Renishaw plc
Spectroscopy Products Division

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News from Renishaw

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For immediate release

StreamLine™ Plus – sets the standard for fast chemical imaging

Unparalleled speed and versatility are the result of hardware, software, optics, mechanics and electronics working together in perfect synergy

Renishaw plc will be showing its latest generation of fast Raman imaging systems - StreamLine™ Plus, at the 60th Pittsburgh conference on analytical chemistry and applied spectroscopy (8-13 March 2009, McCormick Place, Chicago, IL, USA. Booth #2008). To meet the market requirement for ever-faster chemical imaging systems, Renishaw has combined hardware, software, and firmware to optimise data collection, visualisation, and processing.

StreamLine™ Plus is the fastest fully-scaleable Raman imaging system available in the market place today - it is possible to use readout times as short as 6 ms per spectrum; a high-quality image of an entire tablet can be collected in less than 4 minutes. The combination of line focus (which minimises sample damage), a high-speed encoded stage (HSES), and synchronised readout of the CCD detector enables images to be collected both rapidly and at variable spatial resolution. There are no limits to the image area dimensions imposed by the objective field of view, therefore maximising adaptability and eliminating the need to stitch images together for large area coverage, resulting in artefact-free results.

The integration of the latest WiRE 3.1 software with StreamLine™ Plus offers numerous benefits to Raman users. Regions of interest are simple to set up using optical micrograph montages; experiments can be queued and chemical images can be viewed and manipulated during acquisition, and a comprehensive suite of visualisation and chemometric tools are available to process and analyse the collected data. The result is an intuitive workflow from sample loading to final reporting.

WiRE 3.1 also offers a range of new features including full support for multiple detectors, automatic spectrometer configuration for rapid “hands-free” excitation wavelength changes, and enhanced integration tools for third party products (tandem systems).

Dr. Nick Stone, from Gloucestershire Royal Hospital routinely uses StreamLine™ for screening biopsies, and comments: "To date, histological application of Raman mapping has been limited due to lengthy mapping times. Streamline™ Raman imaging is a novel mapping technique that has reduced total mapping times to a level that is becoming clinically practicable." With StreamLine™ Plus a further 2 to 4 fold reduction in analysis time would be expected.

For further details about StreamLine™ Plus and WiRE 3.1 please contact Viki Lacey (viki.lacey@renishaw.com, +44 1453 523815) or visit www.renishaw.com/raman

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Notes to editors

Renishaw profile

Renishaw is a world leader in metrology and spectroscopy technologies, with a strong history of innovation in product development and manufacturing.

Since its formation in 1973, Renishaw has supplied companies small and large, worldwide, with innovative products that increase process productivity, improve product quality, and deliver cost-effective automation solutions.

A high level of investment in research and development (R&D) has resulted in developments across a wide range of other product areas, including Raman microscopes for the spectral analysis of materials. Total annual expenditure on R&D, including related engineering costs, now amounts to 17% of turnover.

With more than 50 operations in 31 countries, and over 2,200 employees, Renishaw's customers are strongly supported throughout the world with outstanding technical expertise and service.

Images

Images of the inVia Raman microscope are available (contact us for publication-quality versions), as are Raman images of a variety of materials.

inVia Reflex Raman microscope

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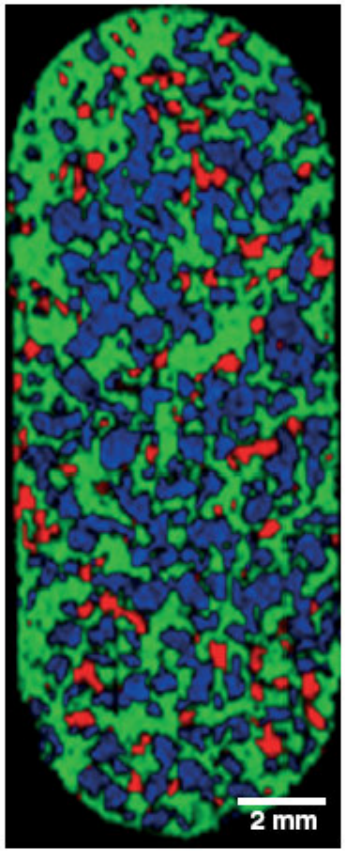
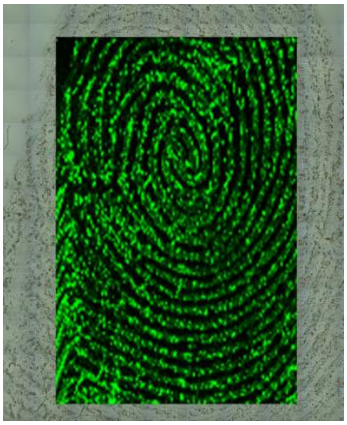


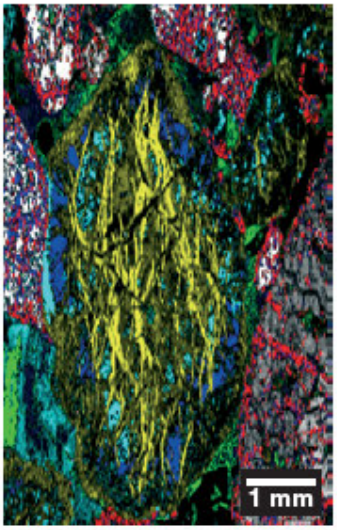
StreamLine™ Plus image of an analgesic tablet acquired in less than 4 minutes.

The red green and blue represent the distribution of different ingredients within the tablet



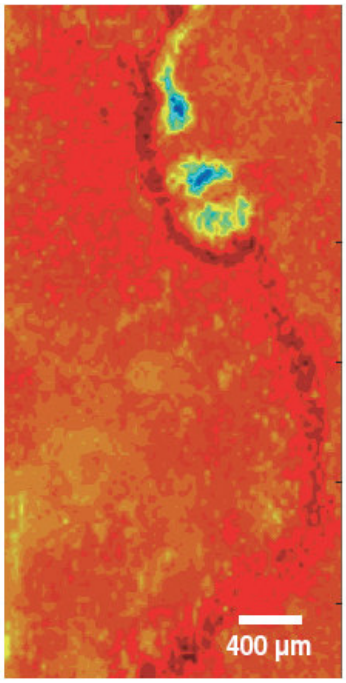
This is the first ever large Raman image of a fingerprint – it is an example of fast wide-field chemical imaging

Multivariate component analysis clearly distinguishes between the signal (print) and fluorescent background

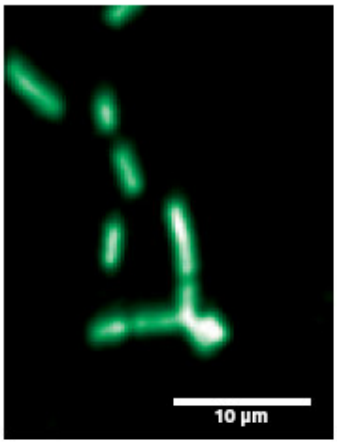


A Raman image of igneous rock from Tibet illustrates the benefits of our new software solutions

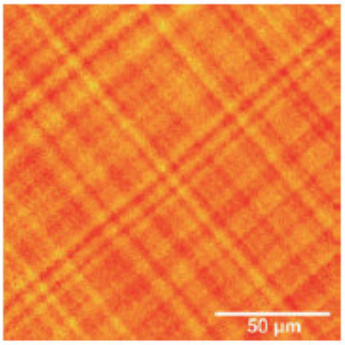
Using DCLS and library data it was possible to resolve clearly, 6 different phases



A StreamLine™ Plus Raman image of an oesophageal tissue section, which shows normal and pre-cancerous (blue/yellow) cells



A StreamLine™ Plus Raman image of *bacillus cereus* bacteria



A StreamLine™ Plus Raman image of stress – measured using shifts in the Raman bands - in a graded SiGe layer on silicon

For further information

Please contact:

Viki Lacey
Marketing Communications Manager
Renishaw plc
Old Town
Wotton-under-Edge
Gloucestershire GL12 7DW UK
Tel: +44 1453 523815 (direct)
Tel: +44 1453 523800 (switchboard)
Fax: +44 1453 523901
Email: viki.lacey@renishaw.com
www.renishaw.com/raman