Datasheet

Scientific absorbance & fluorescence measuring system

ATX2100

Feature:

Multi-function measurement such as absorbance & fluorescence measurement

Wavelength range:190-2500nm

Absorbance reach up to 3.8

Replaceable fluorescence filter

Ultra-low CCD signal process PCB

Spectral resolution: 1.6 nm

Optical path: crossed C-T

Measuring time: 2ms-130s (software setup)

Spectrometer controls light source, synchronized measurement

Power supply: DC 5V±10% @ <2.3A

Light input connector: SMA905 or free space

Output data interface: USB2.0 (High speed) or UART

20-pins dual-row programmable extension connector

Application:

- Lab in university,institute etc.
- Multi-parameters online water quality analyzer
- Small volume, fast spectrophotometer
- Spectral analyzer, spectroradiometer, spectrophotometer analyzer
- Fluorescence spectrometer
- Biochemical analyzer
- Transmission, absorbance measurement
- Reflectance measurement

Description:

Optosky ATX2100 is newly designed high-performance absorbance & fluorescence measuring system. It consists of high performance deuterium halogen lamp, high-sensitivity, TE-cooled optic fiber spectrometer, absorbance & fluorescence multi-functional measuring sample cell, optic fiber, collimating system etc. Ultra-high sensitivity, TE-cooled optic fiber spectrometer employs optimized designs in photology, ultra-low noise electronics, which greatly reduces sensor noise to obtain optimized SNR(about 3 times higher than other competitors). Measuring reliability has been greatly improved, so measuring results do not change with ambient temperature.

ATX2000 simple configuration can be used to research and measure various spectrum such as reflectance, transmission, absorption, fluorescence etc.

ATX2100 employs deuterium halogen lamp lifetime > 5000hours (wavelength range: 190-2500nm),usually it' not required to replace light source frequently.

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Performance parameters

ATX2100 Low noise absorbance & fluorescence measuring plan	
Spectral range	190-2500 nm
Resolution	1.6 nm
Absorbance measuring range	0-3.8
Entrance connector	SMA905 connector
Optic fiber length	>1.5m
Optical aperture	Ø5mm
Optical path	10mm
Operating temp	-10-45 ºC
Operating humidity	< 90%RH
Spectrometer	
Type	TE-cooled back-thinned, high-sensitivity Linear sensor
spectral range	190-2500 nm
Effective pixels	2048
Pixel size	200μm×14μm
CCD cooled down to	-10℃
Optical resolution	1.6 nm
SNR	>6000:1
Dynamic range	12000：1
Optical path	f/4 crossed C-T
Confocal length	40 mm for incidence / 60 mm for output
Electrical parameters	
Integration time	1 ms - 130 second, software setup
Output data interface	USB 2.0
ADC bit depth	18 bit (Output 16bits)
Power supply	DC 5V±10%
Operating current	<3.5A
Storage temp	-20°C to +70°C
Operating temp	-10°C to +45°C
Pulsed Xenon lamp	
lifetime	≥5000 hours
Broad spectrum	185nm-2500nm
Preheating time	3 minutes
Deuterium lamp power	5W

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Halogen lamp power	5W
Light power stability	0.56% (8hours)

Structure

ATX2100 spectral measuring system consists of spectrometer, light source, optic fiber, sample bracket, golden sample and software etc.

Each categories include:

1. High sensitivity,TE-cooled optic fiber spectrometer
2. High stability deuterium halogen lamp, broad spectral UV,VIS,NIR light sources
4. High transmission UV optic fiber
5. Transmission, reflectance and fluorescence integrated,multi-function measuring sample cell
6. Optosky professional spectral measuring software.

Spectral range is selected according to actual users requirements, eg:UV spectrum requires to use UV spectrometer or back-thinned CCD array spectrometer, and broad spectral light sources.

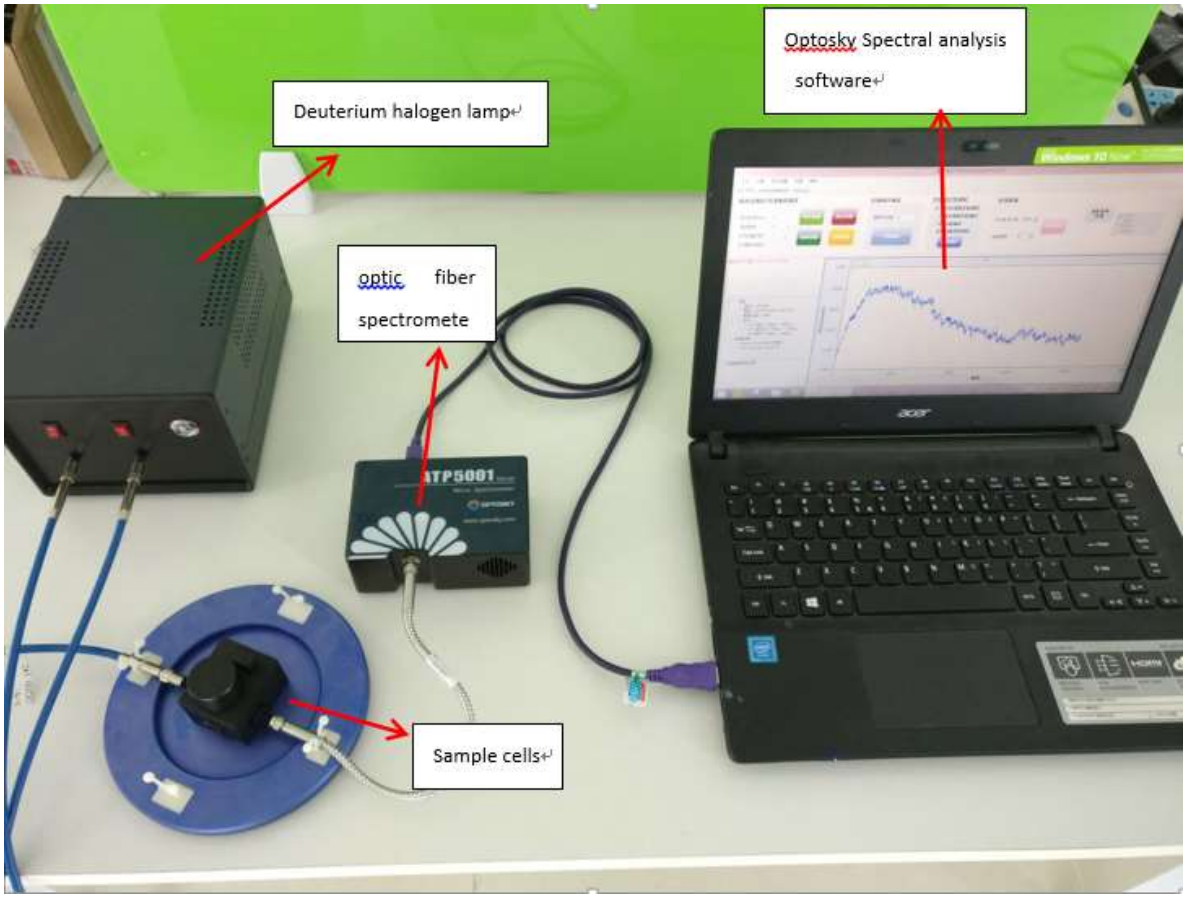

Fig 1 ATX2100 system scheme

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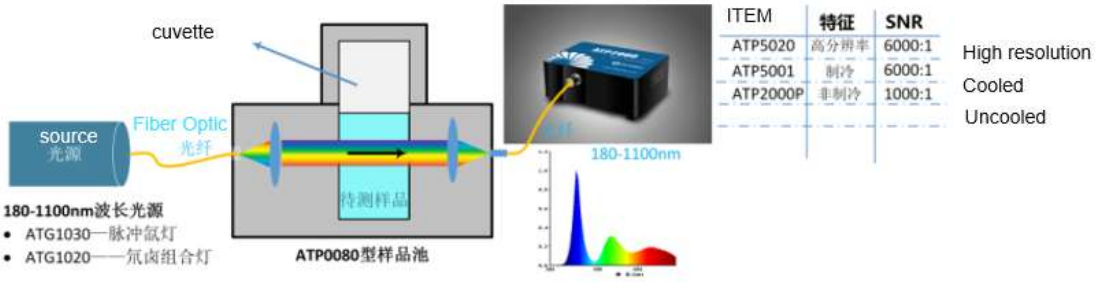

Fig 2 ATX2000 Transmission measuring principle scheme

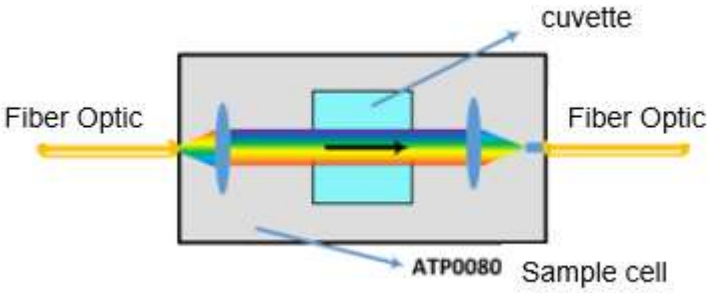

Fig 3 Transmission principle scheme

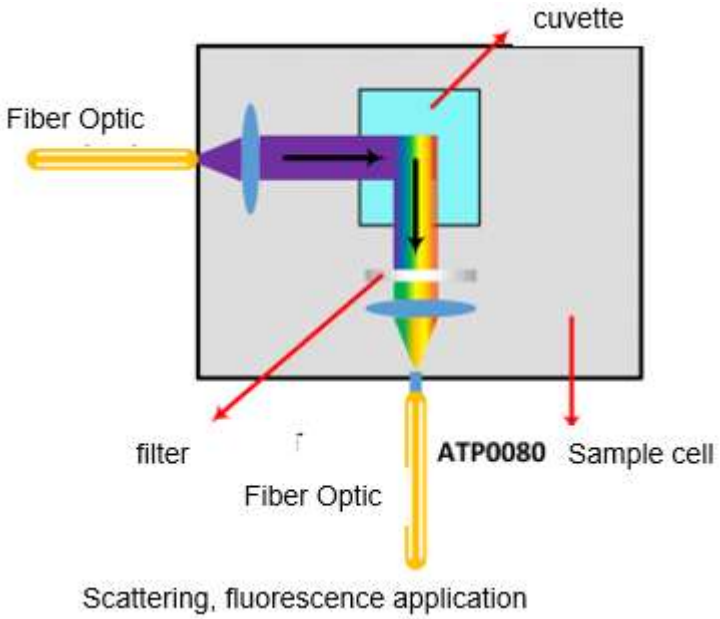

Fig 4 Fluorescence measuring mode principle scheme

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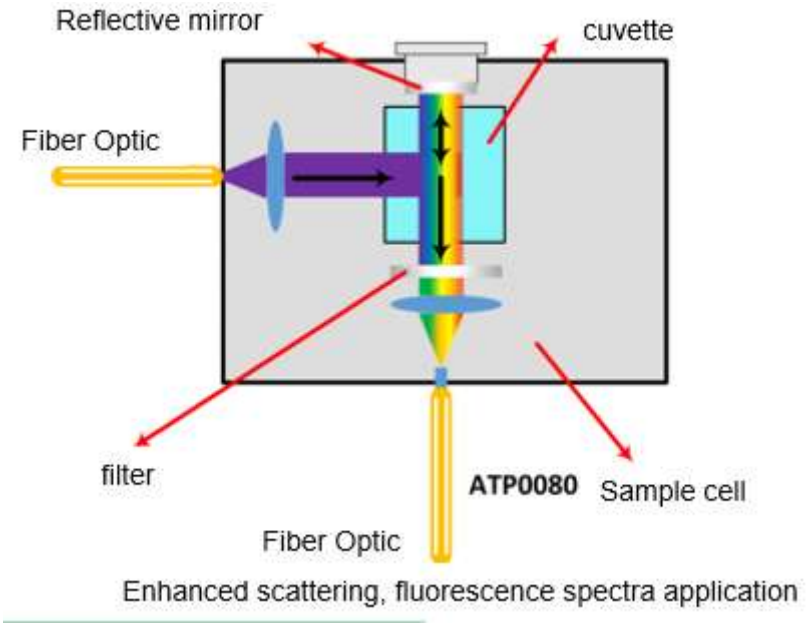

Fig 5 Enhanced fluorescence measurement mode principle scheme

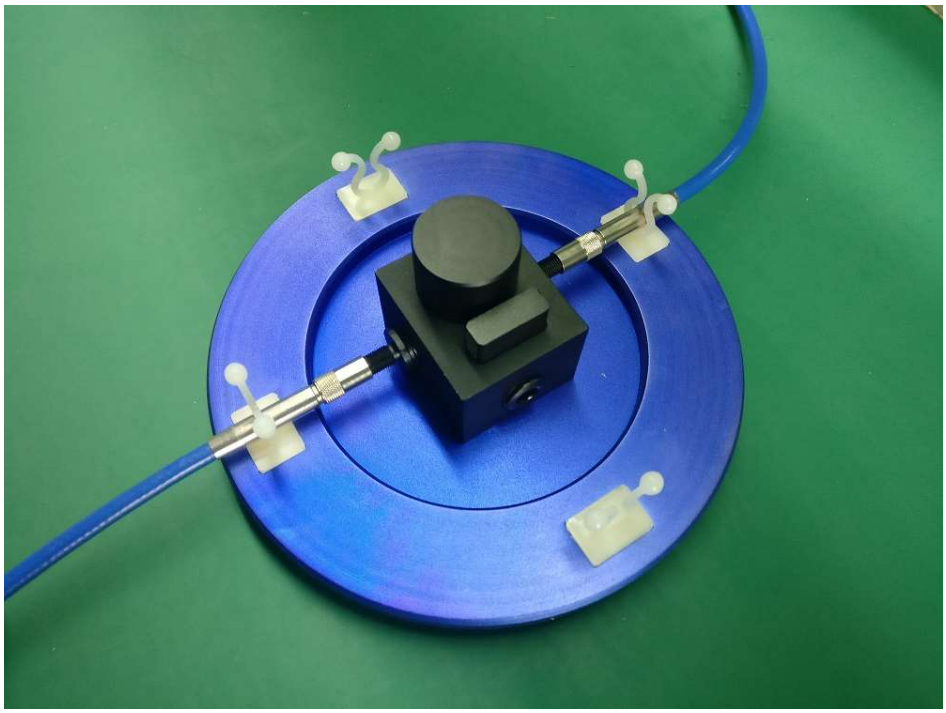

Fig 6 Transmission,reflectance and fluorescence integrated sample cell

2 Successful project

1) Fast UV,VIS spectrophotometer

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2) Multi-parameters water quality analyzer

3) Small volume spectrophotometer

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