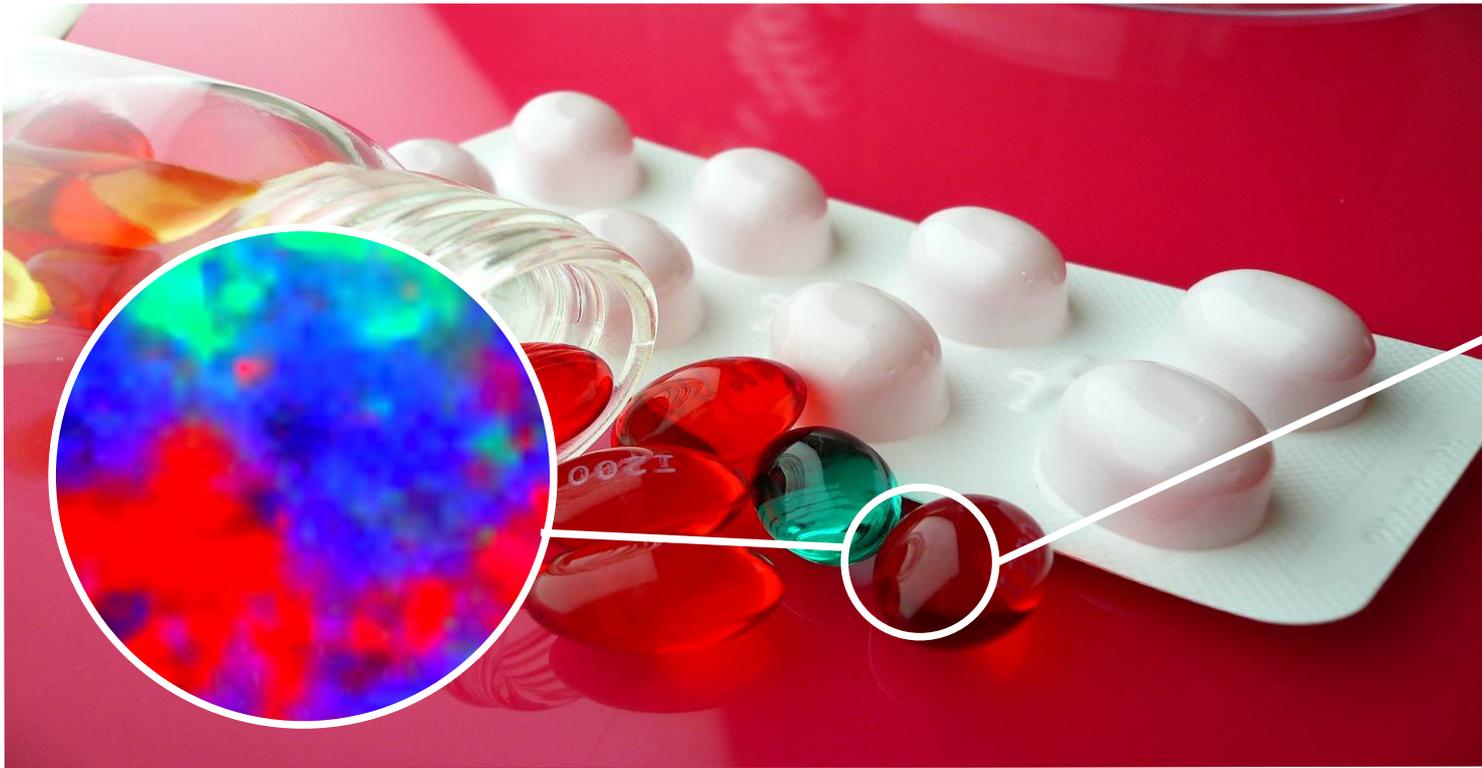


Confocal Raman Mapping

A Powerful Tool for the Study of Heterogeneous Materials

Intertek

Valued Quality. Delivered.



Intertek MSG, located in Wilton, North East England, has recently enhanced its extensive spectroscopy capability via the acquisition of a new state-of-the-art confocal scanning Raman microscope.

Raman microscopy is perfectly suited to the study of the spatially-varying chemical structures in materials as diverse as pharmaceutical tablets, carbon-fibre composites and surface coatings.

The design of this state-of-the-art Raman instrument combines the ability to quickly collect a Raman spectrum from a highly localised point in a sample with the capability to rapidly move the point of detection across a sample, such that 2-D or even 3-D maps of chemical composition can be generated. This capability will be of benefit in areas ranging from research and product development to problem-solving, failure analysis and production support.

Applications of Raman mapping:

- Pharmaceutical products
- Filled or composite materials
- Analysis of defects and contamination
- Material morphology

Did you know?

The new Raman Microscope complements existing infrared microscopy and imaging instruments. The spectroscopy team works closely with the microscopy, surface analysis and chemical analysis scientists within MSG to provide a comprehensive characterisation, problem solving and consultancy service.



Confocal Raman Mapping

Intertek MSG has expanded its spectroscopic analysis capabilities with a new high-speed confocal mapping instrument, enabling the study of chemical structures in a wide range of heterogeneous materials. For more information, please read on:

Applications of Raman mapping

The fast mapping Raman instrument is ideal for the study of any material having spatially varying chemical composition. Typical applications include:

Pharmaceutical products

- Mapping the distribution of active ingredients and excipients
- Characterisation of controlled-release systems
- Stability studies

Filled or composite materials

- Non-destructive depth profiling
- Real time dynamic cure studies of resins and adhesives

Analysis of defects and contamination

Material Morphology

- Polymorph distributions
- Crystallinity and orientation studies

Medical Devices

- Compositional analysis of complex structures including stents and catheters
- QA and failure analysis



Key features of the new instrument include:

- High spatial resolution – typically around 1 micrometre
- High sensitivity, allowing for rapid analysis and giving the capability for dynamic studies of evolving systems
- Multiple laser wavelengths – enabling the examination of a wide range of materials by suppression of fluorescence
- Transmission Raman microscopy for accurate analysis of bulk samples including opaque or turbid materials

Spectroscopy at Intertek MSG

Intertek MSG's spectroscopy team at Wilton, led by Dr Neil Everall, is internationally recognised as being at the forefront of both applied Raman microscopy and fundamental research into confocal Raman, publishing widely and presenting at International meetings, including several plenary lectures. Our work on the fundamentals has had a great influence on how confocal Raman is practiced globally, and has been recognised by several Academic and Industrial Awards.

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Get in touch

For more information please visit: <http://www.intertek.com/analysis/raman/confocal>. Alternatively, to discuss Intertek MSG's broad material testing and consultancy services, please contact us on +44 (0) 1642 435788.