



Innovations in Photonics

Autumn 2008

Getting up-to-date

Welcome to Ocean News, a platform where you can read about the latest topics and innovations in the field of photonics.

In this newsletter we will supply you with interesting news and info in the field of spectroscopy, like how low resolution Raman spectroscopy is used in pharma and handy tips and tricks.

Learn that quality is key for us, enabling us to give the best warranty in the business. Warranties that are also valid for our newest products, like the new UV sensitive Maya spectrometer and the revolutionary new optical sensing suite called Jaz. Both totally new and innovative products.

Innovation can also be found in the choice for the technologies and partners to complement ours. This year Ocean Optics has found a great new partner in the advanced colour measurement company Admesy.

Ocean Optics' innovative spirit also attracts other visionaries and innovators. That is why we like to hear from you! Let us know your challenge or applications as we love to get involved and work on a solution together.

Enjoy your reading!
The Ocean Optics Team

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Application Story: **Raman in Pharma**

Celebrating Innovations

Order now and get a FREE iPod Touch

As you will see in this issue of Ocean News, we have launched a lot of new products this year. To celebrate this innovative step forward, we will give away a FREE iPod Touch with every order above 4000 Euro that is received before December 31st 2008.

On the iPod Touch, we will include all the new Spectroscopy TV video tutorials on how to use our products and software. A convenient tool for you and your colleagues.

For more information about this promotion, please contact our sales team via sales@oceanoptics.eu.



Tips & Tricks

Electrical Dark Correction

We have implemented into our spectrometers several pixels on each side of the CCD array which are not illuminated during operation. So called dark pixels. We can use these dark pixels to monitor the changing dark level of the array of pixels.

Our spectrometers and software SpectraSuite are able to dynamically adjust the dark current levels of your measurements and thereby guaranteeing a stable measurement over time and temperature.

You can enable this feature by clicking the 'electrical dark correction' box in the main menu of SpectraSuite.

Tutorials, Instruction and Tips for Users of
Ocean Optics' Spectrometers

SPECTROSCOPY TV



Online Video Instruction

Having difficulties setting up your spectrometer for different applications? Ocean Optics now introduces a new learning tool called "Spectroscopy TV".

"Spectroscopy TV" contains a collection of tutorials designed to help new Ocean Optics customers set up, calibrate and use their spectrometers for a variety of applications. Episodes are also dedicated to demonstrating SpectraSuite spectroscopy software.

Purchase a spectrometer before the end of the year and get all recent training videos on a iPod Touch or go to our website via www.oceanoptics.com/tv.asp.

New Exclusive 3-Year Warranty

Ensuring Quality, Reliability & Durability

As of April 1st 2008, Ocean Optics has instituted an exclusive 3-year warranty for the entire line of spectrometers. Spectrometers purchased from Ocean Optics and its authorized distributors are now covered for a full three years against manufacturing defects – regardless of application.

More information can be found via www.oceanoptics.eu/warranty



JAZ

The new Optical Sensing Platform

This year we introduced Jaz, the new and revolutionary optical sensing platform that allows you to stack various modules together forming an autonomous measurement instrument.

At the heart of the system is an onboard microprocessor that can be set up in seconds to collect the spectra which will immediately be displayed on the OLED display.

For field applications, add a battery stack, analyse the spectra immediately and use the SD cards to store your data for post-processing.

For remote sensing applications, take the Ethernet stack and access your optical sensing system via its IP address from anywhere!

The sky is the limit when it comes to Jaz. Stack light sources, multiple spectrometers and other accessories to configure Jaz to your specific needs.



Jaz in the Environment

Spectral data collected and analyzed by Jaz can help environmentalists, ecologists and geologists take for example forest canopy measurements, examine mineral and soil composition on-site, evaluate water quality, monitor pollution and study volcanic gas.



Jaz in Lighting

Use Jaz for radiometric analysis of LEDs, flat panel displays, lamps and other radiant sources. Jaz is ideal for intensity measurements of incandescent, high-intensity discharge, UV curing and fluorescent lamps, as well as low-power sources such as LEDs and OLEDs.



Jaz in Agriculture

Jaz is a very convenient tool for growers and horticulturists to help determine crop ripeness, measure chlorophyll and light levels, and assess reflectance of petals and leaves to gauge plant health.



Jaz in Marine Life

Interested in measuring upwelling/downwelling, and supply fluorescence readings to gauge the health of fish, corals and other sea life? Jaz can collect and analyse spectral data to help marine biologists and hatcheries conduct their research.



Deep UV Spectroscopy

UV Ξ Maya

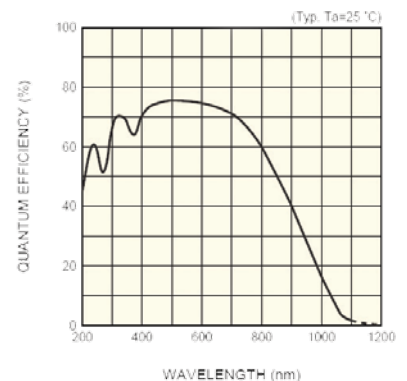
Maya is a new series of high sensitivity back-thinned 2D FFT-CCD spectrometers, that already proved itself for several UV sensitive applications.

Particularly suited to low light level and UV-sensitive applications, the Maya2000 and the Maya2000 Pro offer 90% quantum efficiency, high dynamic range, great signal-to-noise characteristics and excellent UV response.

Ocean Optics has proven the ability to measure down to 155nm. Optionally Maya can be equipped with nitrogen purge ports.

Maya spectrometers can be used for light analysis, environmental monitoring, chemical research, physical characterisation and other applications that require great response in the UV range.

Maya spectrometers have an easy to use USB interface, fully programmable strobe signals (single or continuous), optional propriety order-sorting filters and 10 onboard digital user-programmable GPIOs.



Spectral response of the Maya2000 Pro

OEM Solutions - Connecting Business

Ocean Optics' optical sensing technology is used in a vast array of OEM products.

Ocean Optics is known for providing specialized solutions and offers a complete range of miniature spectrometers, probes, fibres and optical components to suit virtually any manufacturing application.

The volumes you require, the delivery you need and the quality you demand are all assured under the Ocean Optics OEM developer program.

Joining our OEM program also provides access to our technical knowledgebase and engineering and production support.



Contact us now via **info@oceanoptics.eu** to find out how we can support you and your project.

Measuring Pharmaceutical active Ingredients and Excipients

A typical application for the pharmaceutical market is the capability of discerning pharmaceutical raw materials such as active ingredients, binders, fillers, lubricants and other excipients commonly used by this industry.

To illustrate the capabilities of low resolution Raman spectroscopy, several pharmaceutical active ingredients (Paracetamol and Carbamazepine) as well as two commonly used excipients (alpha and beta Lactose) were put to the test.



The samples studied consisted of simple organic compounds including excipients and active pharmaceutical ingredients. They were contained in standard, clear borosilicate scintillation vials with no additional preparation applied, purchased or obtained from a major pharmaceutical company.

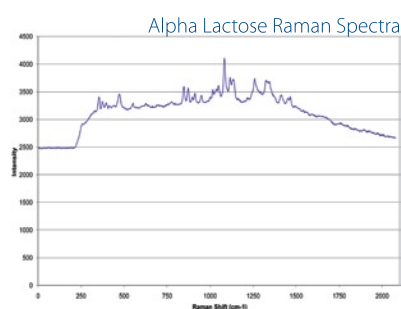
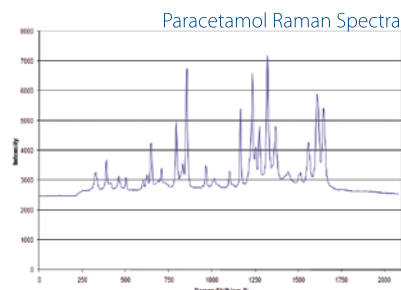
The samples were analysed using an QE65000 Raman-configured spectrometer incorporating a back-thinned, cooled detector array. The light source was a 785nm laser specifically developed for Raman spectroscopy with an output of 500 mW.

Light was delivered to and collected from the sample using a fibre optic probe specifically designed to work at the laser wavelength with appropriate filtering to remove the Rayleigh laser line. In order to take the measurements the tip of the probe was placed at the bottom of the glass vials containing the samples. The samples were measured using an integration time of 8 seconds and averaging three readings.



The spectra obtained in this study show the typical Raman features for these active and excipient substances. This demonstrates that such a modular approach to Raman instrumentation can be used to discern the main features of these pharmaceutical samples and differentiate the different raw

materials based on their spectral fingerprint. Furthermore, with proper method development and chemometric techniques, this approach may help obtain semi-quantitative data of the active ingredient content in a pharmaceutical mixture.



CONCLUSION

Low resolution Raman spectroscopy (LRRS) has proved to be a very useful technique for non-destructive chemical analysis and has gained increased attention and acceptance in the analytical laboratory as an affordable, robust and convenient alternative to cumbersome wet chemical analysis or expensive FT-Raman and FT-IR spectrometers.

The USB2000+ is the fastest and most popular spectrometer

At the end of 2007 we introduced the USB2000+ miniature fibre optics spectrometer. With 1000 scans per second it is our fastest spectrometer yet.

The USB2000+ uses the new RoHS compliant Sony ILX511B CCD array, the successor of the popular Sony ILX511 detector.

During the year, the USB2000+ has proved itself and has become the most popular spectrometer of 2008.

The USB2000+ can be build up to fit any application choosing among 14 gratings, 6 slits and hundreds of fibre optic accessories. For more information visit our website at www.oceanoptics.eu/usb



The new Optical Transmittance Spectrophotometer (OTS)

For accurate and repeatable measurements of optical filters, glass and ophthalmic lenses

We've combined our expertise in miniature spectrometers and precision optics to create a compact system for real-time transmittance measurement of ophthalmic lenses and other optical components.

The Ocean Optics Optical Transmittance Spectrophotometer (OTS) is ideal for in-lab applications where transmittance accuracy (to +/- 1.0%) and precision (+/- 0.1%) are critical. Common applications include measurement of plastic and glass lenses, as well as optical coatings, windows and filters, and glass and plastic components.

The OTS covers the entire visible wavelength range and accepts samples from 10 mm - 150 mm diameter and up to 10 mm thickness. What's more, manufacturers of neutral density filters and filter glasses, and anti-reflective and other precision coatings, will appreciate the ability to use the OTS as a real time, in-line process monitor.

For more information visit our website at www.oceanoptics.eu/ots



SpectraKit

Your plug-and-play solution

Recognised as the inventor of miniature spectroscopy, Ocean Optics has more than 15 years of experience in the field of optical sensing solutions.

Striving to provide working solutions to scientific problems, Ocean Optics developed SpectraKits.

SpectraKits are carefully designed to provide a plug-and-play solution for specific applications by selecting and placing all the necessary equipment, accessories, software, documentation and training materials in one convenient case.

By following the instructions and video materials the user will be rapidly acquainted with the system and software and will be able to start developing their own methods to analyze their samples.

SpectraKits are currently available for bioreflectance, oxygen sensing, Raman spectroscopy and Optical Transmittance Spectroscopy (OTS).



Ocean Optics partners with Admesy

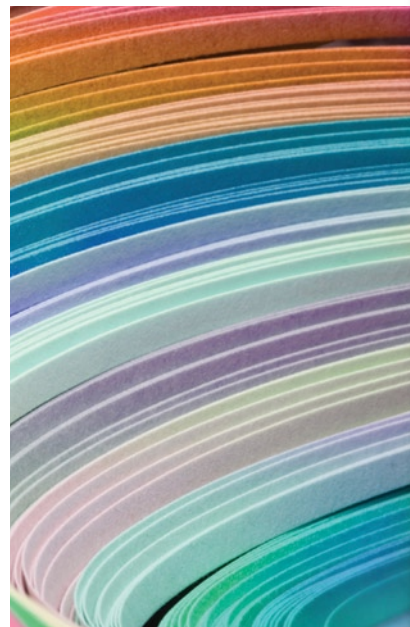
Introducing the absolute colour measuring unit Brontes

Ocean Optics has partnered up with the advanced colour measurement company Admesy and is now the worldwide distributor for its products. Ocean Optics will handle the full range of Admesy products and accessories, including the colorimeters and light sources.



The Brontes Colorimeter by Admesy is a high speed colour measurement device, specially designed for in-line usage where colour reproduction and cycle time are very important. The Brontes colorimeter has been designed for stability and accuracy with ease of use as key feature.

"Admesy's long history of in-line testing and industrial diagnostics will complete our range further and improve our service to customers," said Roland Kuijvenhoven, Senior Distribution Manager at Ocean Optics.



F600 UV-VIS Fluorescence Probe

Novel design maximizes fluorescence signal

The F600 fibre optic fluorescence probe has an unique optical design that allows users to control the depth of sampling and to optimize the region of overlap between excitation and emission fibres.

Custom options are available. Select different fibre wavelength range options or solarisation-resistant fibre, as well as different connectors and jacketing.



New Release OmniDriver

More than a Device Driver

OmniDriver is a software driver package for Windows, Mac and Linux operating systems that allows you to easily write custom software solutions for your Ocean Optics USB spectrometers and direct-attach devices. OmniDriver is the culmination of our best software driver packages and allows you to harness the power of high-speed data acquisition in a single cross platform driver. Integrate OmniDriver into your own software application for complete control over USB spectrometers and devices in virtually any OS environment.

We have released a new version of OmniDriver in August 2008. Customers who have bought a license in the past can contact us at info@oceanoptics.eu to upgrade to the latest version.



Tips & Tricks

How to eliminate second and third order effects

Ocean Optics offers patented OFLV filters that precisely block second and third order light from reaching specific detector elements. Our OFLV Variable Longpass Order Sorting Filters are applied to the detector's window via patented coating technology. In fact, we are the only miniature spectrometer manufacturer to offer "clean" first-order spectra.

Requesting More Information

I would like to receive more information about:

- | | |
|---|--|
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