



FT-RAMAN MODULE

RAM II

Sets the highest performance and versatility standards for FT-Raman spectroscopy

Innovation with Integrity

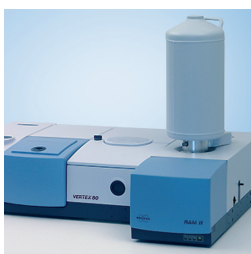
Bruker Optics added FT-Raman capabilities to its product line shortly after the technique was first reported in late 1980s. Since then, continual hardware and software improvements, as well as the development of various sampling accessories, helped Bruker Optics maintain the tradition of innovation and excellence in this scientific instrumentation technique.

High Performance

The RAM II module is the first dual-channel FT-Raman module. It is an add-on module that can be coupled to Bruker's INVENIO and VERTEX Series multi range FT-IR spectrometers, utilizing the spectrometer's one input and one output port. It combines fast and easy sample handling and maximum suppression of disturbing fluorescence, expected from FT-Raman. Switching between the infrared and Raman is fully software controlled.

Key Features

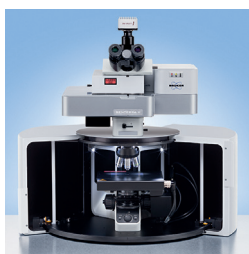
- FT-Raman module for INVENIO and VERTEX Series FT-IR spectrometers
- Automatic Accessory Recognition (AAR) and Automatic Component Recognition (ACR)
- Can be upgraded with FT-Raman and dispersive Raman microscope
- Stokes shift down to 50 cm⁻¹
- Second excitation line available
- Full line of internal and external accessories
- 21 CFR Part 11 compliance and validation



FT-Raman module RAM II connected to the VERTEX 80 FT-IR spectrometer.



HTS/Raman High Throughput Accessory for automated FT-Raman measurements using wellplates.



RamanScopeIII FT-Raman microscope accessory for Bruker FT-Raman spectrometers.

The RAM II module is equipped with standard 1064 nm excitation for utmost suppression of fluorescence. The module can be configured with a dual channel option for additional excitation line.

Sensitivity

Bruker's proprietary ultra-high sensitivity Ge detector with 5 days hold time of refrigerant, enhanced collection optics and the new dynamic 24 bit electronics provide unsurpassed sensitivity performance and long term stability.

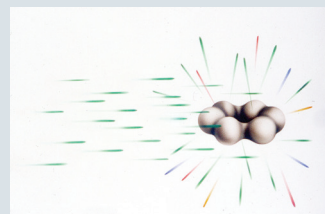
Sampling Flexibility

RAM II's large sample compartment can house an extensive range of pre-aligned sampling accessories, designed to accommodate all types of sample formats; from powders to liquids in vials. Bruker Optics offers various accessories to enhance the performance of FT-Raman analysis.

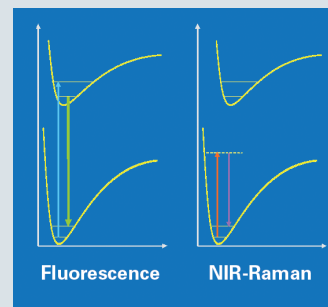
The Raman Effect

The Raman effect is based on the inelastic scattering of monochromatic light with matter. As the complementary vibrational technique of IR spectroscopy Raman provides detailed molecular structure information. Due to its non-destructive characteristic, Raman spectroscopy is ideally suited for in-situ analysis of macro and micro samples ranging from materials research to quality control. The Raman spectrum reveals valuable information about crystallinity, polymorphism and phase transitions. Raman spectroscopy combines high information content, no sample preparation and the use of fiber optic probes for remote sampling.

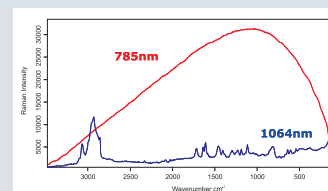
The Raman Effect



The Raman effect is based on an inelastic scattering of the monochromatic light.



Virtual suppression of fluorescence by long wavelength excitation in the NIR spectral range.



Comparison of Raman spectra of dental cement measured with a 785 nm excitation laser (red curve) as well as with the standard excitation line used for FT-Raman spectroscopy – 1064 nm (blue curve).

The measurement with 785 nm excitation line is completely masked by fluorescence!

Bruker Optics is continually improving its products and reserves the right to change specifications without notice.
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**Bruker Optics is ISO 9001, ISO 13485,
ISO 14001 and ISO 50001 certified.**

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