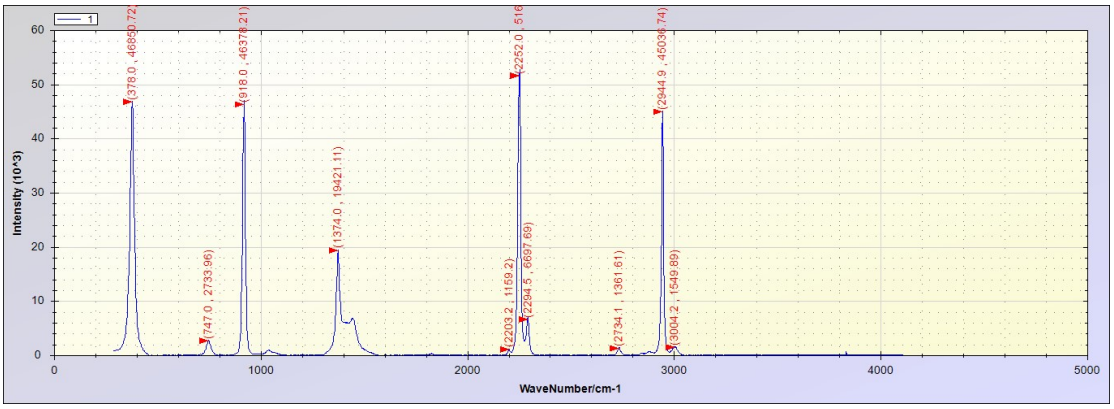

Figure 1 Raman spectrum curve test results; sample: acetonitrile, laser power: 130mW, measurement integration time: 4000ms.

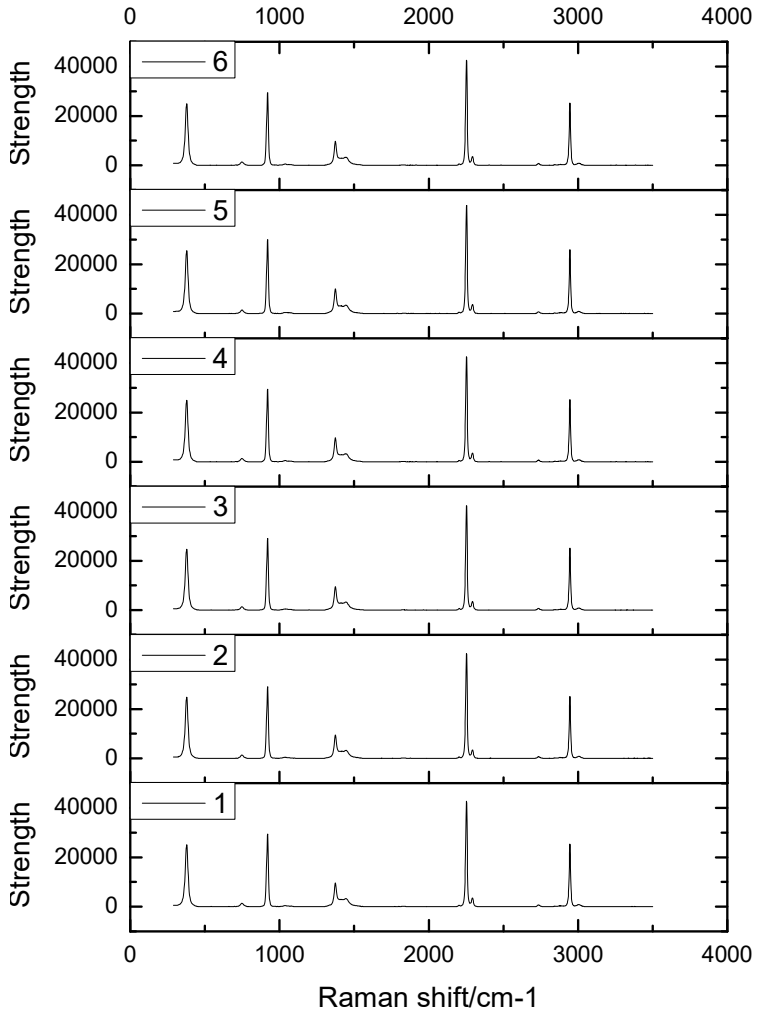

Figure 2 Spectral intensity repeatability test, the result is 0.06%, the spectral intensity stability is good.

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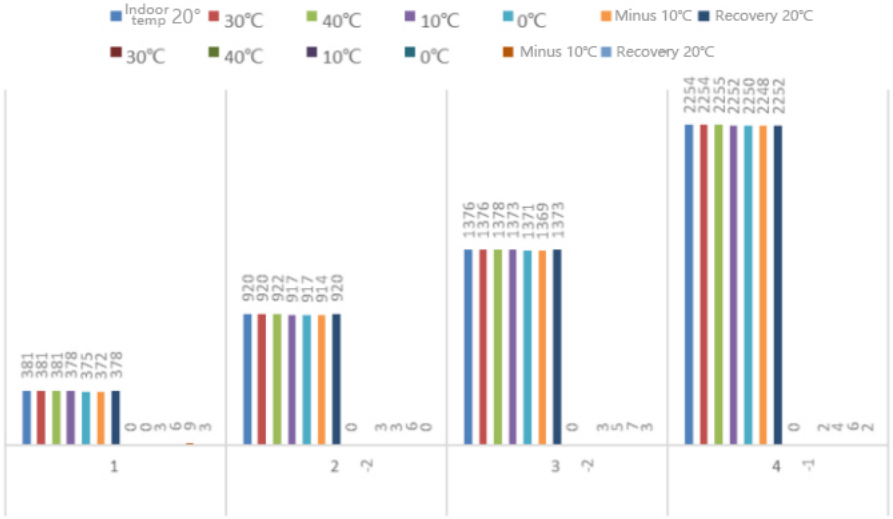

Figure 3 Temperature drift test, -10~40℃ wavenumber drift

3 ATR2500 Dimensions

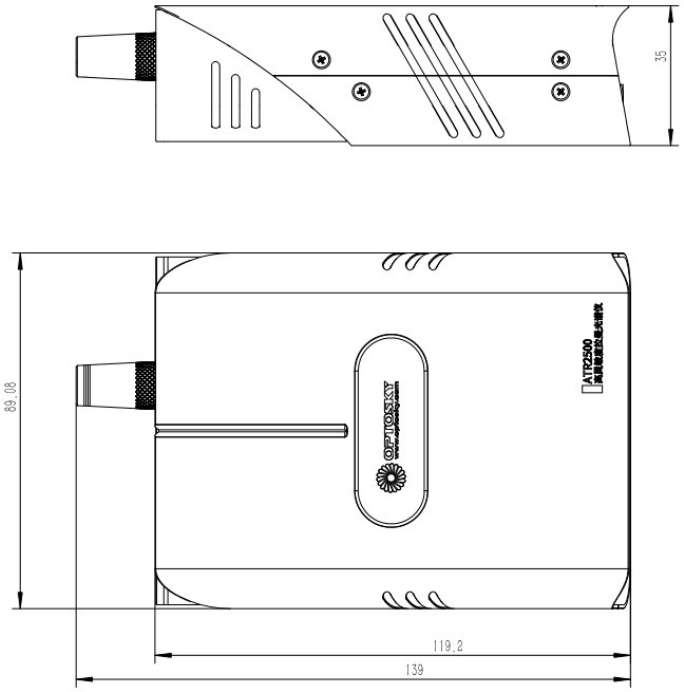

Figure 4 ATR2500 Dimensions

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1. Company Profile

Optosky company is a 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 meters.

The company founder Dr.Hongfei,Liu graduated Docter degree from the Chinese Academic of Science and postdoctoral 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 Optomechatronics, 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 technology 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 industry companies, as well as many innovative intellectual properties, software copyright, qualification certification, and winner awards over hundred numbers.

Optosky receives top class A introduced the 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 the 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 dollars. The company in charge of drafting national industry standard of VNIR and SWNIR Field Spectroradiometer, and six national standard drafters, 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 the unmanned boat, China National

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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 1 Optosky (Xiamen) Photonics Inc. Company Headquarter

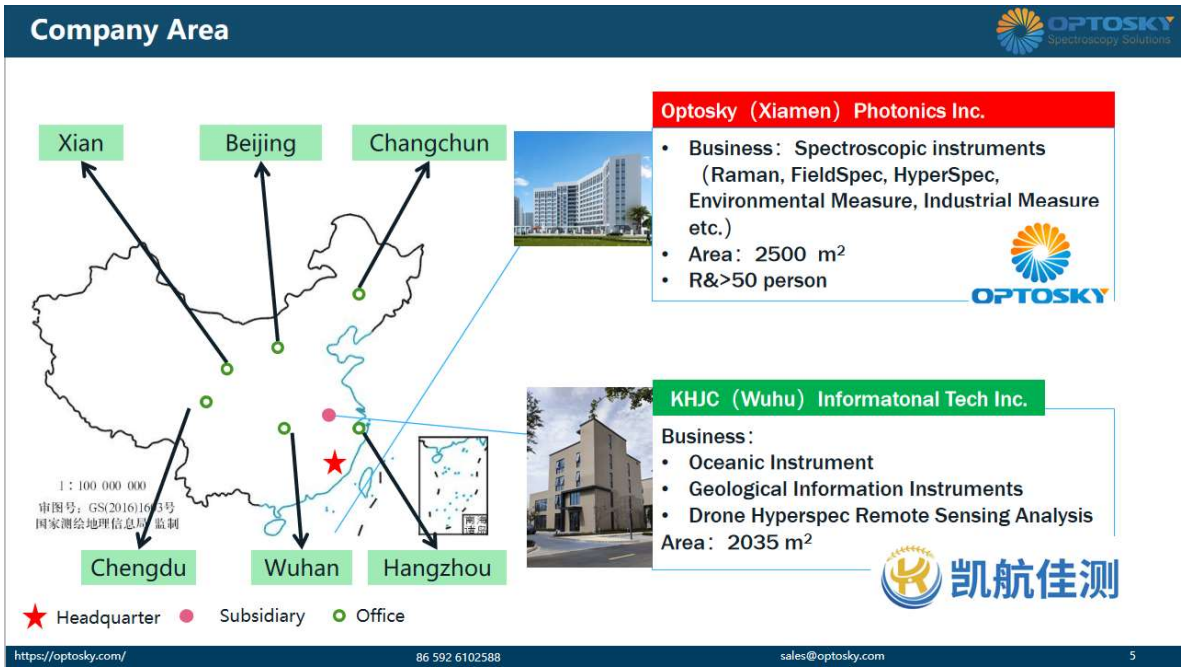

Figure 2 Optosky Company Area

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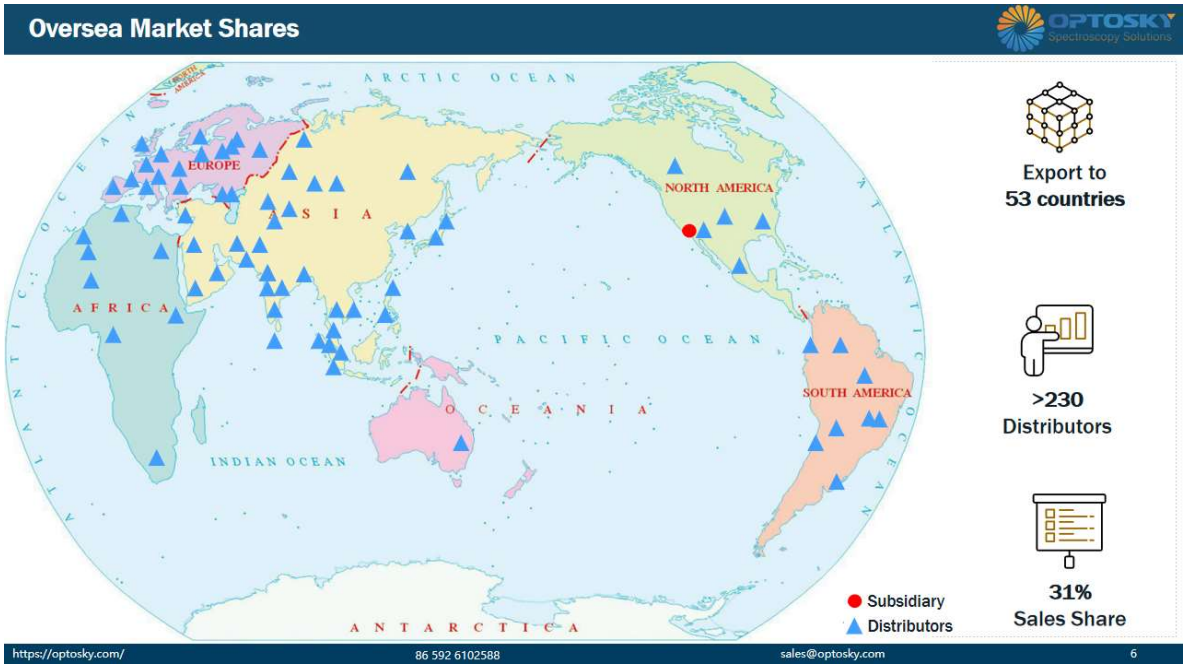

Figure 3 Oversea Market Shares

Figure 4 Optosky Chair and Draft National Standards Lists.

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Figure 5 Qualification

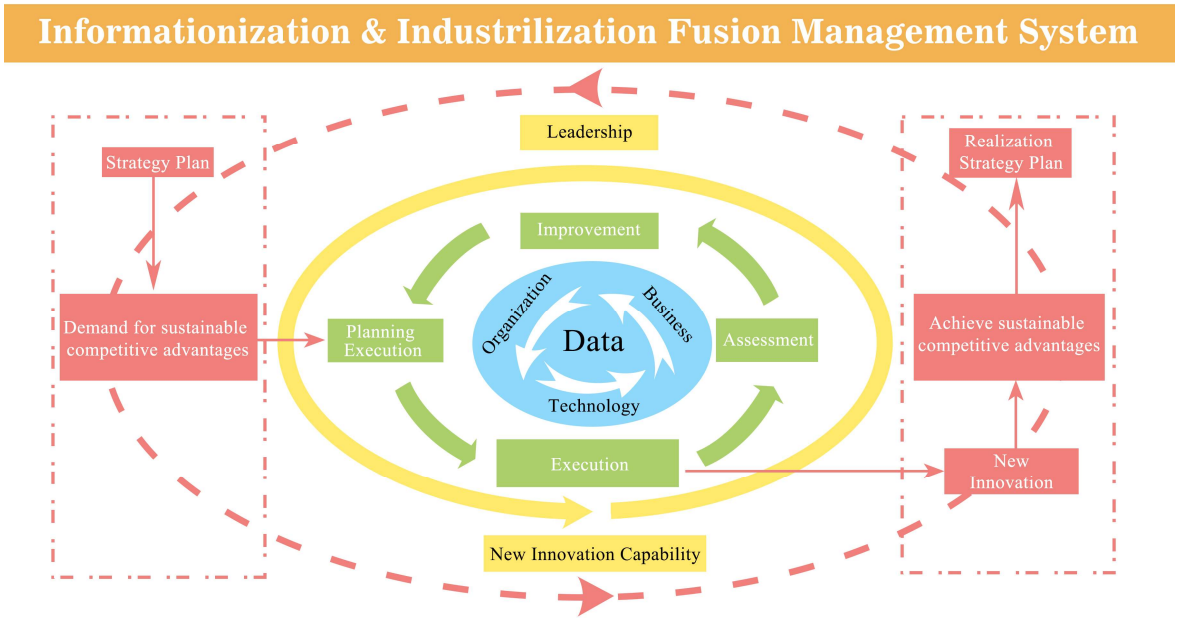

Figure 6 GB/T 23001_Informationization & Industrilization Fusion Management System

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Figure 7 Optosky's Co-founder_Dr. Hongfei Liu

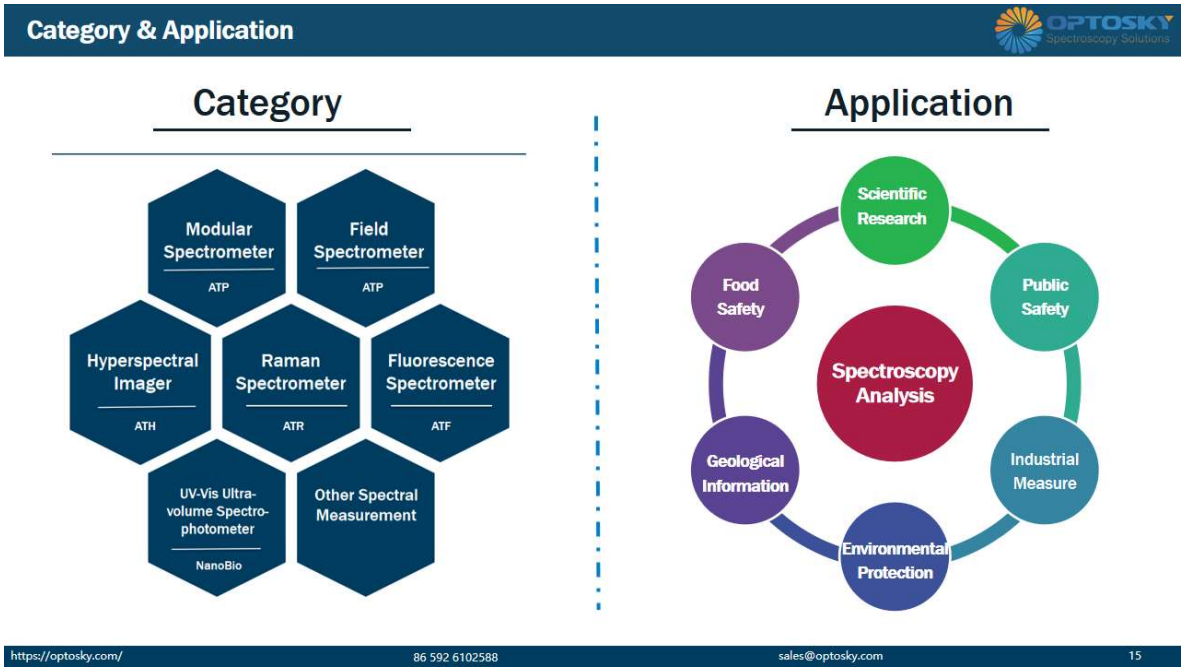

Figure 8 Category & Application

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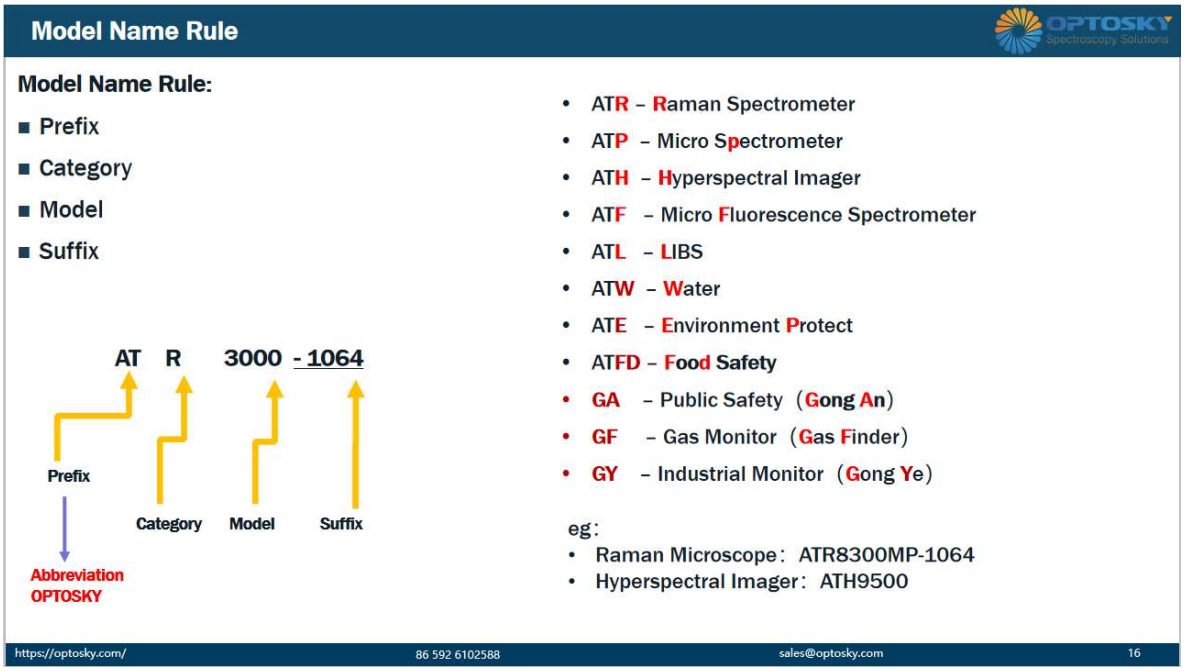

Figure 9 Model Name Rule

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