SPECTROSCOPY

" The study of the absorption and emission of light and other radiation by matter."

1. Semiconductors
2. Materials Science
3. Life Science

Hitachi integrates ease of use, optimized imaging, and high-image quality, while maintaining the compact design of the well-established Hitachi Series of products.

- Tabletop Microscopes
- Scanning Electron Microscope
- Transmission Electron Microscope
- Scanning Transmission Electron Microscope
- Focused Ion Beam systems

Electron Microscopy

ANALYTICAL INSTRUMENTATION

NMR Spectroscopy

- Chemistry Education
- Reaction Monitoring
- Polymers
- Forensic Drug Analysis
- Q-NMR
- Food
- Petrochemical
- NMR Research

- Spinsolve 60 benchtop NMR
- Spinsolve 80
- Spinsolve 90

Chemistry Education Reaction Monitoring Polymers Forensic Drug Analysis Q-NMR Food Petrochemical NMR Research.

NMR spectroscopy is the use of NMR phenomena to study the physical, chemical, and biological properties of matter.

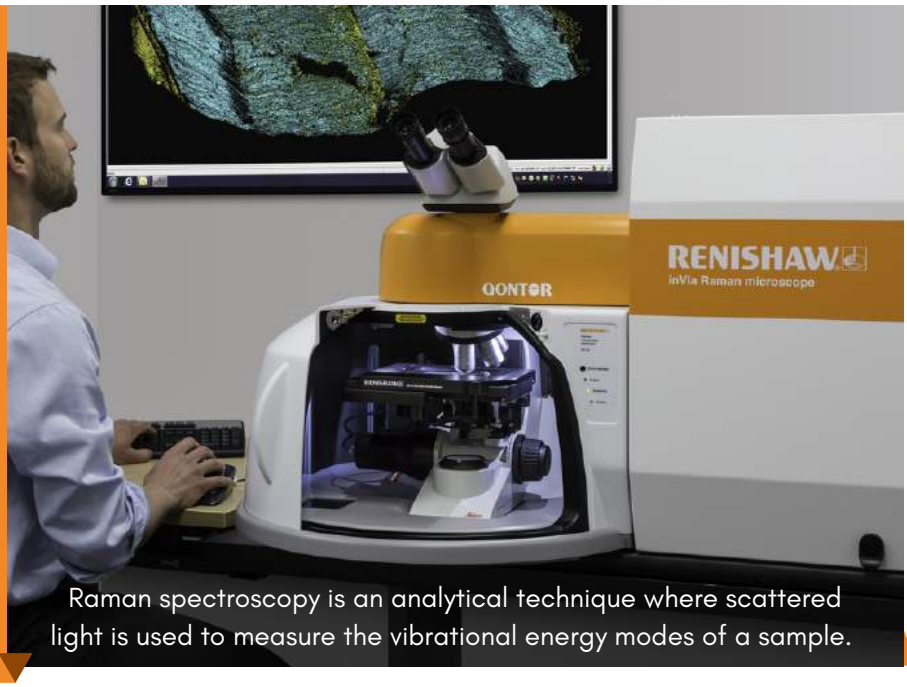
Separation Scientific
Tel: 011 794 4117 | Email: Info@sepsci.co.za | Web: www.sepsci.co.za

Spectroscopy is used as a tool for studying the structures of atoms and molecules. The large number of wavelengths emitted by these systems makes it possible to investigate their structures in detail, including the electron configurations of ground and various excited states.

RAMAN Spectroscopy

- Life Science
- Materials Science
- Chemical Science

> inVia™ confocal Raman microscope
> inLux™ SEM Raman interface
> Virsa™ Transportable Raman analyser
> RA802 Pharmaceutical analyser
> RA816 Biological analyser



Raman spectroscopy is an analytical technique where scattered light is used to measure the vibrational energy modes of a sample.

FTIR 7800A Fourier Transform Infrared Spectrometer.

FTIR Spectroscopy

- High sensitivity and stability
- Intelligent real-time monitoring of instrument status
- Multiple communication options
- Flexible and convenient testing
- Powerful software workstation
- Software can be operated with ANY version of Windows.
- CFR 21 Compliant Software
- 19 Libraries with approximately 11000 spectrums is included in the software
- Comprehensive Range of Starter Kits - Liquid Starter Kit, Solid Starter Kit and Gas Starter Kit and ATR Single Reflection ATR with ZnSe Flat Crystal Top Plate.

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ICP - OES

- ICP 5000
- ICP Consumables

The ICP5000 Dual View ICP system offers ultra low level analysis by axial and radial view analysis at the same time thus allowing fast, precise analysis of complex matrices such as drinking waters, high concentrated brines, organics solvents to name but a few.

The low standby power of the plasma minimizes start up times and reduces gas consumption. The wide spectral range of the spectrometer, purged with either nitrogen or argon, allows the analysis of elements far into the UV. 27.12 MHz Solid State, maintenance free, water cooled RF generator with a power output of 500-1600 Watts reacts to changes in plasma load, providing stable and consistent power supply into the plasma when switching between samples of high or varying matrix. The Coupling efficiency of ICP5000DV is better than 75%.

UV-Vis Spectroscopy

- Leading Edge Sensitivity (800 or better RMS)
- Wide Dynamic Range (with improved zero point adjustment)
- Ease of Use / Stand-alone Operation (no PC required)
- Optional PC Operation
- Automatic Performance Monitoring

The T112+ Series Spectrophotometer incorporates dual monochromator technology making it well suited to even the most demanding of applications in all areas of UV-Visible Spectroscopy including:

Hitachi offers a full range of high quality UV-Visible/NIR and Fluorescence spectrophotometers from teaching and routine instruments to research-grade systems.

- PG Instruments
- Hitachi

AA 500 Atomic Absorption

AA Spectrometry

The instrument is available with a flame atomiser and graphite furnace. Three flame options are available namely – Air/Acetylene, N2O/Acetylene and Air/LPG (Natural gas). The system can be fully automated via either our Universal Auto-sampler OR a Random Access Auto-sampler.

Hydride analyse is also available can also be FULLY automated. The instrument is FULLY controlled via our "user-friendly" software AAWin. With more than 1000 units sold World Wide the AA500 is used in many locations and for many applications and well accepted as a High Specification and reliable system.

The AA500 Atomic Absorption Spectrometer is available in **THREE configurations.**

1. Flame Analysis Only (AA500F)
2. Graphite Furnace Only (AA500G)
3. Combined Flame and Furnace (AA500FG)

NIR Spectroscopy

- Grain
- Beer
- Clinical
- Dairy
- Flex-Multi Component QC
- Flour
- Food & QC
- Meat
- Olive
- Spirits
- Sugar
- Textile
- Wine

NIR Sample – Reference technology
Like all SpectraAlyzer® instruments for high sensitive and long term stable measurements.

Easy sample presentation
by filling the whole grains into the hopper on the top.

User friendly
sample presentation and easy to operate.

Compact design
optimized for bench top or at-line application.

Touch user interface
and intrinsically mounted glass touch for straight forward hygienic instrument operation.

Many mathematical models
for all kind of products included for quick algorithms installation and start-up.

Webserver
web connectivity for direct instrument access via LAN and internet from anywhere, any time.

Radiation Measurement and Nuclear Medicine

- Liquid Scintillation Counters
- Gamma Counters

This product range includes pioneering liquid scintillation counters, gamma counters and microplate readers together with products for PET radiochemistry and sample preparation.

X-RAY PHOTOELECTRON SPECTROMETERS

- K-Alpha XPS
- Nexsa G2 XPS
- Escalab QXi

Multi-technique surface analysis instrument with high-resolution X-ray photoelectron spectroscopy and imaging.

X-ray photoelectron spectrometer for high-performance surface analysis.

X-Ray photoelectron spectrometer with automated surface analysis and multi-technique capabilities.

Multi-technique surface analysis instrument with high-resolution X-ray photoelectron spectroscopy and imaging.

Laser Ablation

High speed, high resolution imaging of biological matrices

Bioimaging requires lower fluence, better stability and superior sample transport. The **imageBIO266** is designed for the sole task of high resolution, high-speed bioimaging by LA-ICPMS. The first instrument designed for the single task of bioimaging.

The future of geochemical analysis lies in imaging. The **imageGEO193** provides the technology and workflow enhancements to create the highest resolution geochemical images at unprecedented speed. Designed for the next generation of geochemical analysis.

The **ESL213** is an affordable yet zero-compromise instrument suitable for a wide range of applications. A perfect complement to any ICP, ICPMS, noble gas or stable isotope mass spectrometer. The gold standard and most powerful 213 nm solid-state laser.

Thermal Analysis

- Differential Scanning Calorimeter (DSC)
- Simultaneous Thermographic Analyzer (STA)
- Thermomechanical Analyzer (TMA)
- Dynamic Mechanical Analyzer (DMA)

NEXTA DSC series, Hitachi's latest series of differential scanning calorimeter (DSC), delivers superior sensitivity with exceptional baseline stability. Moreover, it allows an even wider temperature range for Real View®. NEXTA DSCs also have ability to use temperature modulated DSC method to determine specific heat capacity. Together with the enhanced safety features designed in make this instrument even more user-friendly.

Analytical Systems

Spectrometry and Spectroscopy

*Contact **Sep Sci** for more information.*