RAMAN INSTRUMENTS

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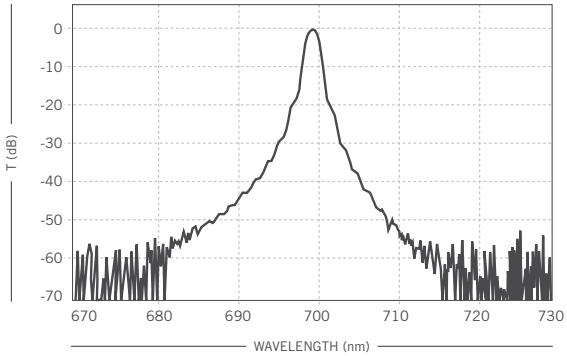
MONDAY TO FRIDAY 9AM TO 5PM (GMT-5)

Photon etc
A spectrum of solutions

RAMAN INSTRUMENTS

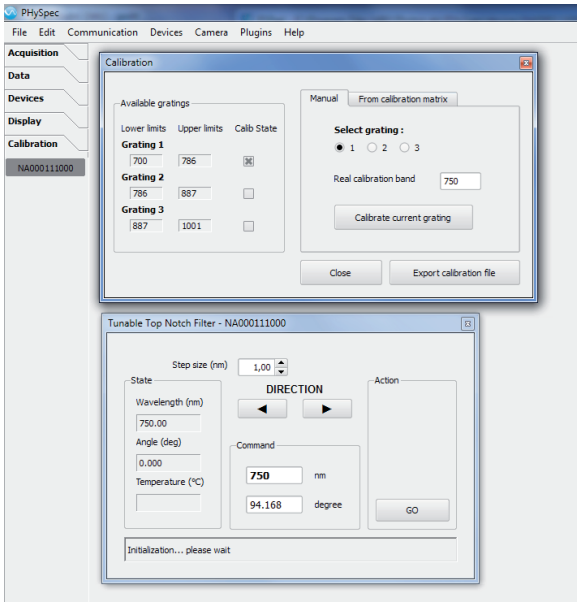
Raman spectroscopy is a powerful tool to study vibrational, optical, and electronic properties of materials in a non-destructive manner. Raman signal is typically orders of magnitude lower than the intensity of the excitation laser line. Photon etc now helps breaking new frontiers by approaching an excitation wavelength as close as 10 cm^{-1}. This unmatched filtering technology, based on Bragg tunable filters, is ideal for high efficiency simultaneous collection of low wavenumber Stokes and anti-Stokes signals. Moreover, these all-glass filters have a much higher damage threshold and a longer lifetime than traditional filters.

EXAMPLE OF MEASURED LINE PROFILE OF A SUPERCONTINUUM LASER PASSING THROUGH PHOTON ETC'S LLTF

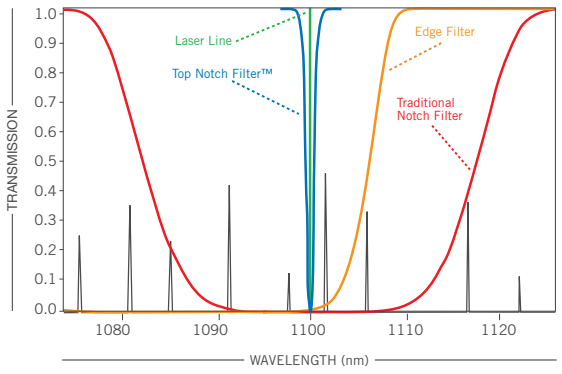


PHYSPEC

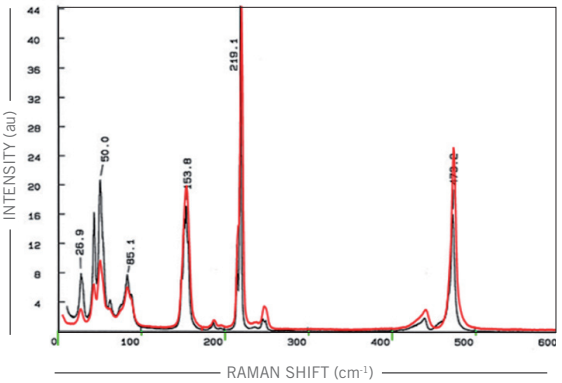
PHySpec is designed to control all of Photon etc's devices. Our proprietary software is easy to install and presents a user friendly interface. ActiveX controls and customization are available.



TOP NOTCH / TRADITIONAL NOTCH / EDGE FILTERS



RAMAN SPECTRUM OF SULPHUR USING PHOTON ETC. NOTCH FILTER AT 633 NM
(COURTESY OF S. MARUYAMA, U. OF TOKYO)



APPLICATIONS

- RESONANT RAMAN SPECTROSCOPY
- PHARMACEUTICS
- NANOTECHNOLOGY
- CARBON NANOTUBES CHARACTERIZATION
- BIOMEDICAL
- TUNABLE LASER FILTERING

LASER LINE TUNABLE FILTER

The Laser Line Tunable Filter is a non-dispersive, sub-nm tunable bandpass filter that transmits a single laser line while blocking unwanted lines and fluorescence. It delivers the highest signal throughput in the industry. Output pointing is very stable while changing wavelength, removing the need to realign optical setup. This filter is perfectly matched to our Tunable Top Notch Filter for Raman applications. It is also ideal as a pre-monochromator for triple spectrograph systems using various wavelengths. The LLTF is compatible with any visible and NIR broadband source. Free space or fibered. The LLTF is the only tunable filter exhibiting an isolation higher than OD4.

Standard Product	Spectral Range (nm)	Bandwidth (FWHM) (nm)
LLTF 850	715-1000	0.4
LLTF 950	800-1100	0.4
LLTF VIS-2	400-1000	2
LLTF SWIR	1000-2300	4

SPECIFICATIONS

SPECTRAL WINDOW	400 to 2300 nm
BANDWIDTH (FWHM)	From 0.3 to 4 nm
PEAK TRANSMISSION	up to 60%
APERTURE	≤ 5 mm
INPUT BEAM DIVERGENCE	≤ 1 mrad

TUNABLE TOP NOTCH FILTER

This filter is perfectly matched to our Laser Line Tunable Filter for Raman applications. With a throughput much higher than a triple spectrograph and with similar selectivity, the Tunable Top Notch Filter is an attractive option at a fraction of the price of its only competitor. Based on a non-dispersive technology, it rejects a narrow band of wavelength over a wide spectral range. Furthermore, this glass made filter has a lifetime of many years unlike his gelatin counterpart. The unmatched pointing stability of the Tunable Top Notch Filter combine to its user friendly control software is the perfect tool to help scientists concentrate on data collection and results rather than spending time on alignment and programming.

Standard Product	Spectral Range (nm)	Bandwidth (FWHM) (nm)
TTNF 850	715-1000	0.4
TTNF 950	800-1100	0.4

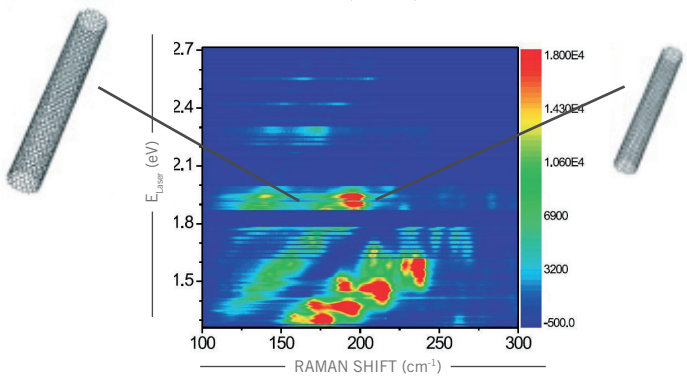
SPECIFICATIONS

SPECTRAL WINDOW	633 to 1700 nm
BANDWIDTH (FWHM)	≤ 0.4 nm @ 633 nm (< 10 cm^{-1})
OPTICAL DENSITY	4
SIGNAL THROUGHPUT	up to 80%
APERTURE	≤ 5 mm
INPUT BEAM DIVERGENCE	≤ 1 mrad

RESONANT RAMAN SPECTROSCOPY SYSTEM

The NIR Resonant Raman Spectroscopy System is ideal for the characterization of carbon nanotubes and suitable for analyzing carotenoids, pigments and dyes in art, archeology and forensics. This system combines a powerful tunable laser source excitation, a laser line tunable filter to suppress fluorescence background, a microscope, a tunable notch filter, a compact spectrometer and a high sensitivity camera. Easily tunable over a large spectral range while keeping high throughput and a narrow bandwidth, this system avoids fastidious alignments while increasing acquisition speed. This RRS system can also be adapted to your laboratory instruments for custom applications.

IDEAL TECHNIQUE TO CHARACTERIZE NANOTUBES
GEOMETRY AND TRANSITION LEVELS
(P. T. ARAUJO ET AL., PRL 98, 067401 (2007))



RAMAN SPECTRA OF CARBON NANOTUBES USING TI:SAPH LASER
AND TUNABLE TOP NOTCH FILTER
(COURTESY OF PROF. R. MARTEL, U. OF MONTREAL)