OPTOSKY Spectroscopy Solutions

Datasheet

UAV Hyperspectral Imaging System

ATH9010

Features

- Spectral range: 400-1000nm
- Optimal spectral resolution: better than 1.3 nm
- Wide FOV: 11.46°@f=25mm (depends on lens)
- IFOV: 0.167mrad@f=35 mm (depends on lens)
- Flight altitude: 50-1000m, REC. 100-300m
- Compatible With DJI M350 with higher adaptability and lighter weight
- Support remote control via the DIJ M350 remote controller
- Ultra-long flight time: about 45 minutes, large flight area

Application

- Geological and mineral resources exploration, soil monitoring
- Precision agriculture, crop growth and yield assessment
- Forest pest and disease monitoring and fire prevention monitoring
- Coastline and marine environment monitoring
- Pasture productivity and pasture monitoring, ecological environment protection and mine monitoring
- Remote sensing teaching and scientific research, meteorological research, disaster prevention and control
- Lake and watershed environmental monitoring, water quality testing
- Agricultural and livestock product quality testing
- Military, Defense and Homeland Security

Description

The ATH9010 series is Optosky's 3rd-generation UAV-borne hyperspectral imager. This compact, lightweight mini hyperspectral imager series is designed for UAV platforms. The system consists of high-stability quad-rotor / hex-rotor UAV, stabilized gimbal, hyperspectral imager, high-capacity storage system and GPS navigation system.

ATH9010 (Standard Configuration) and ATH9010W (Wide-Field-of-View) adopt high-performance imaging sensors with 1920 × 1200 pixels and 2048 × 2048 pixels respectively, delivering sharp images with low noise. The ATH9010 series comes with high-performance hyperspectral data acquisition and processing software.

The ATH9010 series UAV-borne hyperspectral imager enables real-time spectral measurement and spectral image acquisition for ground objects such as vegetation, water bodies and soil. By analyzing spectral images, correlations can be established with physicochemical properties of plants to support research on plant classification and plant growth status. The whole system features compact design. The main hyperspectral imager provides high spectral resolution. It adopts external push-broom imaging and performs aerial remote sensing missions when mounted on UAVs.

Model	Specifications
ATH9010	Spectral range 400-1000nm, standard with DJI M350, optional 6-rotor UAV, flight time 45 min
ATH9010W	With Wide FOV, Spectral range 400-1000nm, standard with DJI M350, optional 6-rotor UAV, flight time 45 min
ATH9010-4-17	Heavy-duty 6-rotor UAV, spectral range 400-1700nm
ATH9010-4-25	Heavy-duty 6-rotor UAV, spectral range 400-2500nm

Product data information is current as of publication data. Products conform to specifications per the terms of Optosky Standard warranty.

Copyright © Optosky(Xiamen) Photonics Inc. 2015
1503 Bld. A04, 3rd Software Park, Jimei, Xiamen, 361005, China
Tel: +86-592-6102588

Fig. 1 ATH9010 with hex-rotor UAV (Left); ATH9010 with quad-rotor UAV (Right)

1. Ordering Guide

Model	Specifications
ATH9010	Spectral range 400-1000nm, standard with DJI M350, optional 6-rotor UAV, flight time 45 min
ATH9010W	With Wide FOV, Spectral range 400-1000nm, standard with DJI M350, optional 6-rotor UAV, flight time 45 min
ATH9010-4-17	Heavy-duty 6-rotor UAV, spectral range 400-1700nm
ATH9010-4-25	Heavy-duty 6-rotor UAV, spectral range 400-2500nm

*Note: 1.W is the abbreviation of wide field of view;

2. This broad- spectral- range hyperspectral imager has relatively heavy weight, so it cannot be carried by ordinary fixed- wing UAVs. Custom integration is available if required; however, high- payload fixed- wing UAVs come with considerably higher costs.

2. Parameter

Model	ATH9010	ATH9010W
Data Interface	USB3.0	
Imaging Mode	Push-broom	
Effective Pixels (Before Binning)	1920 (Spectral Dim.) × 1200 (Spatial Dim.)	2048 (Spectral Dim.) × 2048 (Spatial Dim.)

Copyright © Optosky(Xiamen) Photonics Inc. 2015
1503 Bld. A04, 3rd Software Park, Jimei, Xiamen, 361005, China
Tel: +86-592-6102588

Effective Pixels (After Binning)	480 (Spectral Dim.) × 300 (Spatial Dim.)	512 (Spectral Dim.) × 512 (Spatial Dim.)
Spectral Range	400~1000nm	
Spectral Resolution	No Binning: ≤1.3nm 4×4 Binning: ≤2.7nm	No Binning: ≤1.3nm 4×4 Binning: ≤2.2nm
Focal Length	Default: 35 mm; 25 mm, 16 mm focal-length lenses optional	
FOV	11.5°@f=35 mm 16.0°@f=25 mm	18.3°@f=35 mm 25.4°@f=25mm
IFOV	0.167mrad@f=35 mm 0.234mrad@f=25 mm	0.157mrad@f=35 mm 0.220mrad@f=25mm
Slit Width	Default: 25μm; 15μm optional	
System Numerical Aperture	F/2.6	
Detector	CMOS	
Dynamic Range	73dB	60dB
Bit Depth	12bit	
Max. Frame Rate	164fps	90fps
Remote Control	Support only with DJI	
Onboard storage	256GB, Maximum 512GB	
Detector Power Supply	5V, 3.4W	
Working Temperature	-20 ~ 50 ℃	
Storage Temperature	-30 ~ 70℃	
Working Humidity	≤85% RH	
Software		
Basic Functions	Flexible configuration of exposure and speed; real-time dynamic display of hyperspectral images and spectral curves.	
Focusing	Real-time hyperspectral image display for scientific brightness-based focusing, eliminating manual visual focusing errors.	
Software System	Data Acquisition Software: Real-time display of hyperspectral images & spectral curves; flexible setup of exposure time, speed and other parameters. Data Processing Software: Supports spectrum viewing, image cropping, mosaicking, reflectance correction, vegetation index calculation, cluster	

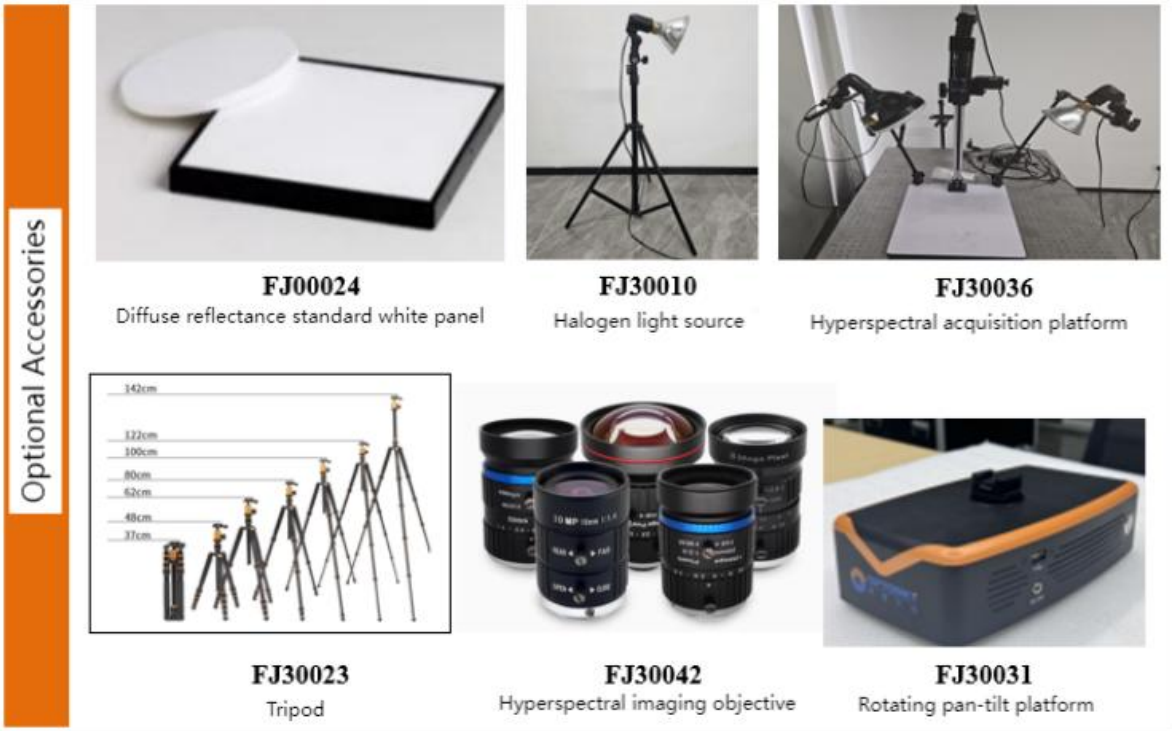
Copyright © Optosky(Xiamen) Photonics Inc. 2015
1503 Bld. A04, 3rd Software Park, Jimei, Xiamen, 361005, China
Tel: +86-592-6102588

	analysis, supervised classification and water-quality inversion.
Flight Platform	**Custom long-endurance heavy-duty large 6-rotor UAV**
Gimbal	High-stability 3-axis DC brushless motor gimbal
Rotor Count	6- rotor
Take-off and Landing Mode	Vertical Take-off and Landing (VTOL)
Wheelbase	1500 mm
Max. Payload	6 kg
Max. Ceiling	5000 m
UAV Dimensions	1650 × 1410 × 500 mm
GPS Positioning Accuracy	0.5 m; RTK (0.1 m) optional
Flight Endurance	>45 min
GCS Operating Range	10 km
Flight Platform	**DJI Matrice 350 RTK (M350 RTK) UAV**
Gimbal	High-stability 3-axis DC brushless motor gimbal
Rotor Count	4-rotor
Take-off and Landing Mode	Vertical Take-off and Landing (VTOL)
Dimensions(unfolded)	810 × 670 × 430mm
Dimensions(folded)	430 × 420 × 430 mm
Weight with Battery	About 3.7kg
Max. Take-off Weight	9.2 kg (with dual batteries & payload)
Max. Payload Capacity	2.7 kg (with dual batteries)
Hover Endurance	55 min (no-load, wind-free); 30-40 min (typical payload e.g. H20T camera)
Max. Wind Resistance	12m/s Level 6 wind
Operating Temperature	-20°C to 50°C
Protection class	IP55 (dust-proof and water-resistant for rain-snow conditions)

Copyright © Optosky(Xiamen) Photonics Inc. 2015
1503 Bld. A04, 3rd Software Park, Jimei, Xiamen, 361005, China
Tel: +86-592-6102588

3. Packing List and Accessories List

NO.	Item	Specification	Quantity
1	ATH9010 Hyperspectral Imager	400-1000nm	1
2	UAV Flight Platform	DJI M350	1
3	UAV Gimbal	3 Axis Stabilization	1
4	UAV Landing Gear and Damping Structure	/	1
5	Memory card	256GB	1
6	Card Reader	/	1
7	Drone battery	5880mAh	2
8	Reflectance Standard	50×50cm, 95% reflectance	1
9	Camera Connection Cable	USB 3.0	1



Copyright © Optosky(Xiamen) Photonics Inc. 2015
1503 Bld. A04, 3rd Software Park, Jimei, Xiamen, 361005, China
Tel: +86-592-6102588

4. Applications and Actual Measurement Data

Figure 11 Indoor installation of the ATH1010 hyperspectral imager

6.1 Geological and Mineral Resource Exploration

Hyperspectral remote sensing technology in the field of geology is mainly applied to the inversion of surface feature distribution. By identifying shared characteristic absorption peaks between unknown materials and known minerals, it can classify surface features. With its high spectral and spatial resolution and integrated imaging-spectroscopy capabilities, it enables detailed classification of terrain in mountainous and canyon regions, improving the efficiency of geological surveys and reducing risk.

The working area is mainly composed of limestone, slate, and Quaternary loess cover.By extracting aluminum hydroxyl spectral features, the distribution of slate can be preliminarily determined.By

Copyright © Optosky(Xiamen) Photonics Inc. 2015
1503 Bld. A04, 3rd Software Park, Jimei, Xiamen, 361005, China
Tel: +86-592-6102588

extracting carbonate spectral features, limestone distribution can be assessed.The Quaternary loess layer has no significant spectral features.

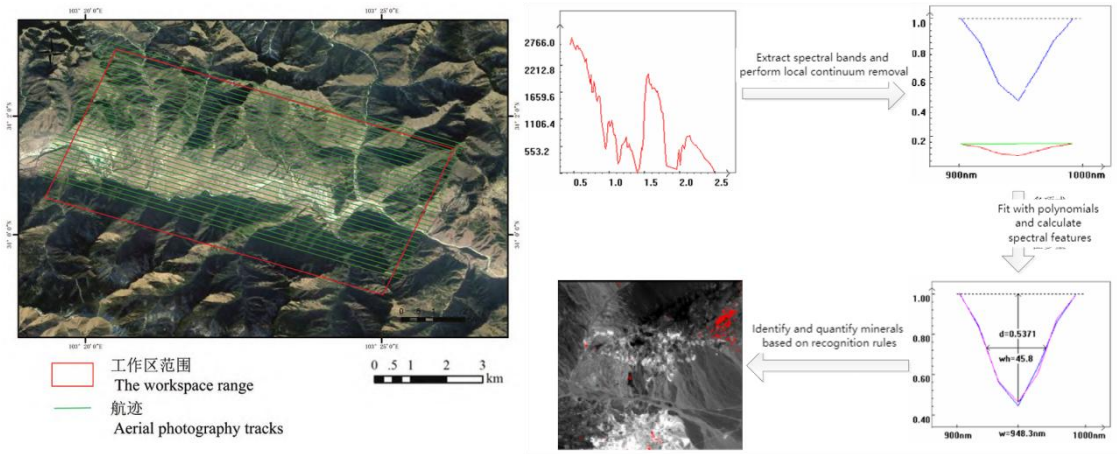


Figure 12 Geological Study Area (left) and Identification Process (right)

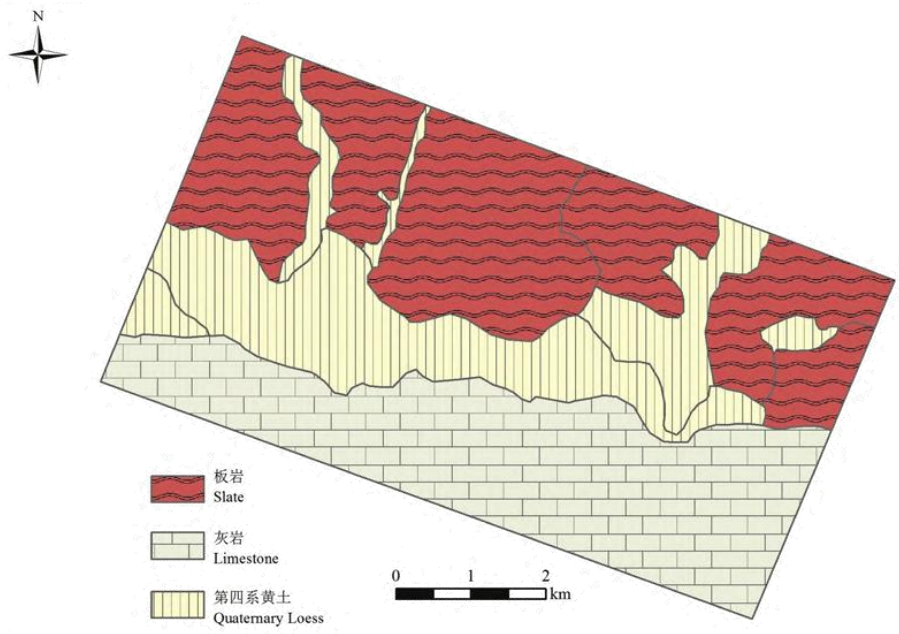


Figure 13 Results of geological inversion

The spectral wavelength range used for mineral mapping includes: Visible light (400–700 nm), Near-infrared (700–1000 nm), Short-wave infrared (1000–2500 nm),Thermal infrared (7000–15000 nm). Among these, the short-wave infrared region (1000–2500 nm) is most widely used in mining applications. This is because its frequencies align with the overtone and combination frequencies of

Copyright © Optosky(Xiamen) Photonics Inc. 2015
1503 Bld. A04, 3rd Software Park, Jimei, Xiamen, 361005, China
Tel: +86-592-6102588

chemical bond vibrations within mineral crystal lattices. Within this range, minerals containing water or OH^- (primarily phyllosilicates and clay minerals), as well as some sulfates and carbonates, can be detected.

Figure14 Outdoor Display of ATH9010

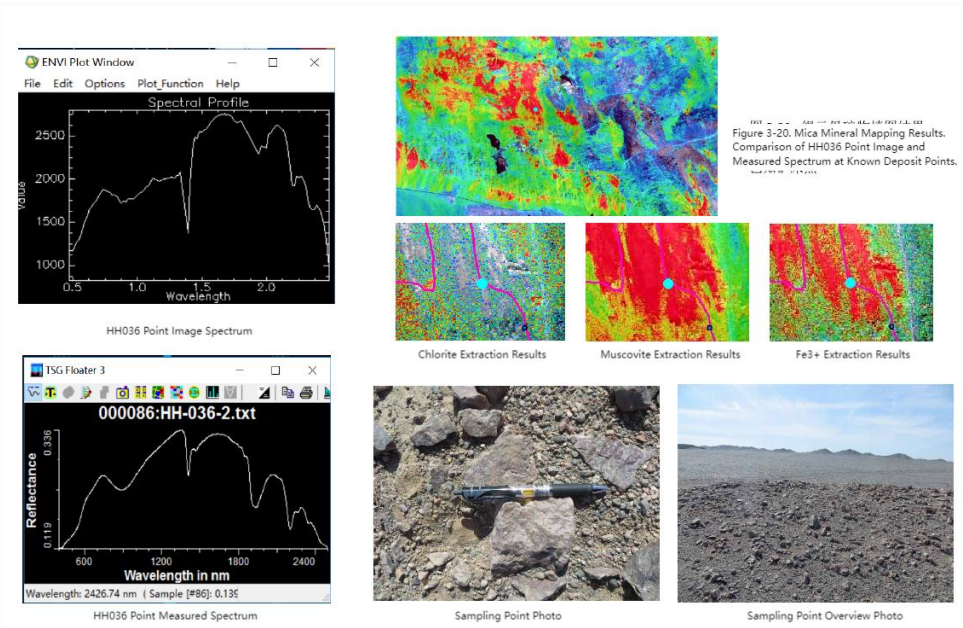


Figure 15 Spectral Curve of Selected Muscovite Samples

Copyright © Optosky(Xiamen) Photonics Inc. 2015
1503 Bld. A04, 3rd Software Park, Jimei, Xiamen, 361005, China
Tel: +86-592-6102588

6.2 Application in Vegetation Growth Monitoring

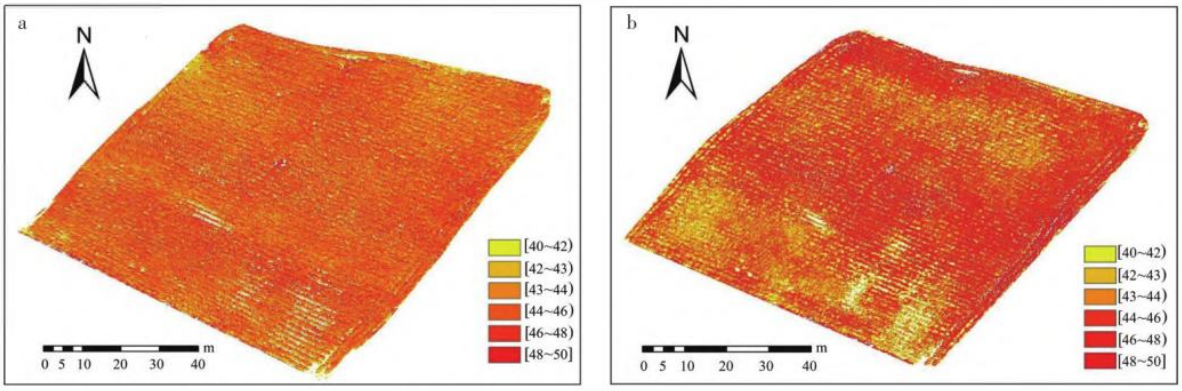
In recent years, with the rapid development of remote sensing technology and drone platforms, UAV-based hyperspectral remote sensing has shown great potential in vegetation growth monitoring. This technology captures detailed physiological traits of plants—such as chlorophyll content, water status, and nutrient condition—through high-resolution, narrowband spectral data, thereby assessing crop health more accurately.

Compared to traditional satellite or airborne remote sensing, drone platforms offer flexibility, low cost, and high timeliness, allowing real-time monitoring across different growth stages. This supports precision agriculture with reliable data. UAV hyperspectral imaging is also widely used in forest, grassland, and ecological environment monitoring. By constructing vegetation indices and performing multi-angle data analysis, it enables early disease warning, yield prediction, and evaluation of ecological restoration efforts.

In the future, as sensors become more compact and data processing algorithms improve, this technology is expected to play an increasingly vital role in agriculture, forestry, and ecological monitoring.

Figure 16 Vegetation Inversion Results from ATH9010 Hyperspectral Drone (Greener color = Healthier growth)

Copyright © Optosky(Xiamen) Photonics Inc. 2015
1503 Bld. A04, 3rd Software Park, Jimei, Xiamen, 361005, China
Tel: +86-592-6102588



a. Tuber initiation stage b. Tuber bulking stage

Figure 17 UAV Hyperspectral Study of Potato SPAD Values

6.3 Application in Forest Health Assessment

UAV hyperspectral remote sensing, with its high spectral resolution and mobility, enables close-range acquisition of multi-spectral data from forest vegetation. The continuous spectral bands in hyperspectral data capture subtle changes in vegetation reflectance, which reflect physiological and biochemical states—such as chlorophyll content, water content, and pest or disease presence.

Based on radiative transfer theory and vegetation index models, reflectance spectra can be quantitatively linked to tree health, allowing rapid assessment and early warnings. UAVs' low-altitude, high-spatial and temporal resolution capabilities allow real-time monitoring over large forest areas, offering scientific support for forest resource management, pest control, and ecological protection.

Additionally, through data fusion and multi-temporal monitoring, the accuracy of monitoring can be improved, and dynamic trends in forest health can be tracked. This provides effective support for decision-makers and helps ensure the long-term stability of forest ecosystems.

Principle: Vegetation health correlates with greenness index, leaf area index, leaf water content, and light use efficiency.

Copyright © Optosky(Xiamen) Photonics Inc. 2015
1503 Bld. A04, 3rd Software Park, Jimei, Xiamen, 361005, China
Tel: +86-592-6102588

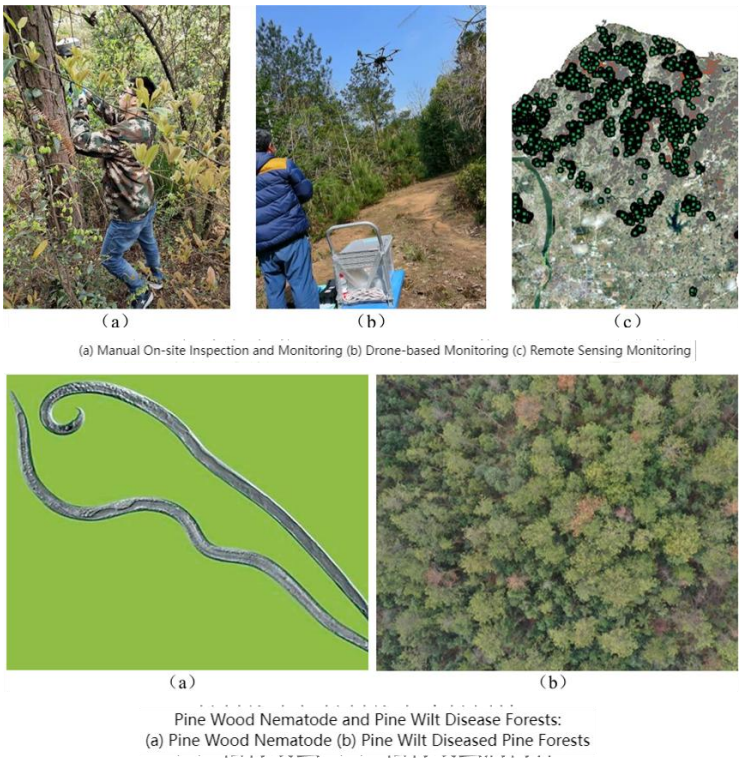


Figure 18 Hyperspectral Imaging Study of Masson Pine Health

6.4 Application in Forest Fire Prevention

Drones equipped with hyperspectral remote sensors provide solid theoretical support for forest fire prevention through their high spectral and spatial resolution imaging capabilities. This technology leverages the differences in reflectance across wavelengths for various materials—such as vegetation, soil, and fuels—allowing for the early detection of fire hazards through precise spectral analysis.

Using vegetation indices, drought indices, and other spectral algorithms, dynamic monitoring of forest areas can be conducted. This enables detection of dry vegetation, pest infestations, and other fire risk indicators, along with assessment of combustibility.

UAVs offer agile, low-altitude flight capabilities, overcoming the spatiotemporal resolution limitations of traditional satellite remote sensing. With its theoretical and technical advantages, hyperspectral remote sensing provides scientific backing for fire warning, emergency response, and resource management—facilitating early detection and precise localization of fire risks and safeguarding forest ecological security.

Copyright © Optosky(Xiamen) Photonics Inc. 2015
1503 Bld. A04, 3rd Software Park, Jimei, Xiamen, 361005, China
Tel: +86-592-6102588

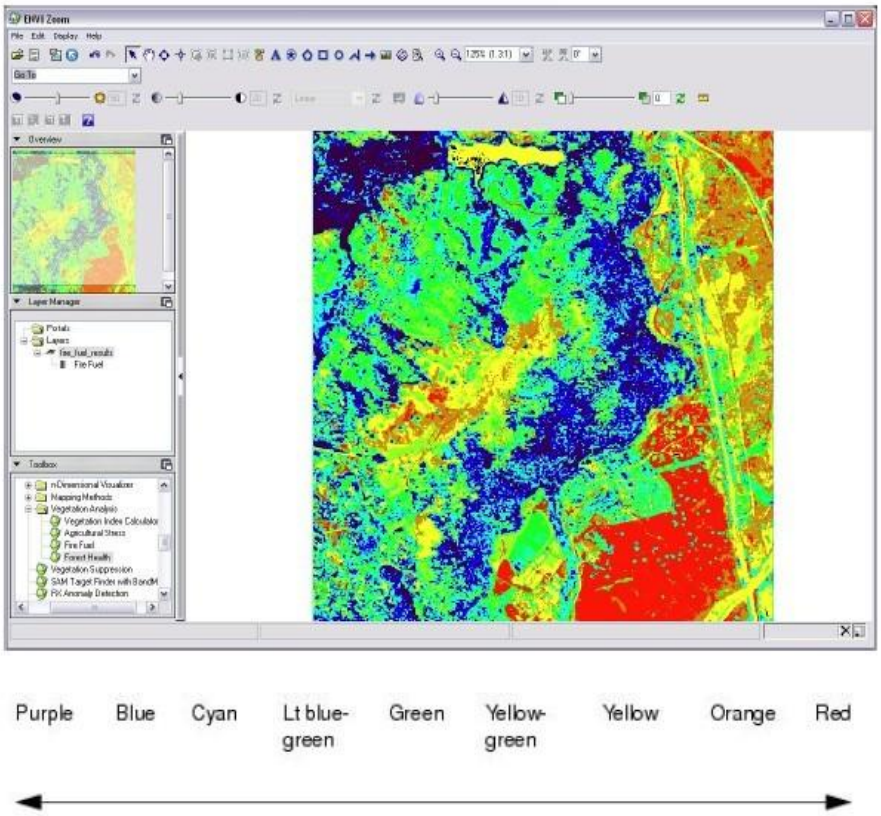


Figure 19 Application of Hyperspectral Imaging in Forest Fire Prevention

Copyright © Optosky(Xiamen) Photonics Inc. 2015
1503 Bld. A04, 3rd Software Park, Jimei, Xiamen, 361005, China
Tel: +86-592-6102588

6.5 Medical Microscope Imaging Spectroscopy

Application Objective: Intraoperative real-time detection and navigation during tumor surgery.

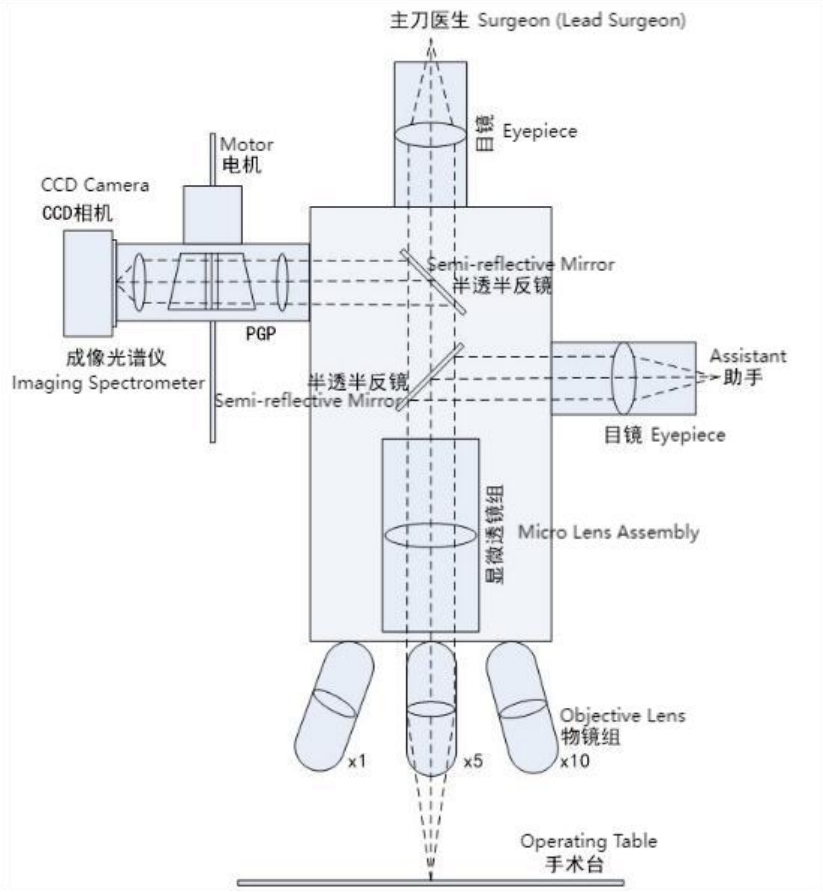


Figure 20 Schematic Diagram of Optical Path in Medical Microscope Imaging Spectrometer

The diagram illustrates the principle of a medical microscope imaging spectrometer. The target on the operating table is split into three paths after passing through the objective lens and the microscope lens group: one for the primary surgeon's visual observation, another for the assistant's visual observation, and the third to the imaging spectrometer. The imaging spectrometer scans the spatial dimensions of the target via a motor, acquiring its hyperspectral imaging data. After data analysis and image processing, the results are displayed on a monitor for the surgeon.

Copyright © Optosky(Xiamen) Photonics Inc. 2015
1503 Bld. A04, 3rd Software Park, Jimei, Xiamen, 361005, China
Tel: +86-592-6102588

Figure 21 Physical Image of Medical Microscope Imaging Spectrometer

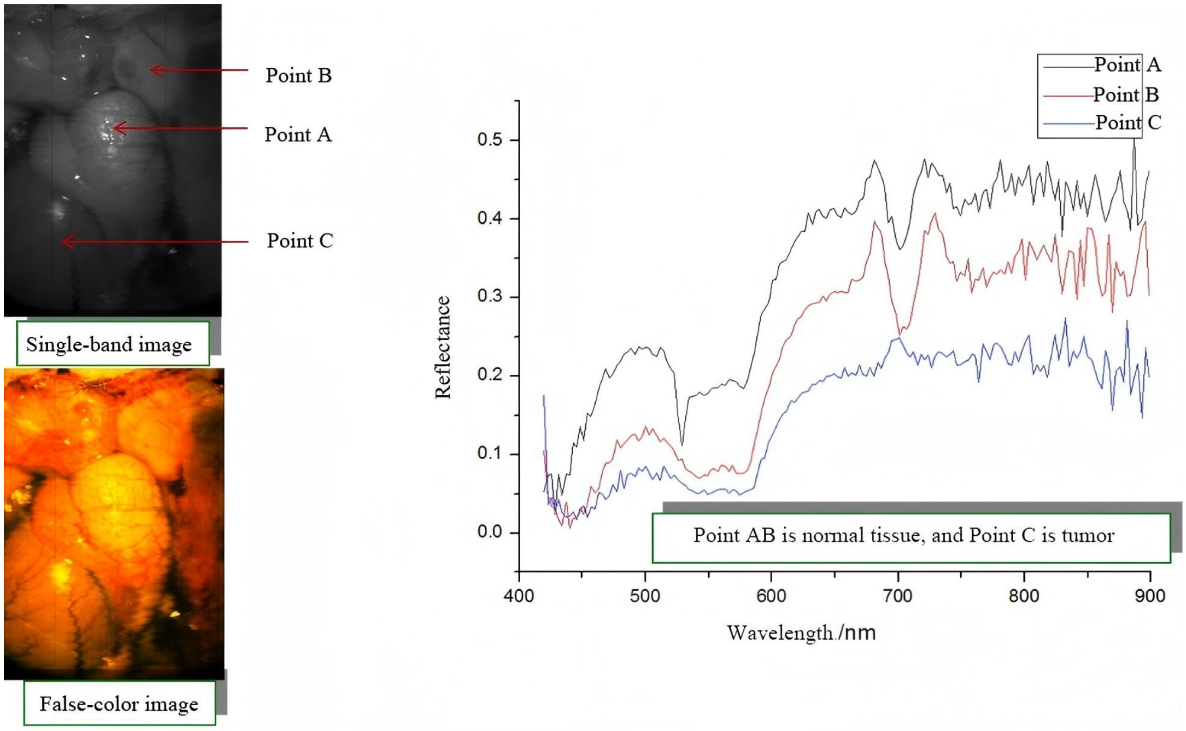


Figure 22 Spectral Data from the Medical Microscope Imaging Spectrometer

Copyright © Optosky(Xiamen) Photonics Inc. 2015
1503 Bld. A04, 3rd Software Park, Jimei, Xiamen, 361005, China
Tel: +86-592-6102588

6.6 Airborne Imaging Spectroscopy Applications

UAV (drone)-based hyperspectral remote sensing technology relies on spectral recognition principles. It captures the reflection and radiation information of surface materials across continuous spectral bands to accurately identify surface composition, structure, and changes.

The theoretical basis includes:

Spectral quantitative analysis—extracting physical and chemical parameters using band-rich hyperspectral data through spectral matching and inversion algorithms.

Integration of high spatial and spectral resolution—capturing fine spatial features while preserving spectral detail.

Sensor radiometric calibration and atmospheric correction—eliminating instrument errors and atmospheric interference to improve data accuracy.

Advanced data processing and pattern recognition—achieving high-accuracy target recognition and quantitative analysis using multidimensional data fusion and intelligent classification techniques.

In addition, the UAV platform offers advantages such as low-altitude operation, flexibility, and high temporal-spatial resolution, making hyperspectral imaging widely applicable in geological exploration, agricultural monitoring, and environmental assessment.

The diagram shows an airborne imaging spectrometer based on the SpecVIEW-VIS system, composed of SpecVIEW-VIS, a stabilized platform, and a POS (position and orientation system) module.

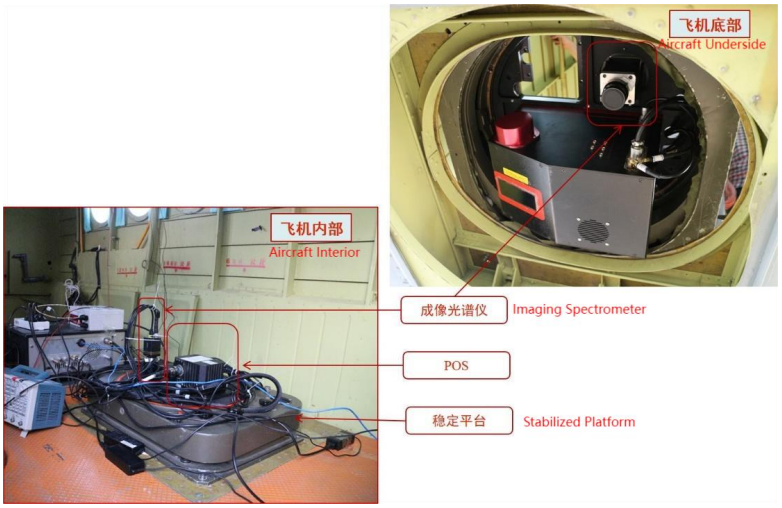


Figure 23 Airborne Remote Sensing Application

Copyright © Optosky(Xiamen) Photonics Inc. 2015
1503 Bld. A04, 3rd Software Park, Jimei, Xiamen, 361005, China
Tel: +86-592-6102588

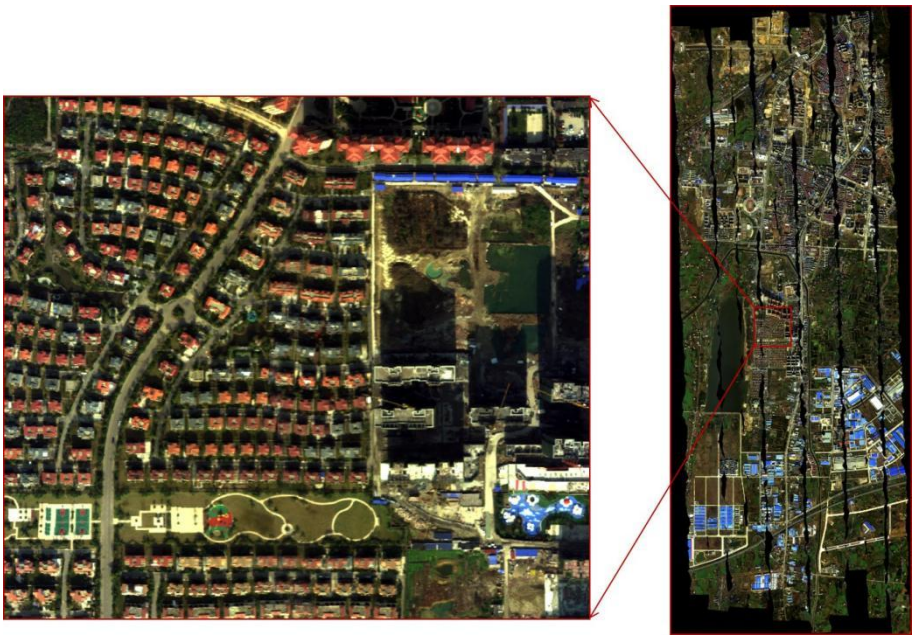


Figure24 Airborne Application Data – Pseudo-color Image

The following image shows data acquired by the instrument during a flight over Jingmen, Hubei, in December 2014. The upper image is a pseudo-color image after geometric correction, flight strip stitching, and radiometric correction. The lower part shows spectral curves of typical ground objects.

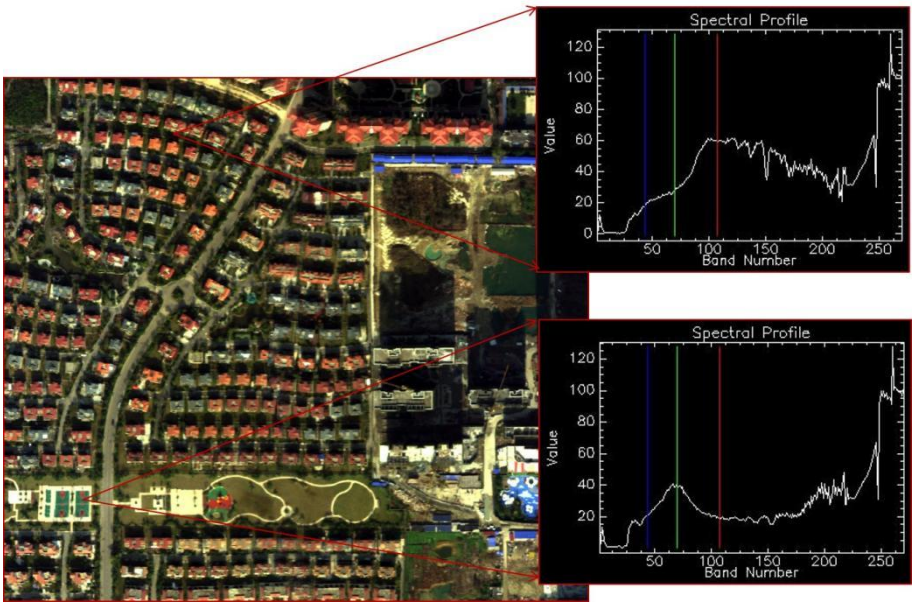


Figure 25 Airborne Application Data – Spectral Curves

Copyright © Optosky(Xiamen) Photonics Inc. 2015
1503 Bld. A04, 3rd Software Park, Jimei, Xiamen, 361005, China
Tel: +86-592-6102588

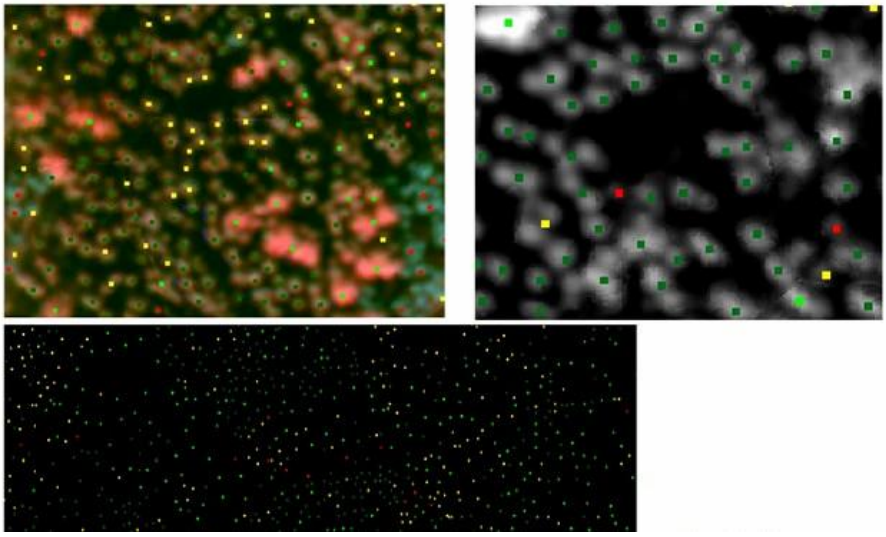


Figure26 Forest Remote Sensing – Airborne Hyperspectral Observation of Forest Pests and Diseases

6.7 Water Quality Monitoring

UAV hyperspectral remote sensing technology relies on radiative transfer theory and spectral feature analysis. It captures water reflectance across multiple narrow bands to conduct qualitative and quantitative analysis of water quality components. Elements including nitrogen, phosphorus, potassium and related water quality indicators affect the distribution of suspended solids, organic matter and algae in water, and these substances exhibit distinctive absorption or scattering features within specific spectral bands. Mathematical correlations between water quality parameters and spectral responses can be established via laboratory calibration and model inversion to estimate the concentrations of various elements in water. Moreover, UAV platforms feature strong mobility, short flight duration and high spatial resolution, enabling fast and efficient hyperspectral data acquisition. Combined with data processing techniques such as atmospheric correction and water background removal, this approach improves monitoring accuracy and provides scientific support for water environment management and pollution early warning. With continuous advancements in sensor technology and data algorithms, UAV hyperspectral remote sensing boasts promising prospects in water quality monitoring and plays a vital role in water resource protection and ecological remediation.

Copyright © Optosky(Xiamen) Photonics Inc. 2015
1503 Bld. A04, 3rd Software Park, Jimei, Xiamen, 361005, China
Tel: +86-592-6102588

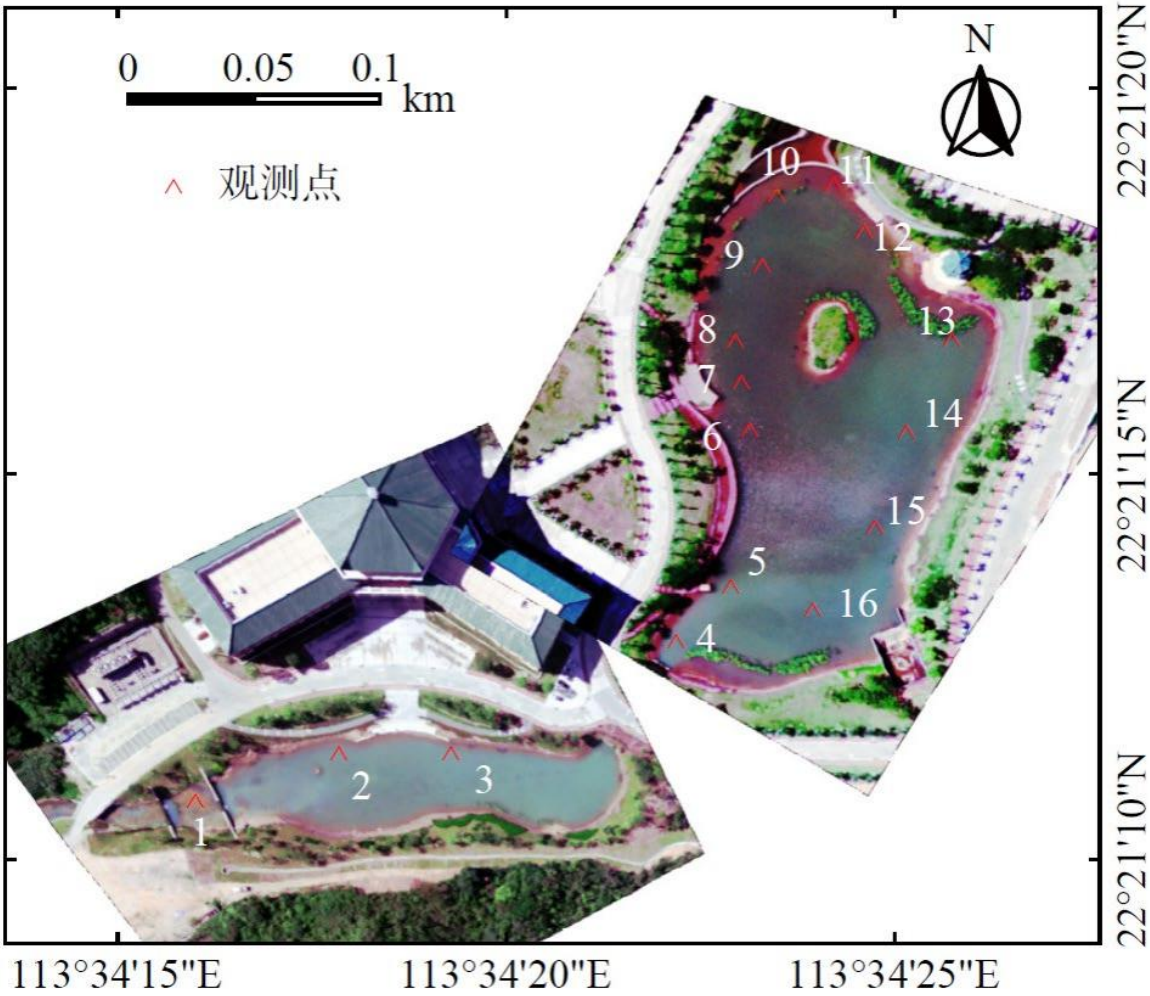


Figure 27 Water body detection (lake plankton, algae, and vegetation studies)

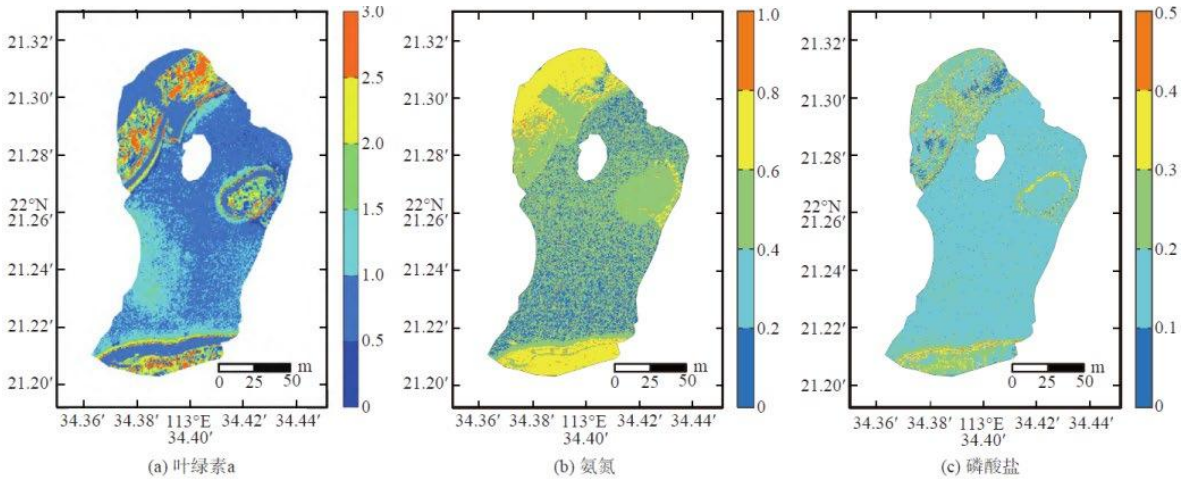


Figure 28: Water Quality Monitoring Inversion Results

Copyright © Optosky(Xiamen) Photonics Inc. 2015
1503 Bld. A04, 3rd Software Park, Jimei, Xiamen, 361005, China
Tel: +86-592-6102588

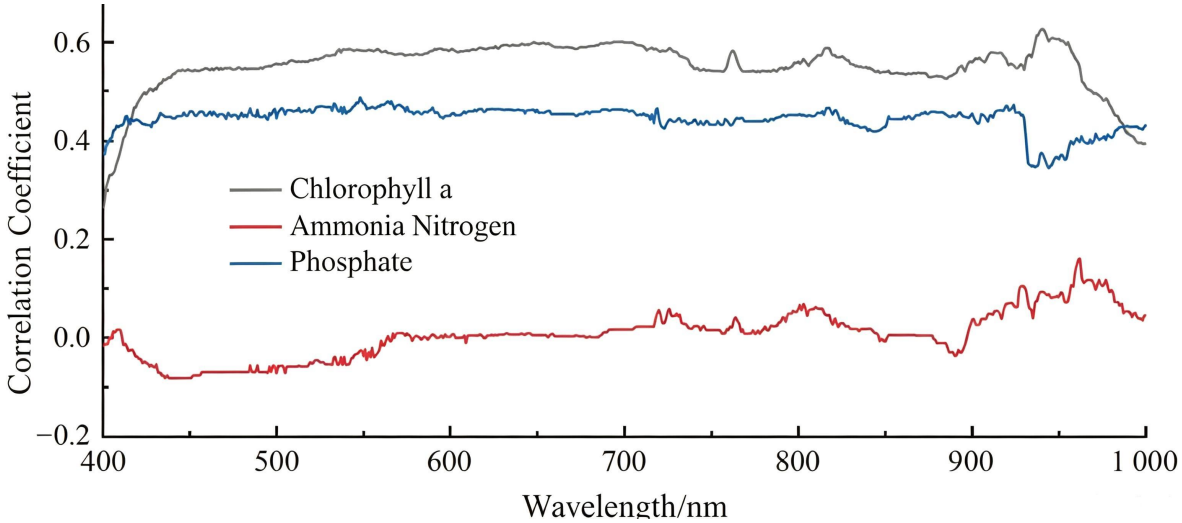


Figure 29: Correlation coefficient of suspended solids

6.8 Plastic Sorting

In plastic sorting, instruments equipped with hyperspectral sensors leverage the precise acquisition and analysis of material spectral characteristics based on hyperspectral remote sensing technology.

Due to differences in chemical composition and molecular structure, plastics exhibit distinct reflectance and absorption spectra—forming unique "spectral fingerprints"—across electromagnetic wavebands. As the conveyor moves, the sensor collects continuous hyperspectral data in NIR and SWIR bands from various plastics in the target area. Using radiative transfer theory and atmospheric correction, environmental interferences are reduced, revealing the true spectral information.

Spectral feature extraction, principal component analysis, and machine learning classification algorithms are then employed to match and classify different plastics (e.g., polyethylene, polypropylene, polystyrene), enabling precise sorting.

This method is real-time, highly accurate, and supports wide operational coverage, providing a scientific and technical basis for recycling waste plastics, environmental monitoring, and resource reuse.

Copyright © Optosky(Xiamen) Photonics Inc. 2015
1503 Bld. A04, 3rd Software Park, Jimei, Xiamen, 361005, China
Tel: +86-592-6102588

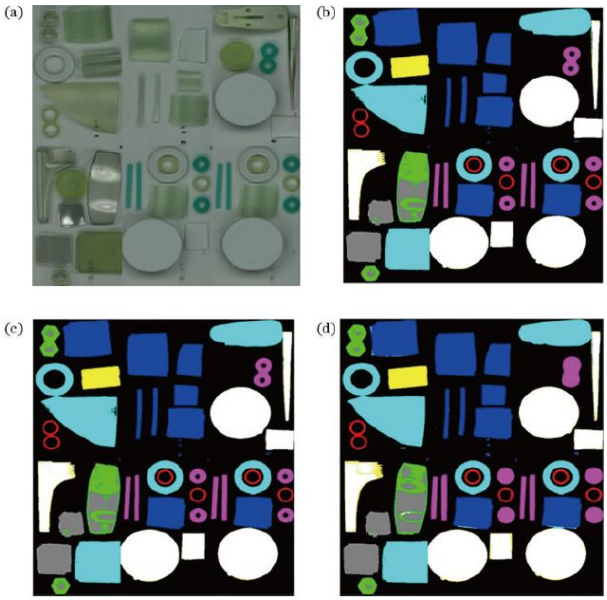


Figure 30 Classification Performance Comparison of K-NN Based on Euclidean, Cosine, and SAM Distances

6.9 Food Classification – Eggs

A hyperspectral imaging system integrates imaging and spectroscopy to simultaneously acquire spatial and spectral information. In the classification of eggs, different varieties or quality levels—due to differences in growth environment, rearing conditions, and freshness—exhibit subtle but measurable spectral differences in shell color, texture, and internal chemical composition.

By precisely collecting reflectance and absorption spectra from the egg's surface and interior, the hyperspectral imager provides continuous spectral band data reflecting physical and chemical characteristics.

Through statistical analysis and pattern recognition of large sample datasets, an egg spectral database can be built. Multivariate statistical analysis and machine learning algorithms then allow for automatic identification and accurate classification.

This approach enables non-destructive, rapid online detection, improving sorting accuracy and efficiency while reducing human error. As such, hyperspectral imaging plays a key role in egg quality control and advances intelligent, modern food safety inspection.

Copyright © Optosky(Xiamen) Photonics Inc. 2015
1503 Bld. A04, 3rd Software Park, Jimei, Xiamen, 361005, China
Tel: +86-592-6102588

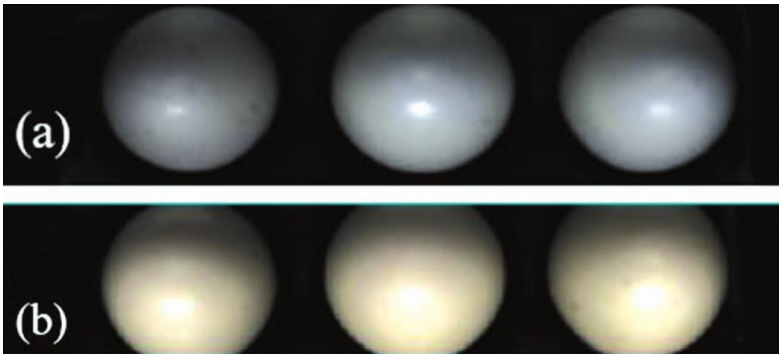


Figure 31 Spectral Image Black-and-White Calibration

(a) Original Spectral Image; (b) Image after Black-and-White Calibration

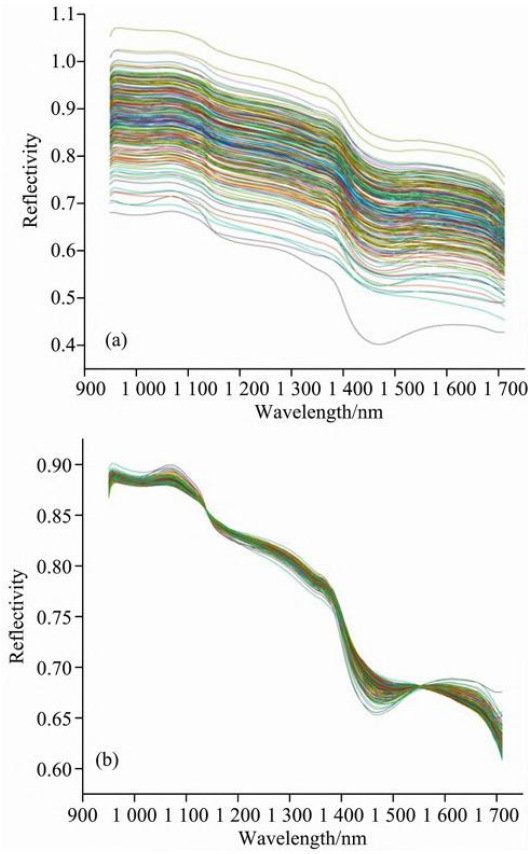


Figure 32 Preprocessed Average Reflectance Curve

(a) SG (Savitzky–Golay) Preprocessing; (b) MSC (Multiplicative Scatter Correction) Preprocessing

Copyright © Optosky(Xiamen) Photonics Inc. 2015
1503 Bld. A04, 3rd Software Park, Jimei, Xiamen, 361005, China
Tel: +86-592-6102588

6.10 Environmental Monitoring and Evidence Collection

Illegal dumping of solid waste frequently occurs in idle plots and "three-edge" zones—mountainsides, forest edges, and riverbanks—at provincial borders. This poses threats to water and soil quality and public health.

Drones conducting high-altitude grid inspections, equipped with zoom visible-light cameras, can provide comprehensive views of farmlands, forests, and wastelands. Infrared cameras focus on rivers and forested or concealed areas, helping regulatory agencies quickly locate illegal dumping sites and capture high-resolution evidence.

By analyzing aerial images through a software platform, suspected illegal waste disposal sites in key areas—like Pukou District—can be dynamically identified, supporting field enforcement and decision-making with foundational data.

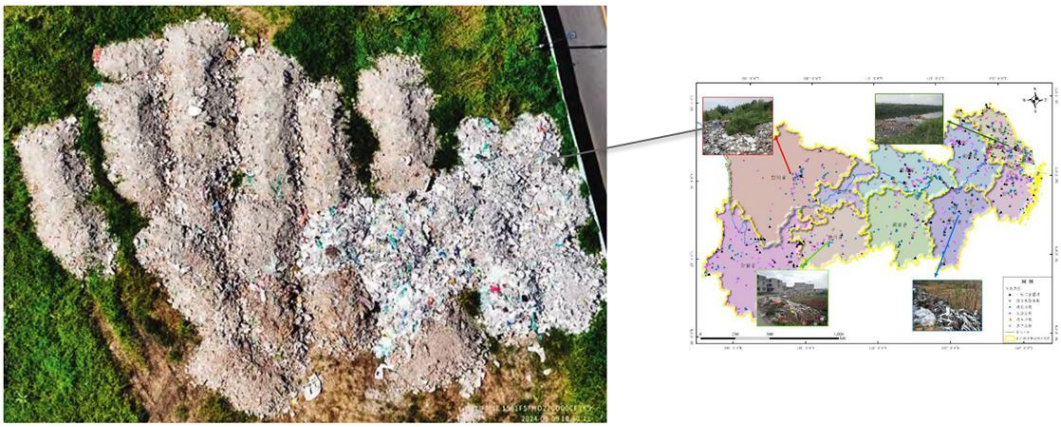


Figure 33 Drone-Captured Evidence of Illegal Solid Waste Dumping

Copyright © Optosky(Xiamen) Photonics Inc. 2015
1503 Bld. A04, 3rd Software Park, Jimei, Xiamen, 361005, China
Tel: +86-592-6102588

7. Optosky Hyperspectral Cameras

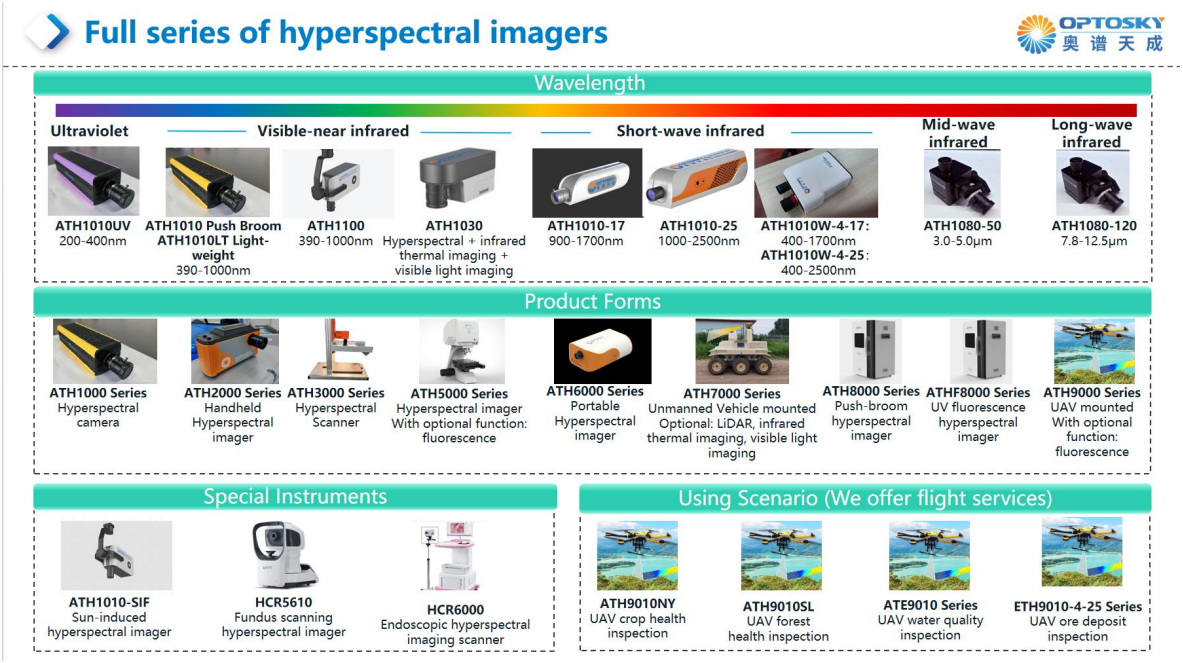


Figure 34: The hyperspectral product series produced by Optosky

8. OptoSky—Company Profile

OptoSky was founded in 2015 with group headquarters in Xiamen, a picturesque coastal city. It is a national-level key "Little Giant" enterprise featuring specialization, refinement, differentiation and innovation, dedicated to the R&D, production and sales of high-end spectral analysis instruments. The enterprise was initiated by Dr. Liu Hongfei, an international specialist in spectral instruments, who is an academician of the Russian Academy of Natural Sciences, leading talent of the National Ten-Thousand Talents Program, beneficiary of the Ministry of Science and Technology Innovation Talent Promotion Program, Class A talent under Xiamen Double Hundred Talent Program, PhD holder from Shanghai Institute of Technical Physics, Chinese Academy of Sciences and postdoctoral fellow of Xiamen University. The company devotes itself to developing globally advanced spectral analysis instruments and aims to be a top-tier international supplier of spectral instruments, evolving into a domestic pacesetter in the spectral instrument sector.

Copyright © Optosky(Xiamen) Photonics Inc. 2015
1503 Bld. A04, 3rd Software Park, Jimei, Xiamen, 361005, China
Tel: +86-592-6102588

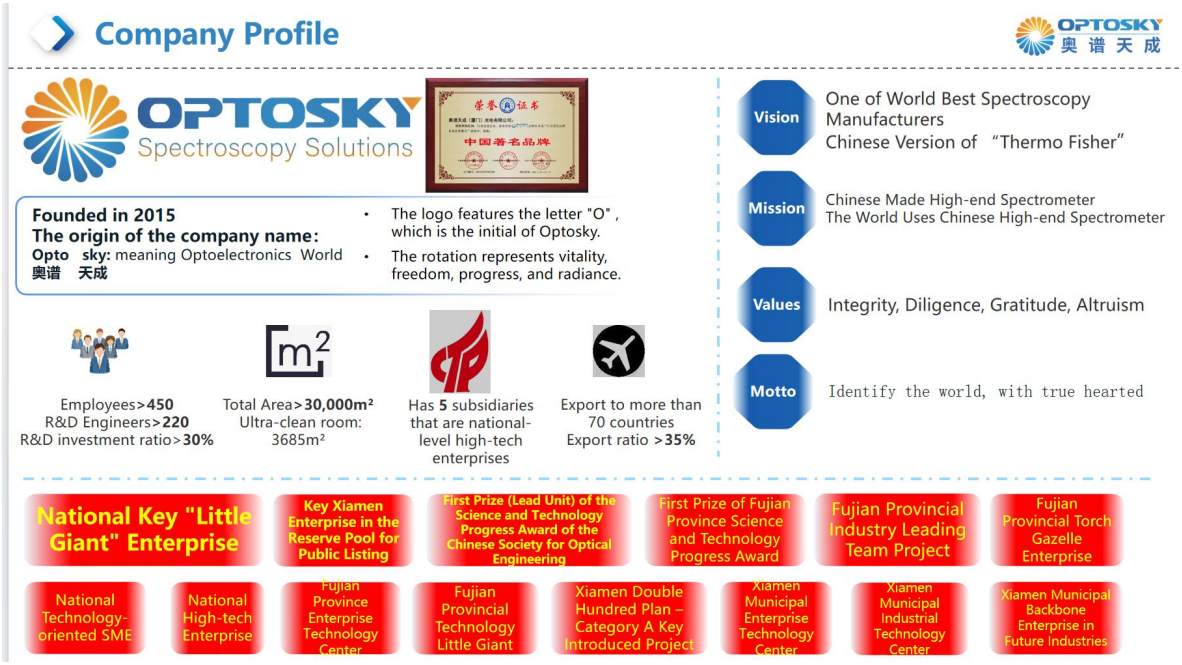


Figure 35 Group Profile

Figure 36 Dr. Liu Hongfei, co-founder of Optosky

OptoSky Group owns five national high-tech enterprises. It has established multiple R&D and manufacturing bases across China in Xiamen, Changsha, Wuhan, Chengdu, Xuzhou, Wuhu and other cities. The total global office space exceeds 30,000 square meters, and the company employs more than 450 staff members, including over 220 seasoned R&D engineers. The company has filed and obtained

Copyright © Optosky(Xiamen) Photonics Inc. 2015
1503 Bld. A04, 3rd Software Park, Jimei, Xiamen, 361005, China
Tel: +86-592-6102588

more than 500 intellectual property rights, among which over 100 are invention patents including two US invention patents. Currently, it undertakes more than 20 national, provincial and municipal research projects such as a major industrialization special project sponsored by the State Oceanic Administration with total funding of 30 million RMB. Meanwhile, OptoSky presides over and participates in formulating over 20 national, industrial and association standards. Standards led by the company: Near-infrared Terrestrial Object Spectrometer, Rapid Water Quality Detector Using Spectroscopy, Technical Specification for Multispectral Imaging in Smart Agriculture, Handheld Fruit Quality Detector, Technical Requirements for Medical Near-infrared Spectrometer, Portable Rapid Water Quality Detector Using Spectroscopy, etc. Standards participated in formulation: Technical Specification for Raman Spectrometer, Hazardous Chemical Detector Based on Raman Spectroscopy, Online Rapid Water Quality Detection System Using Spectroscopy, Technical Specification for Ecological Environment Monitoring System Based on Mobile or Fixed Buoys, Determination of Benzophenone Ultraviolet Absorbers in Textiles, Determination of Antifungal Performance of Textiles Part 1: Fluorescence Method, Plant Phenotype Chlorophyll Fluorescence Imaging Analysis Equipment, Technical Requirements for Plant Monitoring Using UAV Hyperspectral Remote Sensing, etc. OptoSky keeps guiding the formulation of spectral technical standards and industrial upgrading.

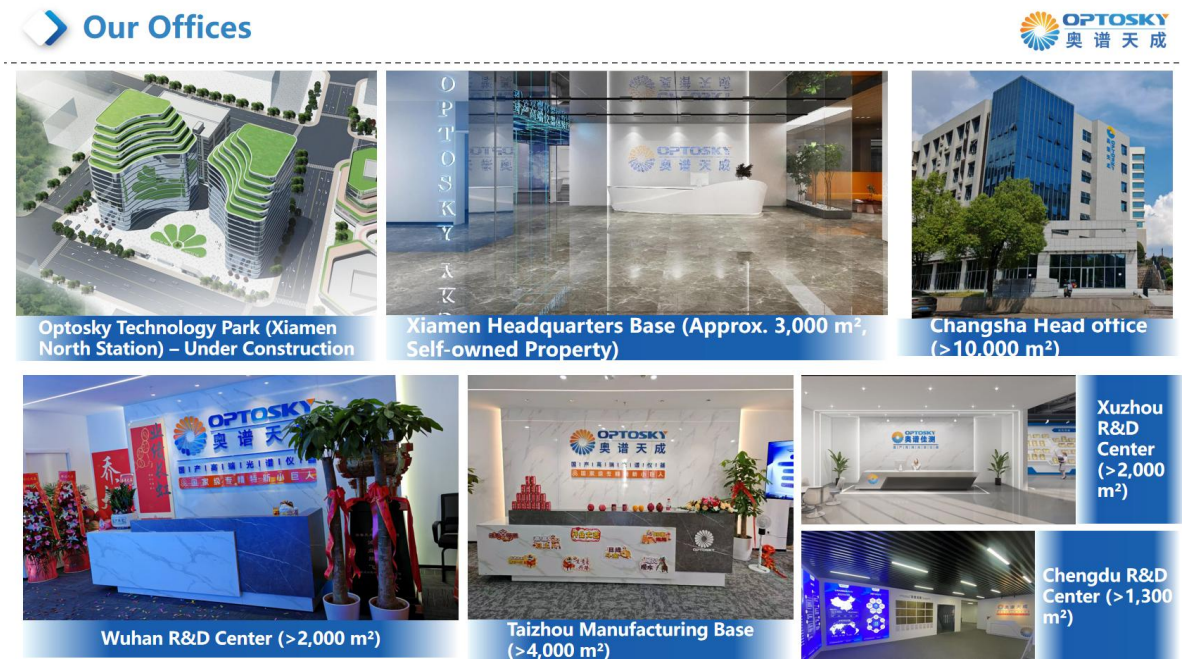


Figure 37 Optosky National R&D Center/Smart Manufacturing Base

Copyright © Optosky(Xiamen) Photonics Inc. 2015
1503 Bld. A04, 3rd Software Park, Jimei, Xiamen, 361005, China
Tel: +86-592-6102588

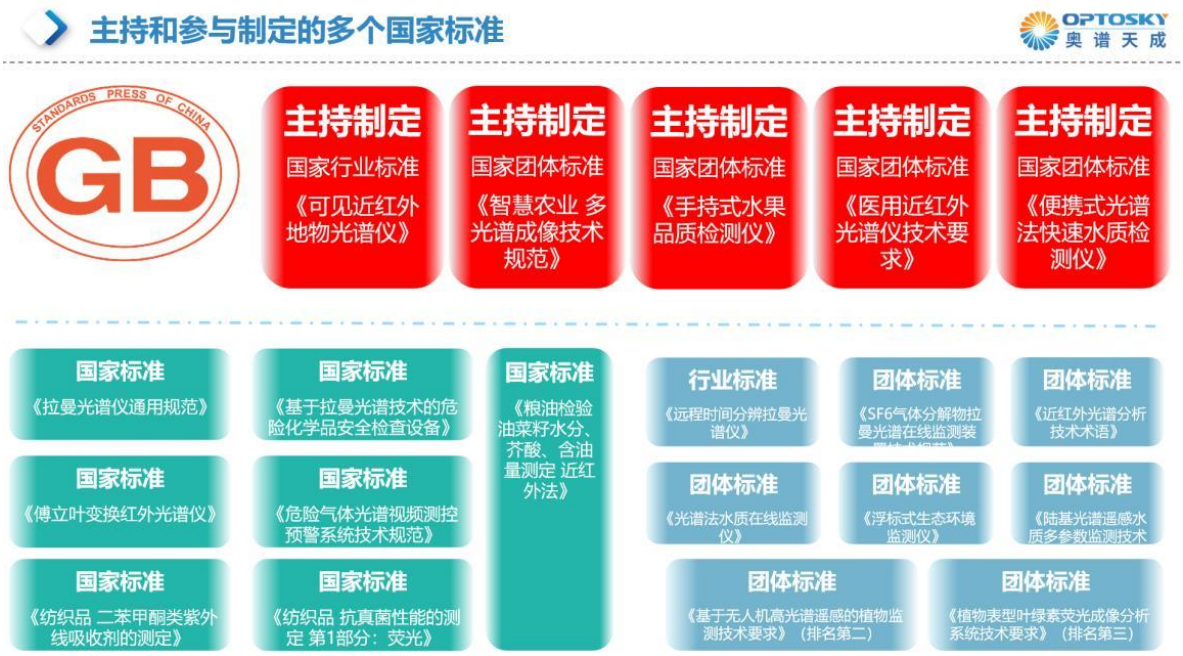


Figure 38: Leading and participating in multiple national standards

Relying on its exclusive technologies including opto-mechatronics integration, spectral analysis, weak photoelectric signal processing and cloud computing, OptoSky has built a full-spectrum product portfolio with Raman spectrometers as flagship products, covering fiber spectrometers, hyperspectral imagers, field spectroradiometers, infrared spectrometers, fluorescence spectrometers, spectrophotometers and LIBS instruments. These products are widely adopted in scientific research, semiconductor, new energy, biomedicine, chemical pharmacy, public security, smart agriculture, military industry and other fields, ranking among the world's top tier in both product performance and brand influence. Its products are sold to more than 70 countries and regions worldwide. OptoSky is the top Chinese optical instrument brand in Russia, among the top three high-end optical instrument brands in the Middle East, and one of the fastest-growing Chinese brands in Europe and America. The company has realized domestic substitution and export breakthroughs for high-end spectral instruments.

Copyright © Optosky(Xiamen) Photonics Inc. 2015
1503 Bld. A04, 3rd Software Park, Jimei, Xiamen, 361005, China
Tel: +86-592-6102588

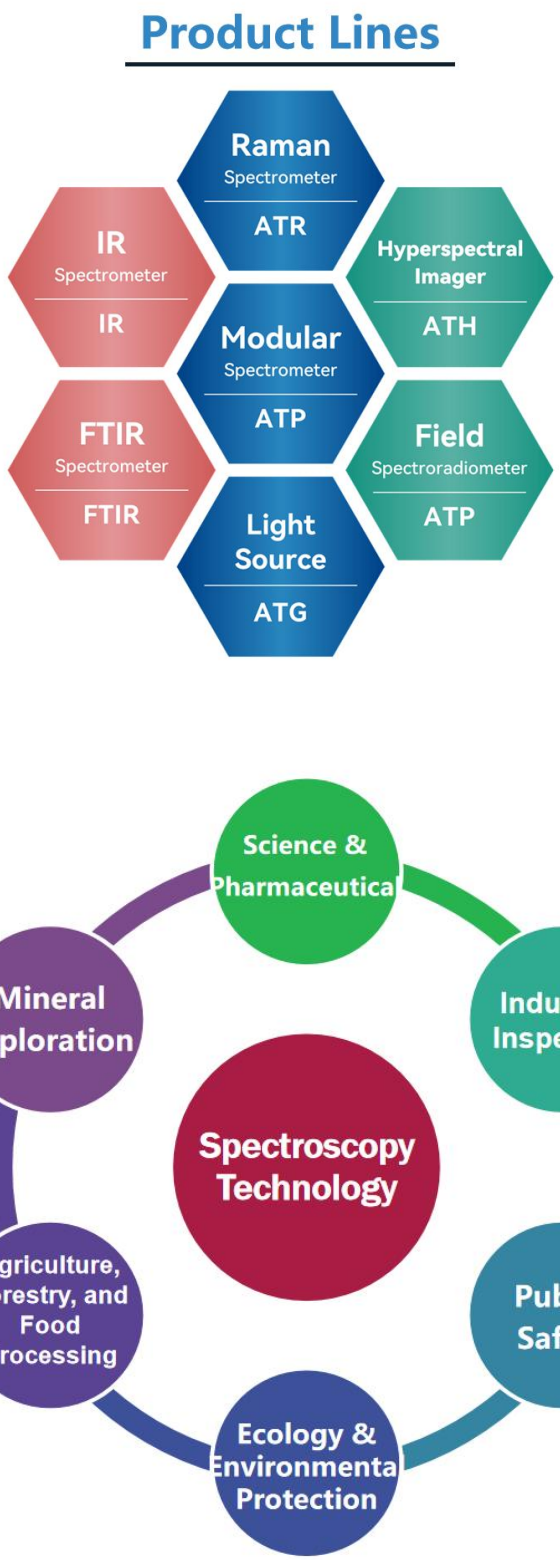


Figure 39: Main Product Series and Application Areas

Copyright © Optosky(Xiamen) Photonics Inc. 2015
1503 Bld. A04, 3rd Software Park, Jimei, Xiamen, 361005, China
Tel: +86-592-6102588

OptoSky bases its development on technology, follows market demands and prioritizes customers, delivering outstanding solutions and high-quality products and services for numerous industries. Widely recognized by governments at all levels and the industry, the company has acquired more than 300 innovation patents, software copyrights, qualification certifications and domestic and international honors in total.

The enterprise holds multiple accreditations and honors including National Key Specialized, Sophisticated, Unique and Innovative Little Giant Enterprise, Key Pre-listing Enterprise of Xiamen, Leading Industrial Talent Team of Fujian Province, Xiamen Industrial Technology Center, Fujian Gazelle Enterprise, Class A key introduction project of Xiamen Double Hundred Talent Program and National High-tech Enterprise. It has also been awarded Xiamen Specialized, Sophisticated, Unique and Innovative Enterprise, Xiamen High-tech, High-growth and High-value Key Enterprise and Xiamen High-tech Enterprise.

Partial Honors Obtained by OptoSky:

- August 2025: Won the first prize in the final of the New Generation Information Technology Industry Group, Sichuan Division, the 14th China Innovation and Entrepreneurship Competition 2025
- July 2025: Approved as a Postdoctoral Innovation and Entrepreneurship Practice Base
- July 2025: Listed as a national-level key Specialized, Sophisticated, Unique and Innovative Little Giant enterprise
- March 2025: Approved for the Changsha Expert Workstation
- September 2024: Selected as a national-level Specialized, Sophisticated, Unique and Innovative Little Giant enterprise
- June 2023: Named a key pre-listing enterprise of Xiamen
- May 2023: Included in the Leading Industrial Talent Team Program of Fujian Province
- 2023: Accredited as Xiamen Industrial Technology Center
- 2022: Dr. Liu Hongfei elected an academician of the Russian Academy of Natural Sciences

Copyright © Optosky(Xiamen) Photonics Inc. 2015
1503 Bld. A04, 3rd Software Park, Jimei, Xiamen, 361005, China
Tel: +86-592-6102588

- 2022: Recognized as a Fujian Torch Gazelle Enterprise
- 2022: Certified as a Fujian technology-based small and medium-sized enterprise
- December 2021: Its Raman spectrometer won the Second Prize of Fujian Provincial Science and Technology Progress Award
- 2021: Dr. Liu Hongfei selected for the National Ten-Thousand Talents Program organized by the Central Organization Department 2021: OptoSky awarded Fujian Provincial Science and Technology Little Giant Enterprise
- 2020: Dr. Liu Hongfei included in the Innovation Talent Promotion Program of the Ministry of Science and Technology
- 2020: Led the formulation of the national industrial standard Visible and Near-Infrared Field Spectroradiometer
- 2020: Dr. Liu Hongfei certified as Class B high-level talent of Fujian Province 2019: Certified as a national high-tech enterprise
- 2019: Honored the Independent Innovation Gold Medal issued by China Instrument and Control Society
- 2019: Recognized as a Specialized, Sophisticated, Unique and Innovative micro and small enterprise in Xiamen
- 2018: Won Excellent Enterprise Award in the National Final of the 7th China Innovation and Entrepreneurship Competition
- 2018: Received the second prize in Xiamen Division, the 4th China Innovation and Entrepreneurship Competition
- 2018: Won Silver Award in Fujian Division and Bronze Award in National Final of the 5th World New Materials Innovation and Entrepreneurship Competition
- 2016: Included in Class A key high-level talent introduction project (highest tier), the 8th Xiamen Double Hundred Talent Program
- Listed on Strait Equity Exchange Market, Stock Code: 865147
- Certified compliant with ISO9001:2015 Quality Management System

Copyright © Optosky(Xiamen) Photonics Inc. 2015
1503 Bld. A04, 3rd Software Park, Jimei, Xiamen, 361005, China
Tel: +86-592-6102588

- Participated in formulating national standards Raman Spectrometer and Hazardous Chemical Detector Based on Raman Spectroscopy Technology
- Undertaken the major marine economic collaborative innovation project Research, Development and Industrialization of Marine Three-Dimensional Monitoring Sensors and Systems sponsored by State Oceanic Administration with total funding of RMB 30 million
- Established strategic partnership with School of Electronic Science and Engineering, Xiamen University since 2017
- Served as undergraduate internship base and joint postgraduate training institution of Xiamen University of Technology since 2016
- Served as undergraduate internship base and joint postgraduate training institution of Jimei University since 2017
- Member unit of Fujian Young Entrepreneurs Association; director unit of Xiamen Young Entrepreneurs Association
- Implementation entity for industry-university-research cooperation projects of Xiamen
- Member unit of Xiamen Emergency Association

9. Contact Us

Company Name: Optosky (Xiamen) Optoelectronics Co., Ltd.

Address: 5th Floor, Building F02, Phase III of Xiamen Software Park, Jimei District, Xiamen

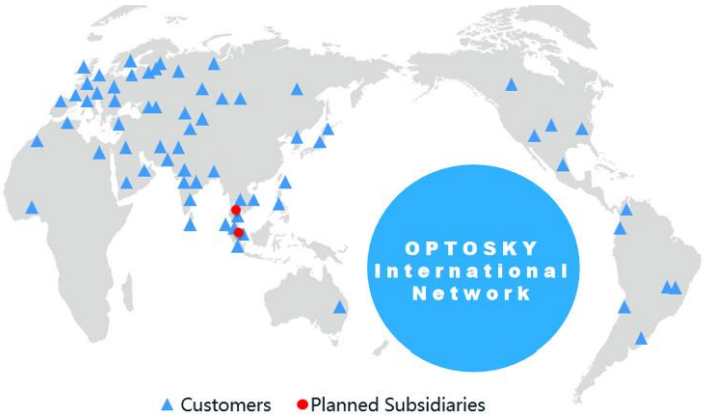
Phone Phone: 4008-508-9**28, 0592**-6102588

Web site: www.optosky.com

mail:sales@optosky.com

Copyright © Optosky(Xiamen) Photonics Inc. 2015
1503 Bld. A04, 3rd Software Park, Jimei, Xiamen, 361005, China
Tel: +86-592-6102588

China market and Global Distributors



Exported to >70 countries

>260 Distributors

36% share

==========The Essence of Exploration • Dedication to Authenticity=========

========== End of Article ==========

Copyright © Optosky(Xiamen) Photonics Inc. 2015
1503 Bld. A04, 3rd Software Park, Jimei, Xiamen, 361005, China
Tel: +86-592-6102588