4th September 2015

**Renishaw’s inVia used for quality control analysis at New Plasma Technologies**

New Plasma Technologies (NPT), based in Moscow, Russia, uses a Renishaw inVia confocal Raman microscope for investigating the structure and chemical properties of materials, non-destructively.

NPT was founded in 2011 as a nanotechnology project for metallurgical applications, and provides high quality solid nanostructured coatings for cutting and forming tools. One of these technologies is a self-lubricating, wear resistant, diamond-like carbon (DLC) coating for metals, alloys, polymers and composite materials. This technology improves the materials’ properties, giving them characteristics such as; high hardness (comparable with hardness of natural diamond), ecological cleanliness, low friction coefficient, biocompatibility and wear resistance. These features make DLC-coatings an important element for the manufacturing and application of products in many fields, including metalworking, mechanical engineering, space processing, defence, dental and medicine.

NPT uses its inVia confocal Raman microscope to control the quality of the coatings and help improve processing methods. The inVia’s high spatial resolution makes it an ideal instrument for the analysis of DLC; its benefits include: little or no sample preparation; it is safe and efficient to operate; it is easy to use; it enables the rapid collection of high quality data without damaging the sample; and it acquires repeatable, reliable data.

One of NPT’s DLC-coating quality control operations involves finding the ratio of sp2 (graphite-like) to sp3 (diamond-like) bonds, which determines the different properties and characteristics of the material (friction coefficient, adhesion, hardness). In the two years that NPT has had its inVia confocal Raman microscope, it has proven to be an indispensable instrument. In addition, Renishaw’s Moscow-based Raman specialists have provided methodological and technical support, when required. Their ability to provide rapid solutions for any questions arising has substantially increased productivity.

In addition to the immediate improvement in DLC-coating quality, the inVia has enabled NPT to expand the scope of its research. Cooperation with research institutes and laboratories in Moscow, Novosibirsk, Belgorod and Kazan stimulated the interest for research not only in the field of DLC-coatings, but also for other materials. The inVia confocal Raman microscope is ideal for this because of its power and flexibility. It can be used to study and analyse a broad range of materials, including—but not limited to—polymers, coating compositions, paintwork materials, lacquer coatings, carbon-based composite materials, fibers, ceramics, minerals, semi conductive materials and nanomaterials.

The inVia Raman microscope has been used to great success by NPT and paves the way for more widespread applications of Raman spectroscopy for material quality control in Russia. For further information about Renishaw’s Raman spectroscopy systems, visit www.renishaw.com/raman

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**About Renishaw**

Renishaw is one of the world's leading engineering and scientific technology companies, with expertise in precision measurement and healthcare. The company supplies products and services used in applications as diverse as jet engine and wind turbine manufacture, through to dentistry and brain surgery. It is also a world leader in the field of additive manufacturing (also referred to as 3D printing), where it is the only UK business that designs and makes industrial machines which ‘print' parts from metal powder.

The Renishaw Group currently has more than 70 offices in 33 countries, with around 4,000 employees, of which 2,600 people are employed within the UK. The majority of the company's R&D and manufacturing is carried out in the UK and for the year ended June 2015 Renishaw achieved sales of £494.7 million of which 95% was due to exports. The company's largest markets are the USA, China, Germany and Japan.

The Company's success has been recognised with numerous international awards, including eighteen Queen's Awards recognising achievements in technology, export and innovation. Renishaw received a Queen’s Award for Enterprise 2014, in the Innovations category, for the continuous development of the inVia confocal Raman microscope. For more information visit [www.renishaw.com](http://www.renishaw.com)

### For further information

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