

## InGaAs detector for inVia Raman microscopes

## **Dispersive NIR-Raman spectroscopy**

Renishaw has worked with Princeton Instruments/Acton to develop a highly-efficient Raman microscope system capable of using an InGaAs array detector.

This system provides both fluorescence-free Raman spectra using 1.064  $\mu$ m laser excitation and photoluminescence spectra out to 1.7  $\mu$ m. It is available as a second detector option on all of Renishaw's inVia and RM-series Raman spectrometers.

This system offers:

- Close-to-the-laser-line performance: edge transmission >90% @ ~70 cm  $^{-1},$
- Ultimate fluorescence rejection
- Ultimate sensitivity for photoluminescence spectroscopy to 1.7  $\mu$ m using visible laser excitation
- Spatial resolution of ~ 2  $\mu m$  with fully optimised collection and detection
- High spectral resolution:
- < 1.5 cm<sup>-1</sup> (1200 groove mm<sup>-1</sup> grating)
- $< 2.8 \text{ cm}^{-1}$  (830 groove mm<sup>-1</sup> grating)



Ultimate fluorescence rejection. Rose madder pigment examined with three different excitation wavelengths: only 1.064  $\mu m$  excitation gives a clear spectrum.



White light spectrum, showing the excellent close-to-the-laser-line performance



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## **Example spectra**



Sulfur spectrum, showing the excellent close-to-the-laser-line performance



Spectrum of aspirin



Spectrum of yellow polyethylene - no fluorescence, short acquisition time

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