



APPLIED SPECTRAL KNOWLEDGE

OCEAN: SOLUTIONS

Spectral Sensing Solutions for a
Safer, Cleaner, Healthier Future

The Applied Spectral Knowledge Company

Ocean Optics is the Applied Spectral Knowledge company. For more than 25 years we have discovered, refined and delivered new approaches to solving problems with optical sensing technologies. We partner with customers to unlock the unknown, leveraging the power of light to build a safer, cleaner, healthier world.

Ocean Optics has locations throughout the United States, Europe, India and China. The company is a subsidiary of Halma plc (halma.com), a FTSE 100 (LSE: HLMA) group of life-saving technology companies with expertise in safety, health and environmental technologies.

From supplying spectroscopy modules and multispectral sensors in volume to providing turnkey systems for a wide range of applications, Ocean Optics partners with the world's leading companies to deliver solutions that produce decisive results. Our sensing technologies, ability to engineer complex solutions, and experience in applying spectral knowledge to solve measurement challenges are uniquely placed to deliver custom solutions from prototype to mass production.

Ocean: AT A GLANCE

Ocean Optics offers robust, scalable optical sensing tools, complemented by deep application knowledge, design and manufacturing expertise, and a global support and service network.

TECHNOLOGIES

- Spectrometers, multispectral cameras and sensors
 - Light sources, fiber optics and accessories
- Software, algorithm development, machine learning
 - Digital tools (cloud deployment)

CAPABILITIES

- Design partnership from concept to solution
- Global, ISO-certified manufacturing operations
- Applied spectral knowledge – multi-discipline, in-house expertise across thousands of applications

APPLICATION AREAS

Biomedical • Education • Environmental
Food & Agriculture • Industrial
Lighting & Illumination • Safety & Security
Research & Science

SERVICE & SUPPORT

- Application Services
- Calibration Services
- Lab Services (consultation, feasibility, insight)
- Global Sales & Support (USA, Europe & Asia)

Ocean: SOLUTIONS

From entrepreneurs to Fortune 500 technology leaders, Ocean Optics partners with businesses to develop and scale applied spectral solutions that deliver decisive results.

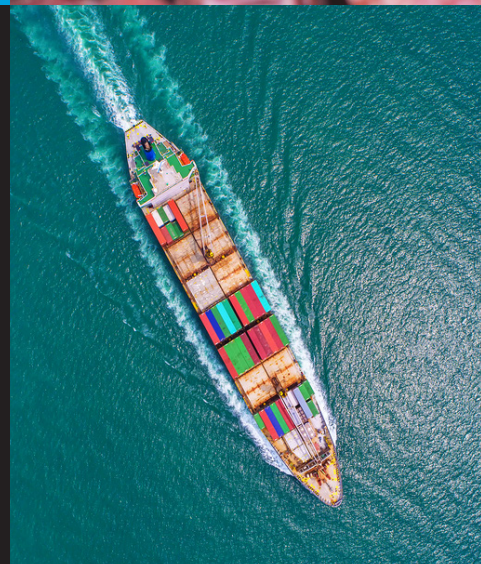
Machinery Supplier Targets Smarter, Faster Fruit Sorting and Grading

- **Customer:** Supplier of machinery for fresh produce sorting and packaging seeks more reliably accurate options for its customers
- **Our solution:** Spectral system that "sees" inside date fruit to determine moisture level, with machine learning analytics to predict date quality
- **Result:** A smart, adaptable and fully automated system that improves date quality and streamlines sorting processes



Sensing Tools Save Ship Owners Money While Reducing Exhaust Emissions

- **Customer:** Manufacturer of maritime sensors pursues a competitive edge in the market for exhaust monitoring systems
- **Our solution:** Ruggedized spectrometer integrated into emission sensor allows for continuous measurement of exhaust gases from ships
- **Result:** Robust onboard sensor that allows ship owners to monitor stack exhaust in situ, in real time, helping to ensure regulatory compliance and manage fuel usage



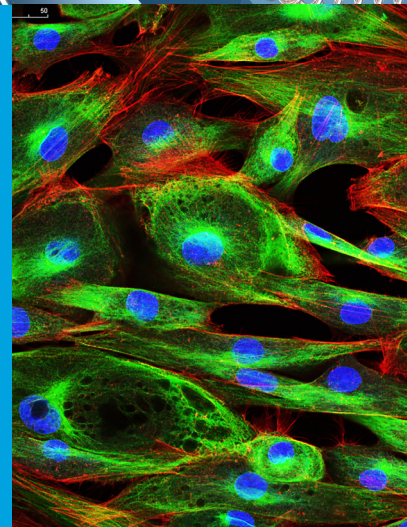
Manufacturer Develops More Accurate Method for Testing Fuels

- **Customer:** Provider of test instrumentation for the petroleum industry achieves a milestone in devices for determining fuel clarity
- **Our solution:** Complete system including spectroscopy hardware and software, plus instrument design expertise, outperforms visual techniques for test accuracy
- **Result:** Industry standard-setting device determines color and haze (cloudiness) in fuels, saving fuel producers and transporters time and money



Medical Device Developer Improves Wound Care, Saves Lives

- **Customer:** Medical device developer explores imaging technology to improve diagnostic accuracy for wound care and burn analysis
- **Our solution:** Multispectral imaging hardware and software sees below the surface of the skin to provide a more complete picture of body physiology
- **Result:** Accurate, noninvasive tool for intelligent wound management that lowers health care costs and reduces patient pain and suffering



Instrumentation Maker Seeks Tools for Particle Analysis

- **Customer:** Leading provider of scientific instrumentation for materials analysis evaluates spectral devices for particle characterization system
- **Our solution:** Custom spectral assembly in a lab instrument, plus expertise in applications, optics and software, solves complex particle analysis challenges
- **Result:** New particle analyzer with Raman analysis capability is powerful tool for chemical identification and quality control in pharma and other industries



Medical Device Maker Speeds Catheter Testing without Sacrificing Accuracy

- **Customer:** Manufacturer of implantable medical devices investigates faster, simpler options for quality testing of antimicrobial-impregnated catheters
- **Our solution:** Reflectance spectroscopy setup provides noninvasive analysis of critical catheter coating concentration and uniformity characteristics
- **Result:** Reliable system for catheter QC saves time and money versus testing lab procedures, is non-destructive, and enables better patient outcomes

