A wide Raman shot on a centimeter scale.

Imaging Raman scope

RAMAN view

New Raman imaging with a larger view.

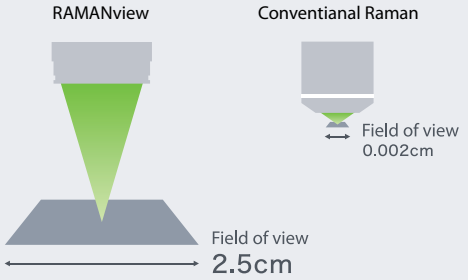
Nanophoton's technology on laser microscope enlarges the view of conventional Raman imaging. RAMANview provides larger field of view, deeper depth of focus, and longer working distance, which open up new experiments of Raman imaging.

Features

Larger field of view

The maximum size of Raman image of 2.5cm

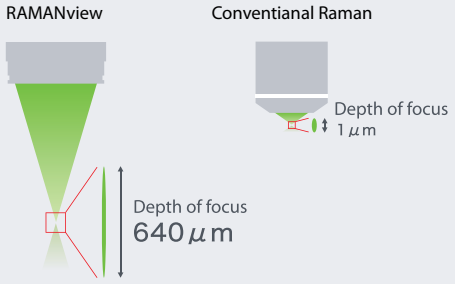
Stereomicroscope technique is applied for the view of 2.5cm. Microscopic field is also large.



Deeper depth of focus

Raman imaging is available for rough surface

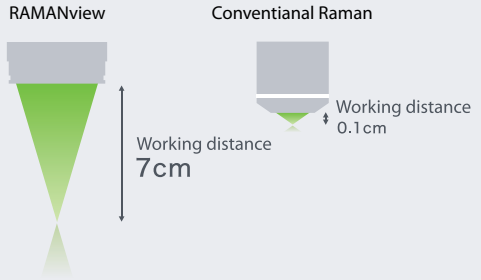
The surface roughness of sample and stage drift poses little problem for 640μm depth of focus.



Longer working distance

The maximum size of Raman image of 2.5cm

The working distance of 7cm expands the Raman applications to large samples without cutting.



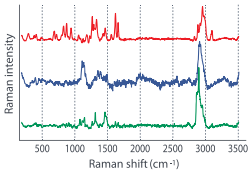
Applications

RAMANview opens up new applications!!

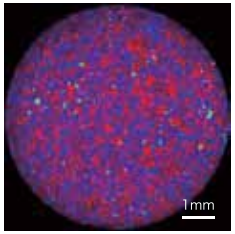
Component distributions on a tablet

Sample size

Raman spectra



Raman image



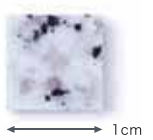
■ : A ■ : B ■ : C

Excitation laser	:	532 nm
Objective lens	:	1x
Number of pixels	:	170 x 170 pixel
Measurement time	:	0.5 sec / pixel

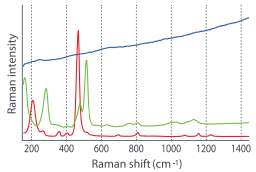
The Raman image of the whole surface of a tablet is shown above. RAMANview visualizes the spatial distributions of multiple components such as medical properties and additives.

Component distributions on granite

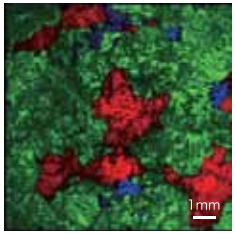
Sample size



Raman spectra



Raman image



■ : Feldspar ■ : Biotite ■ : Quartz

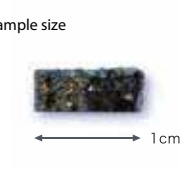
Excitation laser	:	532 nm
Objective lens	:	1x
Number of pixels	:	128 x 128 pixel
Measurement time	:	0.5 sec / pixel

The Raman spectra in selected regions show that each region contains quartz(red), Biotite(blue) and feldspar(green) in the Raman image.

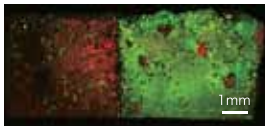
※ This sample is provided by Dr. Satoru Nakashima at Osaka University

Analysis of polymorphism of SiC

Sample size

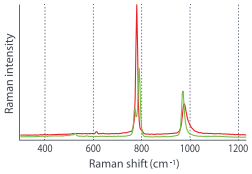


Raman image



■ : 6H-SiC ■ : 4H-SiC

Raman spectra



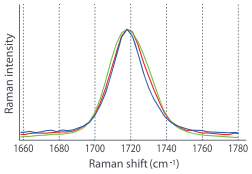
Excitation laser	:	532 nm
Objective lens	:	1x
Number of pixels	:	133 x 58 pixel
Measurement time	:	1 sec / pixel

Crystal growth of 6H-SiC on 4H-SiC is characterised by Raman imaging. RAMANview measures the whole Raman image of SiC devices with their sizes of cm.

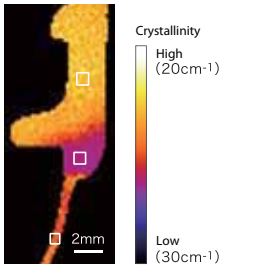
Analysis of crystallinity of a plastic molding

Sample size

Raman spectra



Raman image



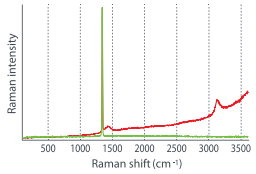
Excitation laser	:	532 nm
Objective lens	:	1x
Number of pixels	:	45 x 106 pixel
Measurement time	:	0.5 sec / pixel

Crystallinity of polyethylene terephthalate corresponds to the width of the Raman peak at 1720cm-1. The Raman image shows the crystallinity of a plastic bottle.

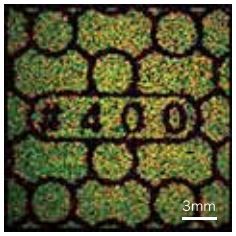
Analysis of crystalline quality of diamond

Sample size

Raman spectra



Raman image



■ : Diamond ■ : Amorphous carbon

Excitation laser	:	532 nm
Objective lens	:	0.5x
Number of pixels	:	128 x 128 pixel
Measurement time	:	0.1 sec / pixel

Raman spectra of diamond and amorphous carbon have a narrow peak at 1330cm-1 and a broad peak around 1350cm-1, respectively. This technique can be applied for large films of diamond-like carbon.

RAMANview specifications

Laser	488nm、532nm、671nm、785nm
Objective lens	0.5x 、1x 、2x
Illumination	LED
Focal length of spectrometer	300mm
Grating	600gr/mm
Spatial Dimensions	200 x 600 x 620mm
Weight	30kg

RAMANview performance (532nm excitation)

	0.5x objective	1x objective	2x objective
Field of view	40 x 54mm	20 x 27mm	10 x 13.5mm
Field of view of Raman imaging	25 x 25mm	12.5 x 12.5mm	6.25 x 6.25mm
Spatial resolution	20μm	10μm	5μm
Depth of focus	640μm	160μm	40μm
Working distance	70.5mm	60mm	20mm
Spectrum measurement range	100 ～ 3800cm^{-1} (600gr/mm)		
Spectral resolution (FWHM)	1.9cm^{-1} (2400gr/mm)		
Spectral pixel resolution	0.53cm^{-1}/pixel (2400gr/mm)		

nano photon

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