

Transmission Raman spectroscopy with inVia



High performance transmission Raman spectroscopy and imaging are now possible with the inVia confocal Raman microscope; this provides fast quantitative analysis of bulk materials.

With transmission Raman analysis, scattered light is collected on the opposite side of the sample to the illuminating radiation. The Raman scattered light is produced along the illumination path and therefore offers an average through the depth of a sample. The more common backscatter configuration is often limited to surface and near subsurface analysis making transmission Raman the ideal solution for probing bulk product or seeing through coatings and containers.

Transmission Raman on the Renishaw inVia:

- Fibre coupled accessory which maintains all the functionality of the inVia confocal Raman Microscope
- Typically no sample preparation needed
- Non-destructive and non-invasive
- Sub second acquisition times
- Powerful WiRE software for processing and analysing data

Quickly reveal information about your whole sample:

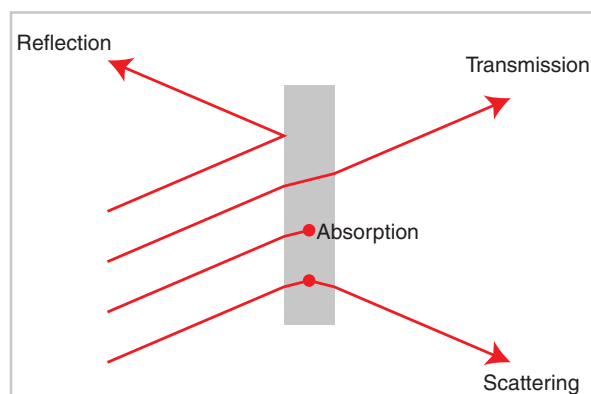
- Quick and easy material identification
- Accurately establish the relative amounts of different components, from even very large samples (> 20 cm³)
- Utilise inVia's high sensitivity, high spectral resolution and low wavenumber capability for polymorphic and crystallinity investigations
- Map large sample volumes to reveal blend homogeneity

A flexible solution which can be tailored to many applications:

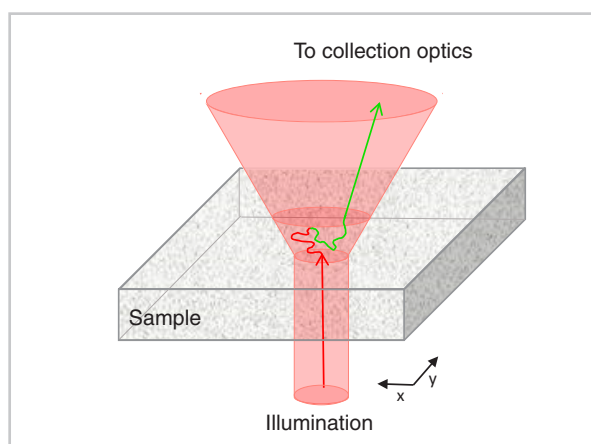
- Pharmaceutical tablets
- Powder blends
- Tissue samples
- Solvents and adhesives
- Transdermal patches

Ideal for analysing:

- Blend homogeneity
- Samples in containers
- Samples with coatings
- Large volume quantification



The different fundamental light processes during material interaction Reflection, Absorption, Scattering and Transmission.



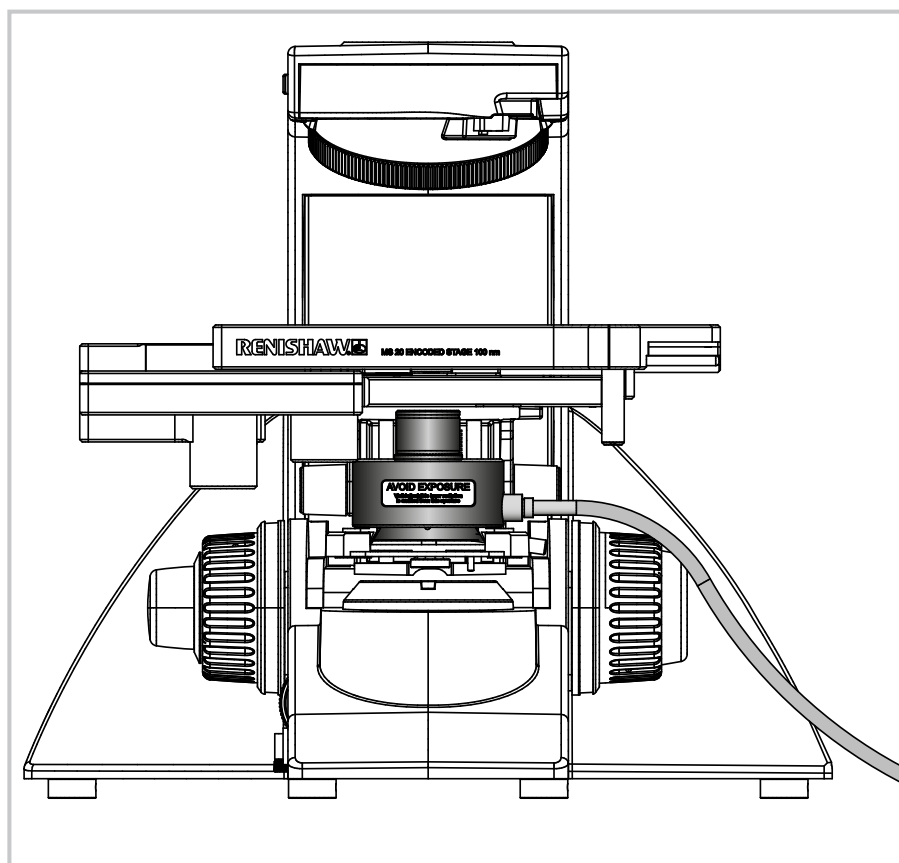
Light path through a sample. The red and green line highlights a single photon where the change in colour represents a Raman scattering event. By moving the sample during collection a full map of the sample can be obtained.

Features

- 785 nm and 830 nm excitation wavelengths available as standard (other laser frequencies on request)
- Fibre coupled enabling the combined use of the laser in both transmission and backscatter configurations
- Enables transmission Raman mapping when combined with the Renishaw High Speed Encoded Stage (HSES)
- Focused or collimated illumination beam up to 6 mm in diameter and a variety of collection optics available on request
- Fully software controlled with the ability to automatically switch between backscatter and transmission modes

Renishaw inVia: for transmission Raman

- Research grade Raman microscope
- High speed, damage-free chemical images using StreamLine™ imaging technology
- Flexibility to switch between lasers and illumination configuration through the software
- Fast, easy and targeted chemical image generation
- Complies with class one laser safety for use in and out of a laboratory setting
- Access to Raman dedicated applications specialists with years of experience



The inVia transmission Raman accessory

A range of related Renishaw literature is available. Please ask your local Renishaw representative for more information.

Renishaw. The Raman innovators

Renishaw manufactures a wide range of high performance optical spectroscopy products, including confocal Raman microscopes with high speed chemical imaging technology, compact process monitoring Raman spectrometers, structural and chemical analysers for scanning electron microscopes, solid state lasers for spectroscopy and state-of-the-art cooled CCD detectors, for both end-user and OEM applications.

Offering the highest levels of flexibility, sensitivity and reliability, across a diverse range of fields and applications, the instruments can be tailored to your needs, so you can tackle even the most challenging analytical problems with confidence.

A worldwide network of subsidiary companies and distributors provides exceptional service and support for its customers.

Please visit www.renishaw.com/raman for more information.