



**ARTICLE**

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## Renishaw Raman-AFM/TERS Solutions

### A POWERFUL COMBINATION

Combined Raman/AFM (atomic force microscope) systems are excellent for characterising the properties of materials at sub-micrometre, and potentially nanometre, scales. **Renishaw's** inVia Raman microscope is the perfect partner for a wide range of AFMs, and other scanning probe microscopes (SPMs), as it offers users efficient, flexible, reliable, high performance operation.

The combined Raman/AFM systems consist of:

- an inVia Raman microscope
- an AFM/SPM
- direct optical coupling between the inVia and the AFM/SPM

### EXTREME FLEXIBILITY

Increase your options with a combined inVia-AFM system.

inVia Raman systems can be coupled to AFMs on upright and inverted microscopes, and to free standing AFMs (using an objective-lens-equipped transfer tube). This ensures compatibility with the widest range of AFMs, giving you the largest choice of possible AFM systems; you choose the best AFM for your needs.

Coupling to an AFM does not restrict any of the intrinsic capabilities of the inVia Raman microscope; you can still benefit from inVia's extensive standalone functionality, such as excitation wavelength, spectral resolution, and ultra-fast StreamLine chemical imaging.

Renishaw's flexible method of combining inVia to AFMs means you can still use both instruments independently, without any compromise in performance.

### PROVEN TERS SOLUTIONS

Tip-enhanced Raman scattering (TERS) provides chemical imaging at the nanometre scale, enabling you to take your research to a whole new level. Renishaw has been offering a range of TERS-ready solutions for over ten years, allowing TERS data to be collected from a wide variety of sample types.

### MAXIMUM EFFICIENCY

With inVia-AFM systems, save time and get your data rapidly.

inVia-AFM systems are so convenient you can get both AFM and Raman measurements without moving the sample from instrument to instrument, thereby saving operator time. For maximum efficiency, Renishaw's direct coupling methods use mirrors, rather than fibre optics. This ensures high quality data can be acquired in the minimum time.

## **SIMPLE TO OPERATE**

Combined Raman-AFM systems have traditionally been challenging to use; inVia changes this. Whether using an upright microscope, inverted microscope, or free standing configuration, alignment is simple because you can clearly see the AFM tip and the Raman laser spot.

## **CONFIDENCE IN YOUR RESULTS**

Raman-AFM is all about stability; coupling with inVia guarantees good results.

Renishaw was the first Raman supplier to realise the power of combining Raman spectroscopy and AFM/SPM, supplying its first combined Raman/AFM system in 1999 to Chalmers University of Technology, Sweden. These pioneering instruments led to the award of the prestigious Photonics Circle of Excellence in 2002.

## **SUPPORTED AFMS AND SPMS**

Renishaw's inVia Raman microscope can be combined with AFMs and SPMS from all the major vendors, including Bruker Nano Surfaces, Nanonics, NT-MDT, and many others. Please contact us for an up-to-date listing of the models that can be coupled with inVia, or if you have a preference for a particular model of AFM/SPM.

## **SIMPLE UPGRADING**

If you have an existing AFM we can help you to determine the most appropriate way to add inVia's powerful chemical imaging capabilities to your system.

## **CONTACT**

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