FOR ALL YOUR PHOTONICS NEEDS

Matrix

FOR ALL YOUR PHOTONICS NEEDS

Nº I

COME AND SEE US! AT LASER 2003 STAND 177A HALL C1 JUNE 23-26 MUNICH

Ocean Optics BV
First in Photonics™

Meet Ocean Optics

May 19 – 24
ACHEMA, Frankfurt (Germany)
June 3 – 5
CLEO / QELS, Baltimore MA (USA)
June 3 – 5
SENSOR EXPOSITION, Chicago IL (USA)
June 23 – 26
LASER 2003, Munich (Germany)
July 13 – 16
IFT, Chicago IL (USA)
August 17 – 21
NCSL INTERNATIONAL, Tampa FL (USA)
August 5 – 7 48th
SPIE Annual Meeting, San Diego CA (USA)
August 24 – 27
Methods & Applications of Fluorescence, Prague (Chech Republic)

See our tradeshow schedule at http://www.oceanoptics.com/tradeshows.asp

Colofon

Ocean Optics B.V.
Nieuwgraaf 108g
6921 RK Duiven
The Netherlands
Tel +31 (0) 26 319 05 00
Fax +31 (0) 26 319 05 05
info@oceanopticsbv.com

Now available !! Real-time analysis of trace elements in solids, liquids and gases.

Do you want a detection system that permits real-time, qualitative and quantitative measurements of trace elements in solids, liquids and gases? Go for the LIBS2000+ laser-induced breakdown spectrometer.
This broadband, high-resolution instrument allows for spectral analysis from 200-980 nm with a resolution of ~0.1 nm.
'Sensitivity has been reported to parts-per-billion and picogram levels.'

Advantages of broadband LIBS techniques
Most traditional LIBS detection systems have a small spectral range. The LIBS2000+ is the first to provide broadband spectral analysis.

Because the system is non-invasive, you can perform real-time measurement in situ, within hostile industrial, chemical and biochemical environments, with little or no sample preparation. The detection system is field-portable and can be interfaced to a notebook PC via a USB port.

LATEST NEWS
Optical Multiplexer MPM-2000 : ideal for the process industry

The Fiber Optic Multiplexer is an instrument that can optically couple 1 input channel to 16 different output channels. The multiplexer consists of a precisely controlled stepper motor and a rotator block.
The optical path is coupled through multiple COL-UV collimating lenses. The Fiber Optic Multiplexer is software controlled and interfaces to a PC through the RS-232 protocol. The software enables you full control of the switching order, switching time and delay time. Also available as 2 input 8 output-version. The Multiplexer can work as a stand-alone unit for which a sample program is included. Also included is a software-driver for Windows.

The applications of the Optical Multiplexer can be found in the PROCESS INDUSTRY, where multiple locations need to be measured with multiple probes, all with one spectrometer channel and/or light source.

Special Offer!
Fiber Optic Variable Attenuator: 0 – 100%
A smart opto-mechanical device that controls the amount of light transmitted between two fibers. Internal disc varies attenuation from 0-100%.

NOW € 399,-

Quantum dots
for coupling with organic and biological molecules

You want to bio-conjugate into an almost endless number of multiplexing assays and high throughput screening applications? Get in touch with Ocean Optics and order the NEW EviTag water-stable nanocrystals.

Look and love it: EviTags proprietary coating ensures water stability and provides active carboxylic acid groups for bio-conjugation. How? By using simple and well-known binding chemistries. As a compelling alternative to traditional fluorophores, EviTag nanocrystals are an ideal tagging tool for biotech researchers, reagent suppliers and assay platform developers.

Three times better than traditional fluorophores
When compared with traditional fluorophores conjugated to biochemical markers, EviTags provide:

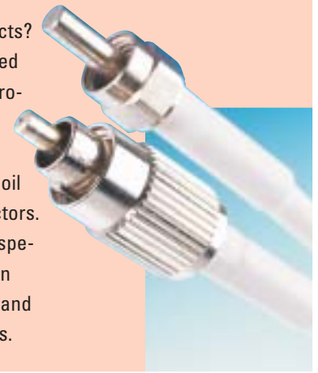
- narrower, predictable emissions
- excellent photostability to increase assay sensitivity
- more emission choices than standard fluorophores

Simultaneous detection, imaging and quantification
Excitation with simple light sources at virtually any wavelength shorter than the emission peak facilitates simultaneous detection, imaging and quantification.

Out now! The premium grade assemblies

Want to get the best out of your spectroscopy projects? Just obtain our premium-grade optical fiber. Designed especially for spectroscopists by the ultimate spectroscopy experts.

Hand-polished for peak performance, silicon monocoil or chrome-plated brass, high quality ARCAP connectors. Standard lengths are in stock. Got any requests for specials? Benefit from our in-home assembly capacity in our recently renewed fiber department. Just ask us and we will get it done, fast and to high quality standards.



Subscribe or not…

Did you receive Matrix by mail? Then you are on our mailing list. The next issues of Matrix will be sent to you without any need to subscribe. Did you come across Matrix as an insert or otherwise? Want to make sure you also receive this free issue in the future? Send us an e-mail: matrix@oceanoptics.nl

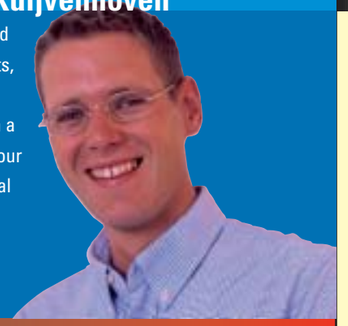
OceanView

Miniature spectrometers for big time research and OEMs
We proudly present our newsletter Matrix, a platform for exchanging the latest issues and innovations regarding all your photonics needs. This newsletter aims at being just as up-to-date as our website. And we do need an up-to-date medium considering the rapid innovations we are putting out. Inspiring examples? The to-good-to-be-true Evidots and the HR 2000 high-resolution composite-grating spectrometers, totally new and innovative products.
So put your work down, read Matrix and be completely up to date with the latest innovations!

For those who are not familiair with Ocean Optics, please read the following for a clear perspective on our outstanding market position. When Ocean Optics introduced its first miniature spectrometer the reaction of the market was one of disbelief. Today there is general appreciation for the systems we put on the market and due to various improvements over the years you will find our products in a vast number of demanding applications. Interested? Get in touch and find out why we sold more than 40,000 miniature spectrometers for big time research and OEMs.

With kind regards,
Kees van de Steeg
Managing Director

Ocean Optics Personal Roland Kuijvenhoven



Hi, I'm Roland Kuijvenhoven and at Ocean Optics I'm employed as an Applications Engineer. Any questions about our products, applications, specs and prices? Just contact me by phone or e-mail. My professional aim is to present every customer with a solid, creative, ready-to-use and tailor-made solution, fit for your specific job. Our challenge? Innovating products with a special touch of the Ocean Optics philosophy. Just take a look at our amazing product range and get inspired. It's all there for your specific applications in research and industry.

Special offers

Cosine correctors

CC3-DA € 249,-

Check our range of cosine correctors for emission collection. The CC-3-DA has the advantage of screwing directly onto the SMA 905 connector of a USB2000, HR2000 or S2000 spectrometer, creating a complete spectroradiometric system and eliminating your need for an optical fiber.

High precision water stable nanocrystals for reagent and assay development

EviTag nanocrystals can be combined with Ocean Optics spectrometers, excitation sources and linear variable filters to create complete spectrophotometric systems for fluorescence applications. Fully realized systems can be configured at less than 5,000 euros. Ocean Optics offers five EviTag emissions, with fluorescing wavelengths of 490 nm, 520 nm, 540 nm, 560 nm and 600 nm.

Water stable nanocrystals

Per color € 659,-

Updates

Updates and operating instructions downloadable at **www.oceanoptics.com**
Just check www.oceanoptics.com for a regular update for downloadable software. It's free, it's updated, and it's for instant use. Software updates, operating manuals and a number of applications: they can all be found on our website. **So why not use it?**

LVF Spectrometer for near and mid-infrared ranges

'A powerful detection tool for low-cost infrared analysis instruments.'

The core product of the LVF spectrometer is the Uray64 featuring a pyroelectric array detector with 64 pixels and a fully digital signal output. Uncooled operation and a high sensitivity for wavelengths from 1 to 20 µm make it a powerful detection tool for low-cost infrared analysis instruments. LVF technology consists of applying an optical interference filter, as used in line filters, as a wedged layer onto the substrate. The amazing result? An infrared window of which the transmitted wavelength varies linearly from one side of the window to the other side. The LVF ensures that each pixel sees a different wavelength. The range of this spectrum can be chosen from various ranges, e.g. 1.4-2.4 µm, 3-5 µm, 5.5-11 µm or 8-10 µm.

Additional advantages:

- Extremely easy to operate
- No adjustable parts
- Insensitive to vibrations or shocks
- Delivers one complete spectrum per second

Latest News

Temperature-regulated cuvette holder

This excellent device comes with a temperature controller calibrated against a NIST-traceable thermometer. It controls the temperature of the holder from –40° Celsius to +100° Celsius, with a stability of +/-0.02° Celsius.

We also include tubing for water and gas connections, stir bars for variable-speed magnetic stirring, and optical slits to modify light intensity. Plus remote PC control option and dry gas purge which limits condensation and excludes oxygen formation around the cuvette.

Total control with OOIBase 32 platinum

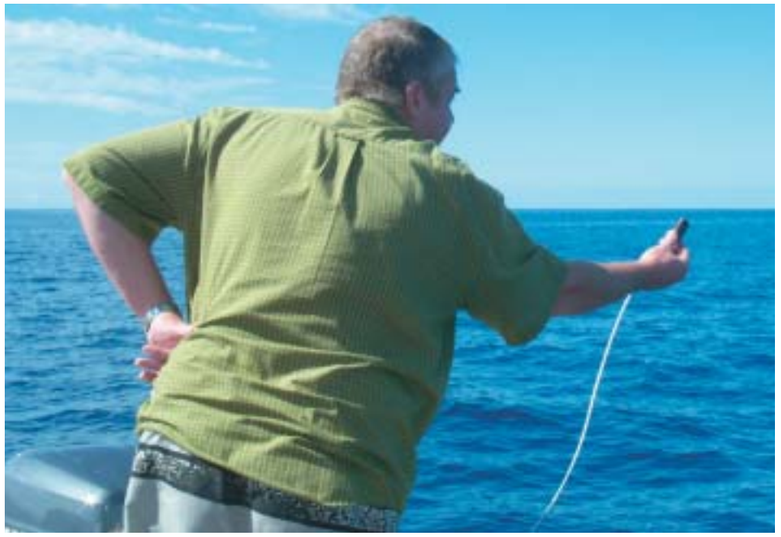
Script-writing software with great interface options

Ocean Optics introduces OOIBase32 Platinum, our standard OOIBase32 spectrometer operating software with embedded Visual Basic for applications-compatible scripting environment.
And the interface options? Great!
Such as: Scripts can control, automate procedures for, or process data from Ocean Optics spectrometers, sensors and

OOIBase32 software. You can also interface to software and devices from other manufacturers in three ways: calling an external Windows DLL, using ActiveX, or employing Windows automation. Developers can integrate multiple instruments and applications into one powerful system with one script.
The Price? Just € 1,099,-
Try our attractive trade-in offer.

Challenge: Researchers Study Effects of Mining on Coastal Erosion and Coral Reef Health in New Caledonia

In the small yet mineral-rich Pacific island of New Caledonia -- a French territory east of Australia that has about 25% of the world's known nickel resources -- a team of researchers is using Ocean Optics spectrometers to measure the effects of opencast mining on coastal erosion, sea grass growth and coral reef health.



Though opencast (also called "strip") mining has been practised in New Caledonia for nearly a century, it's only in the last two decades that the country has been working to understand and address its environmental effects. In particular, recent research conducted by Sylvain Ouillon of the Institut de Recherche pour le Développement (IRD), along with scientists from universities in France and the United States, has focused on the use of remote sensing to study the transport of fine sediments in coastal zones. Of particular interest is the relationship between above-water spectral reflectance measurements and turbidity profiles -- i.e. data collected on sediment types, concentrations and flows -- especially because the latter is related to fluxes in the presence of metals and various pollutants and thus, to sea grass growth and coral reef health.

To perform above-water measurements of remote sensing reflectance, Ouillon's team uses an Ocean Optics USB2000 Fiber Optic Spectrometer, which is especially valued for its portability, modularity and convenience (the spectrometer plugs directly into the USB port of a notebook PC). The USB2000 is configured for real-time, in situ spectroradiometric measurements from 360-1100 nm, and is coupled to an SMA 905-terminated optical fiber having a numerical aperture of 0.22. The fiber screws into a Gershun tube -- a conical, black anodized aluminum assembly with fixtures that allow the user to adjust the area of light entering the fiber -- to reduce the field of view to 3∞. Downwelling irradiance and upwelling radiance measurements -- essentially, the spectral distribution of the underwater light field -- are also performed.

In earlier experiments, Ouillon and his colleagues used Ocean Optics spectroradiometers to measure chlorophyll pigment concentration in coastal waters and the reflectance of sand and mud sampled from Caribbean, Mediterranean and Pacific beaches. The sand characterization application used a dual-channel spectrometer for visible (410-900 nm) hyperspectral measurements of reflectance over various types of natural sands. According to Ouillon, reflectance spectra were deduced from successive measurements of downwelling irradiance using a white Spectralon plate and upwelling radiance captured under natural light conditions. Ultimately, Ouillon and other researchers combine the use of spectroradiometric in situ measurements, satellite monitoring and numerical models to better understand the nature of particulate transport in coral reef lagoons -- and by extension, the erosion rates of coastal areas. For more info: http://www.oceanoptics.com/applications.asp

Coming issue: Oxygen Sensor Determines Hypoxia Levels in Irradiated Human Cells

Ideal for making your own assemblies Unjacketed bulk optical fiber

We are pleased to offer spooled, unjacketed optical fiber. Primarily if you are interested in making your own assemblies. We offer various core diameters from 50 µm to 1000 µm. **Watch this:** to improve the fiber's strength and flexibility we triple-coat it with a polyimide buffer before spooling the fiber.

Check it out!

We draw three types of unjacketed optical fiber:

- High OH Fiber (UV-VIS), for applications in the 250-800 nm range
- Ultra-low (VIS-NIR), for applications in the 400-2100 nm range
- Solarization-resistant (UV-VIS), for applications in the deep UV form 200-800 nm range.

Ask for our bulk fiber pricing

Are you a big user of unjacketed bulk optical fiber?
Check us out. We will be pleased to make you an attractive offer.