



## NanoBio 210 UV-Vis Spectrophotometer



### Features:

- Nucleic acids, Proteins, Full band absorbance ;
- Sample volume per time: 0.5-2  $\mu$ l;
- Fast Measure: <3s;
- Broad Spectral Range:190-850nm;
- Long life span source up to 10 years;
- Embedded high performance micro spectrometer;
- High stability constant light source;
- 7 inch HD capacitive touch screen;
- Full touch screen operation;
- Advanced algorithm;
- Self-built modeling function by user;
- USB ,Bluetooth and WIFI data out put;

### Application:

- Scientific Research Lab;
- Hospital;
- Bio Lab;
- Chemical Lab;
- Environment Measure;

### Description:

NanoBio210 is a full wavelength (190-850nm) UV-Vis spectrophotometer, which is self-designed by Optosky. It bases on 20-year experience in developing spectrometer plus Hamamatscu pulsed xenon lamp, it's a successful spectrophotometer can fast measure nucleic acids,protein and cell solution. Meanwhile, its easy-to-use, sample volume requires only 0.5 ~ 2  $\mu$ l, it's not required preheating and it can fast clear out residue sample, no cuvette or other sample positioning fixture, no dilution etc.

NanoBio210 spectrophotometer,easy-to-use,pipette directly onto the sample measure detect head, close it to start measure. It can directly wipe out residue sample or recycle after completing measure.

NanoBio 210 Nucleic Acid analyzer is mainly used to measure nucleic acids, protein. It uses high energy pulsed xenon lightsource give spectral measure of 230nm,260nm, 280nm.

NanoBio 210 is based on Android operating system and has a 7-inch capacitive touch screen, which can be tested on a single machine without computer connection. And its own lithium battery, the battery life can be more than 6 hours, very easy to move. The detection data can be printed or output via USB to facilitate user analysis and storage.

Model	Description
NanoBio 210	General purpose, pulsed xenon light source, full spectrum
NanoBio 210L	High precision, long life LED light source, OD600 cuvette



## 1. Performance Parameter

Parameters	NanoBio 210	NanoBio 210L
Sample Size	0.5~ 2.0 $\mu$ L	
Measurement Cycle	< 5s	
Optic Path Length	1.0 mm ( 0.5,0.25 and 0.05mm is optional )	
Wavelength Range	190 ~850 nm	260nm、 280nm
Light Source	Xenon flash lamp	Long life narrow line width LED light source
Detector Type	2048 pixel linear CCD array	Ultraviolet silicon photocell
Wavelength Accuracy	1 nm	1 nm
Wavelength Resolution	$\leq 2$ nm (FWHM at Hg 546 nm)	NA
Absorbance Precision	0.003 Abs(1mm)	
Absorbance Accuracy	1% (0.76 at 257 nm)	
Detection Limit	2 ng/ $\mu$ L (dsDNA) , Optic Path Length=2mm	2 ng/ $\mu$ L (dsDNA) , Optic Path Length=2mm
Max Concentration	15,000 ng/ $\mu$ L (dsDNA), Optic Path Length=0.5 mm	15,000 ng/ $\mu$ L (dsDNA), Optic Path Length=0.5 mm
Absorbance Range	0.04 ~ 300 (10mm)	0.2 - 50A
DNA range	2 ~ 4500ng/ul (dsDNA) 2 ~ 15000ng/ $\mu$ L (Optional)	10-2500ng/ $\mu$ L
Surface Construction	304 stainless steel and quartz fiber	
Operation System	Android OS	
Panel Type	Multi-touch capacitive touch screen	
Panel Size	7 inches	
Panel Resolution	800 $\times$ 1080	
Endurance Time	6 hrs	
Li-ion Battery	60 Wh	
Operating Voltage	12V DC	
Power Consumption	9 W	7.5 W
Standby Power	1.5 W	1.5 W
Data interface	USB、Bluetooth、 WIFI	
Dimensions	286 $\times$ 196 $\times$ 177 mm	
Weight	3.2 Kg	2.8 Kg

## 2.NanoBio210 Working Principle

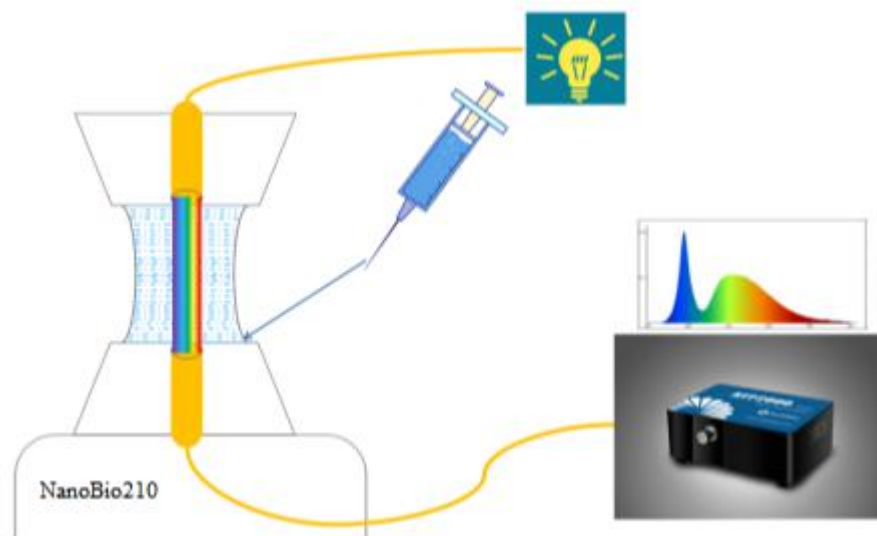


Fig 1 NanoBio210 Working Principle

The working principle of spectrophotometer is mainly based on Lambert-Beer law. First of all, with our pipetting gun will draw 0.5 2  $\mu$ l our samples under our base, form small liquid beads, then we base on the down withhold formation fluid column, click on the test, at the moment we wide wavelength of the light which the photosource sends out aftertransmits the  $I_0$  through the liquid column, the intensity of light through the sample  $I$  will be recorded, each material has its own specific absorption wavelength, And the absorption of a specific wavelength is proportional to the concentration of the substance, namely lambert-Beer law.

$$A = \epsilon L c$$

In the formula:

$A$  ——Absorbance;  $A = -\log I/I_0$

$\epsilon$  ——Absorption Coefficient;

$L$  ——Optical path Length (optical path);

$c$  ——Concentration;

The wavelength of selective absorption of light by a substance and the corresponding absorption coefficient are the physical constants of the substance. When the absorption coefficient of a pure substance is known under certain conditions, the same conditions can be used to match the tested substance into a solution and determine its absorbance, and the content of the substance in the tested substance can be calculated from the above formula.

## 3. NanoBio210 Dimensions

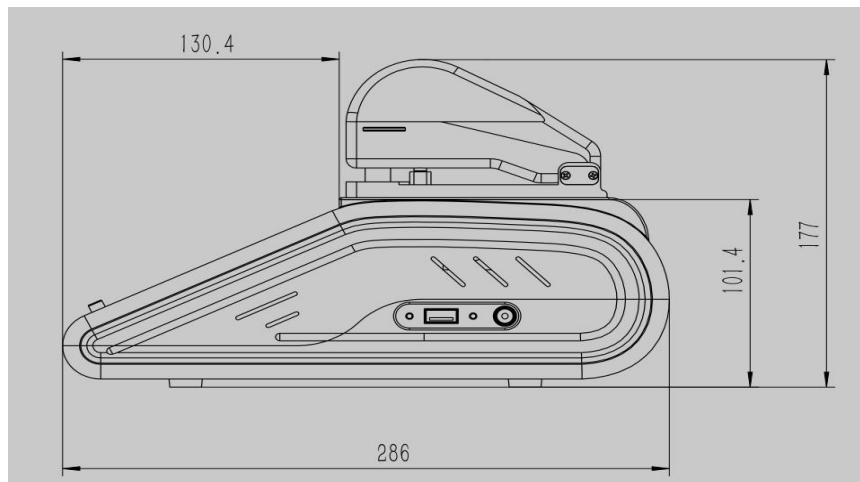


Fig 2 NanoBio210 Dimensions

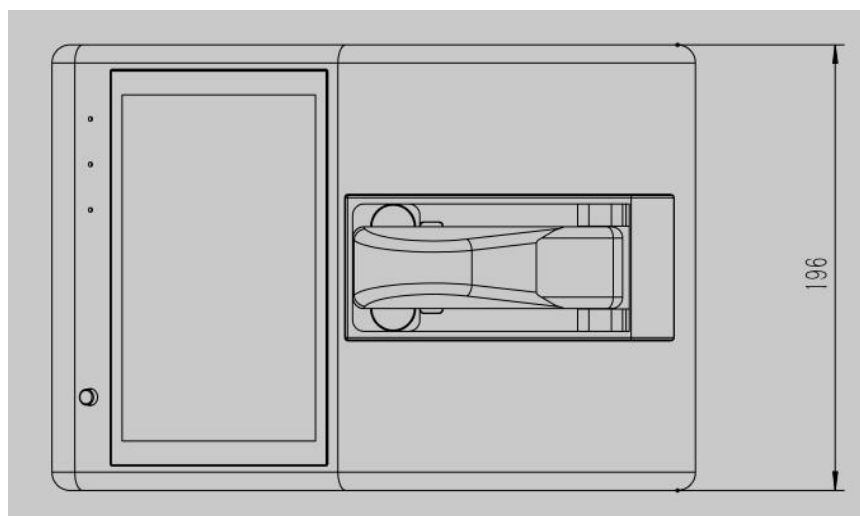


Fig 3 NanoBio210 Dimensions

## 4. Application Fields

NanoBio 210 ultra-micro spectrophotometer, effective wavelength range is 190~850nm, can be in the ultraviolet, visible, near infrared spectral region for qualitative and quantitative analysis of samples; NanoBio 210 instrument has the advantages of simple structure and fast detection, which is suitable for the analysis of nucleic acid, protein and other trace samples. It has special advantages in scientific research laboratories, hospitals, biological laboratories, chemical laboratories, environmental testing and other fields.

## 5. Company Profile

Optosky company is a first-class spectroscopy solution provider, with the headquarter located in the 7<sup>th</sup> 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 9<sup>th</sup> BRICK summit in 2017. The subsidiary company located in Wuhu city with an area of 2035 square meters.

The company founder Dr. Hongfei Liu graduated Doctor 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 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 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



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.



Fig 4 Optosky (Xiamen) Photonics Inc. Company Headquarter

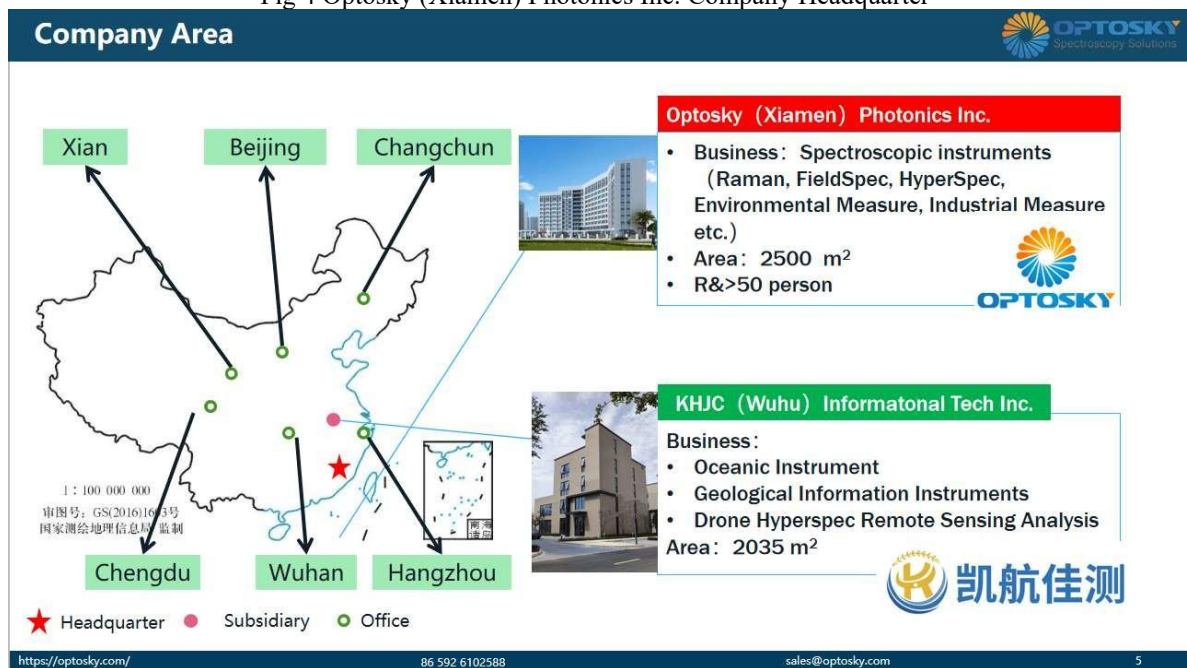


Fig 5 Optosky Company Area

## Oversea Market Shares

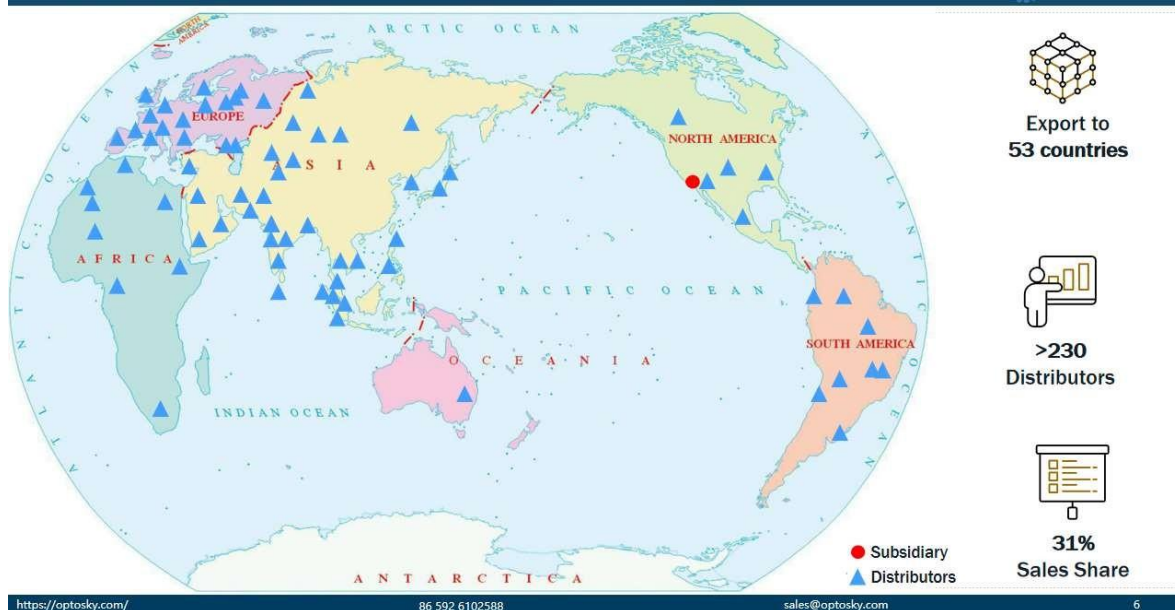


Fig 6 Oversea Market Shares

## Optosky Chair and Draft National Standards Lists:



Fig 7 Optosky Chair and Draft National Standards Lists.



## 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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Fig 8Qualification

## Informationization & Industrilization Fusion Management System

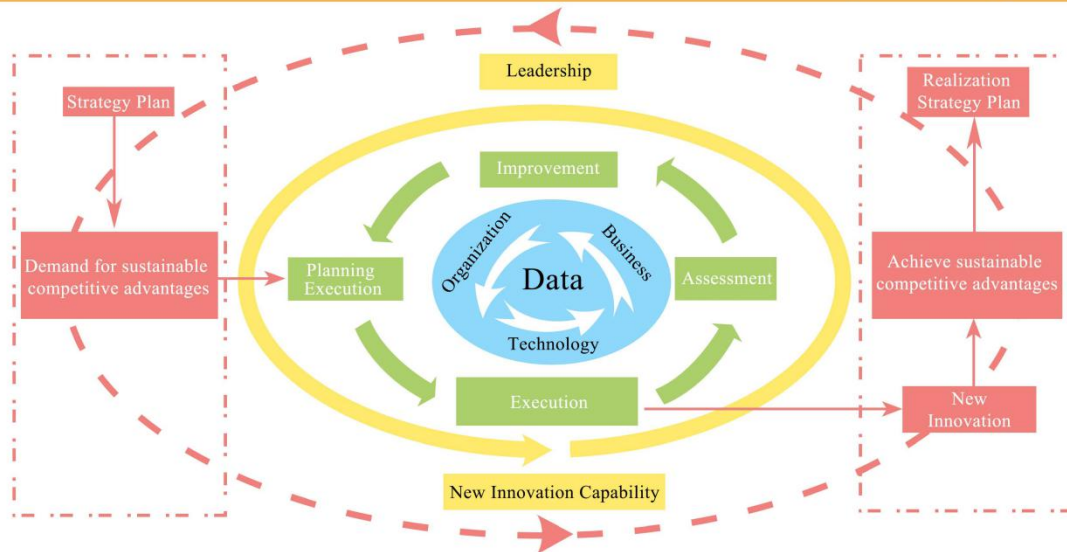


Fig 9GB/T 23001\_Informationization & Industrilization Fusion Management System

## 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



Selected "Innovative Talent" by Science and Technology ministry



Top Class A Talent by Xiamen City



Founder & Tutors

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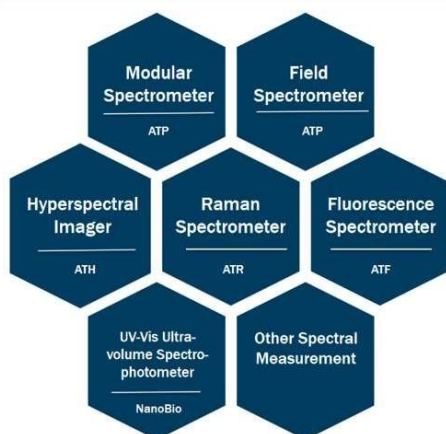
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Fig 10

## Category & Application



### Category



### Application




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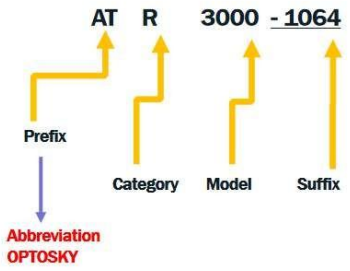
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Fig 11 Category & Application


**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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Fig 12 Model Name Rule