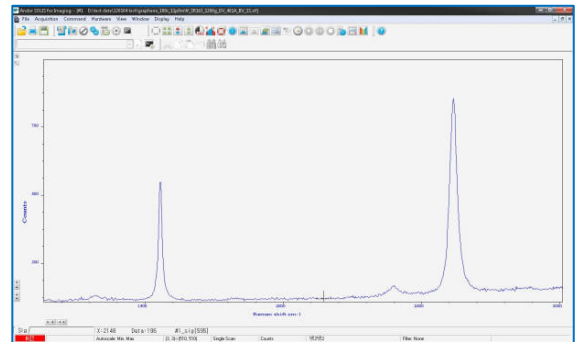


UniG2D, Micro Raman mapping system for Graphene



Solis, spectroscopy software

UniG2D, Micro Raman mapping system,

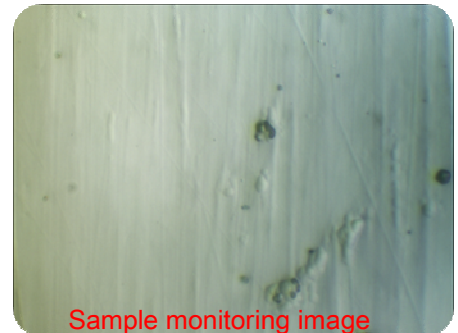
consist of ;

Excitation source

- 532nm SLM DPSS, 50mW or 632.8nm He-Ne laser, 20mW, or 785nm 100mW SLM laser, **please specify**

Microscopic Raman/PL chamber

- Olympus BX series Microscope based Raman chamber
- 10x, 20x, 50x & 100x, LWD plan objective lenses
- Beam spot dia. <500nm at 532nm TEMoo mode with 0.85N.A obj.
- Motorized XY mapping stage, 1μm resolution, min. 1μm mapping
Max. travel range : 85mm(XY) travel – **option**
- Polarizer & Analyzer set – **option**
- 3M CMOS color camera monitoring set with white LED source set



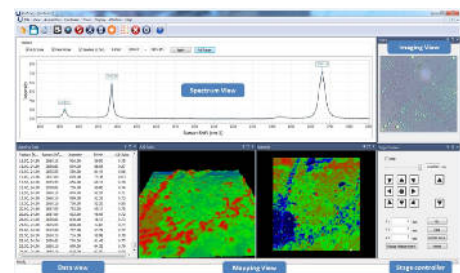
Sample monitoring image

High sensitivity CCD spectrometer set

- High throughput 193mm focal length Czerny-Turner Spectrograph set, standard.
- Motorized and PC controlled dual grating turret, interchangeable
- 1.6cm⁻¹ Raman shift resolution per pixel with 632.8nm, 1800gr/mm grating
- Grating selection for 1800gr–high resolution, 1200gr–high sensitivity, 600gr–wide range or NIR region.
- TE cooled CCD detector, 1024x256pixels, min. -70C
- Front-illuminated type, standard.

Optional : 2000x256pixel Back-thinned, >QE=90% at peak or EMCCD detector available.

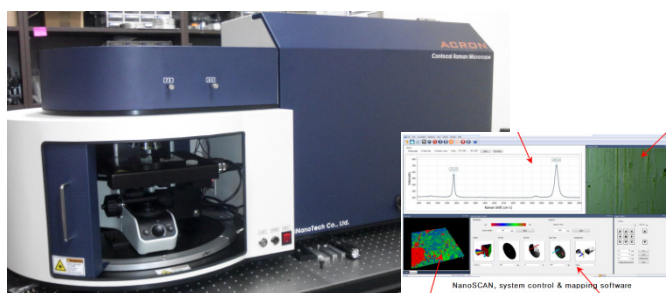
- System software : Solis, data acquisition and operation
- UniSCAN, Mapping software-**option**
- Mapping software function : wavelength, Raman shift, FWHM, intensity, integral value, D & G-2D ratio, etc.
- Integrating system with control station included.



UniSCAN, Mapping software

Introduce of Raman / Photoluminescence / Fluorescence measurement system

ACRON, Automated confocal Micro Raman/PL system

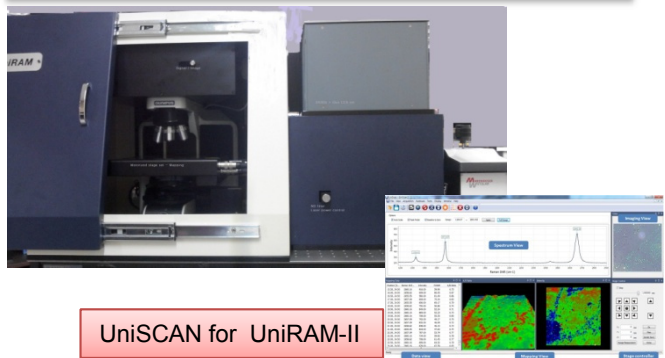


NanoSCAN for ACRON

System specification

Laser	Raman : 473nm, 488nm, 532nm, 632.8nm, 785nm, etc. Photoluminescence : 325nm, 375~890nm LD Lasers, etc. Power control : 11 steps ND filters. (0.01~100%)
Spectrograph	Aberration corrected imaging spectrograph On axis Triple grating Turret Raman shift resolution <0.9cm ⁻¹ per pixel @ 632.8nm, 1800gr/mm grating Laser line cut-off : <60cm ⁻¹ @532nm
Sample image	Koehler illumination system for reflected white light via LED light source & 3MP color CMOS camera for imaging
Spatial resolution	<500nm(XY), <1µm(Z) @532nm, 100X objective (NA 0.85)
Detector	High sensitivity TE cooled CCD Pixel format : 1024 x256 pixels (26µm x 26µm)
Mapping stage	XY : travel range max. 76 x 52mm Min. step resolution : < 100nm Z-axis : Z-depth mapping : <50nm
Integration Software	NanoSCAN for ACRON / UniSCAN for UniRAM Beam switching, Laser power control, Spectrograph control, Image and signal measurement, 2D & 3D mapping, data analysis, FWHM, intensity, Raman shift, etc.

UniRAM-II, Micro Raman/PL mapping system



UniSCAN for UniRAM-II

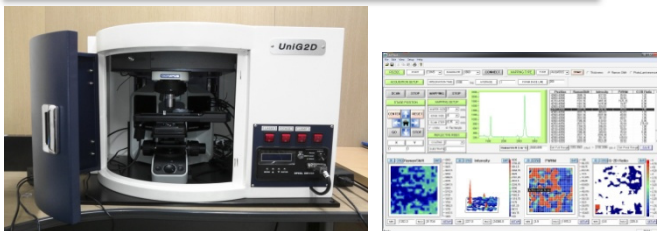
DeSCAN, Laser scanning confocal imaging module



Specification

Laser	405nm, 488nm, 532nm or 561nm, 640nm, and user requested selectable source Power control : continuous step ND filters.
Microscope	Compatible with all microscope bodies (via video port) Combines with all types of commercial Upright & Inverted microscopes including Leica, Carl Zeiss, Nikon, Olympus, etc
Scanner type	Two galvanometer (XY) optical scanners
Scan resolution	128x128pixels, 256x256pixels, 512x512pixels
Scan speed	1.5frame per sec. @512x512 pixels
Scan Zoom	1x~16x (optical zoom)
Confocal pinhole	Motorized selectable pinhole
Detection Range	400-750nm or customizable
No. of detector	Upto 2, or customizable
Software	LabView, Function : Operation / Image Processing / Color Merge / Line Profile, etc.

UniG2D, Micro Raman system for Graphene



* Features ;

- Compact design & easy to use for Graphene Raman measurement
- Microscope Raman mapping & G-2D peak Ratio., etc

* Specification ;

- SLM 532nm, DPSS laser set, >50mW, other wavelengths available.
- TE Cooled CCD & Imaging spectrograph
 - 1024x256pixels, -70 °C /TE cooling, USB2.0 interface
 - Volume Phase Grating (470-650nm), 1200gr/mm grating
 - 1.1cm⁻¹ per pixel Resolution @slit-10
- Microscope Raman chamber, 1µm beam spot @100x lens
- Motorized XY stage set for Mapping
 - stepping motor stage & sample holder
 - from 10µm~85mm XY travel, standard, 1µm step resolution.
- System Control PC & UniMAP, mapping software
 - FWHM, intensity, peak Raman shift, G-2D ratio,
 - 2D & 3D color maps of mapping image