



Centaur

Scanning Probe-Optical Microspectrometer

Applications:

- ▶ Scanning Probe Microscopy
- ▶ Scanning Confocal Raman Microscopy
- ▶ Near-field Probe Microscopy
- ▶ Tip-Enhanced Raman Spectroscopy (TERS)
- ▶ Tip-Enhanced Fluorescent Spectroscopy (TEFS)

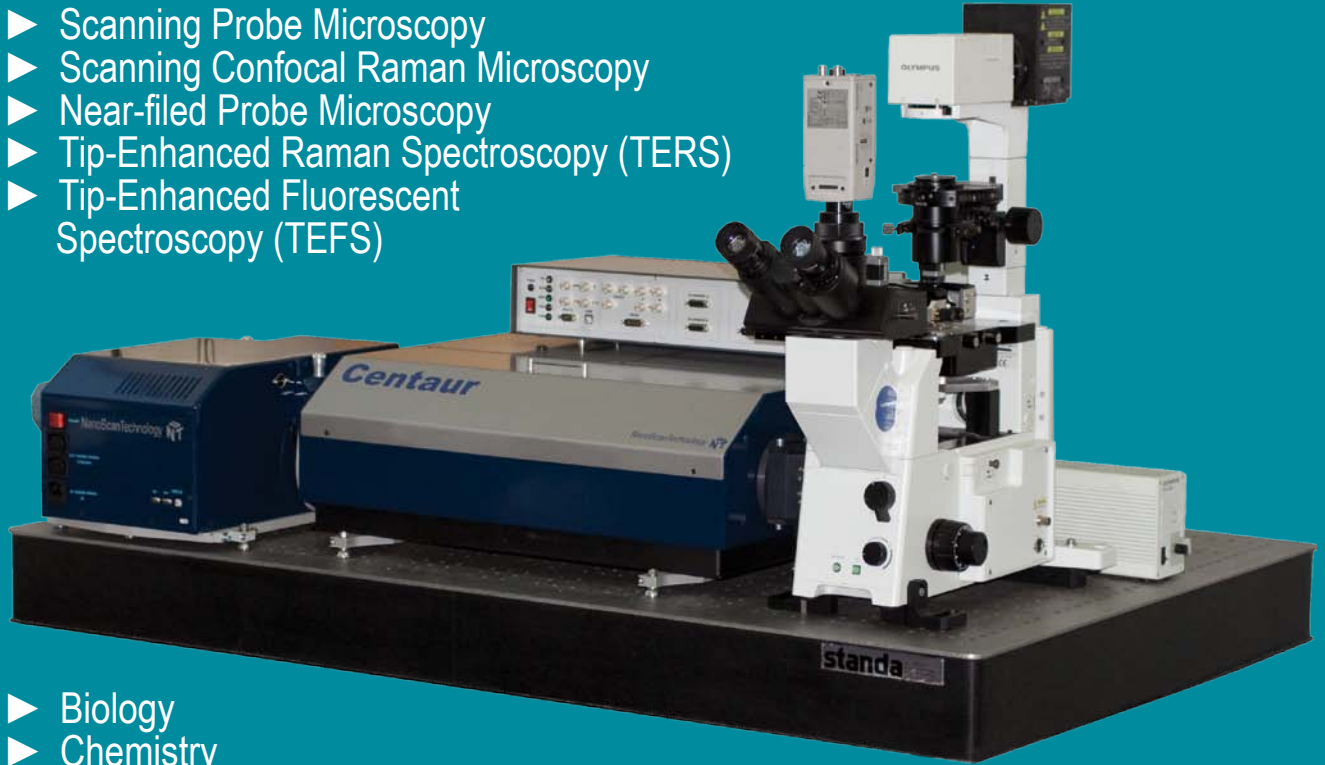
Where to use:

- ▶ Biology
- ▶ Chemistry
- ▶ Physics
- ▶ Interdisciplinary researches:
 - ▼ Nanotechnology
 - ▼ Material Science
 - ▼ Pharmaceuticals
 - ▼ Microelectronics

- ▶ Our R&D team has 10-years experience in the field of scanning probe microscopy
- ▶ The Centaur flexible configuration for diverse applications
- ▶ Unique combination of drive electronics system and the Centaur software will enable you to carry out your experiments in an extremely short time

Accessories:

- ▶ Fluorescent test samples
- ▶ Atomic smooth substrates
- ▶ TERS-probes (tips, cantilevers)
- ▶ DNA-test samples
- ▶ TERS-samples
- ▶ Ultra-sharp cantilevers



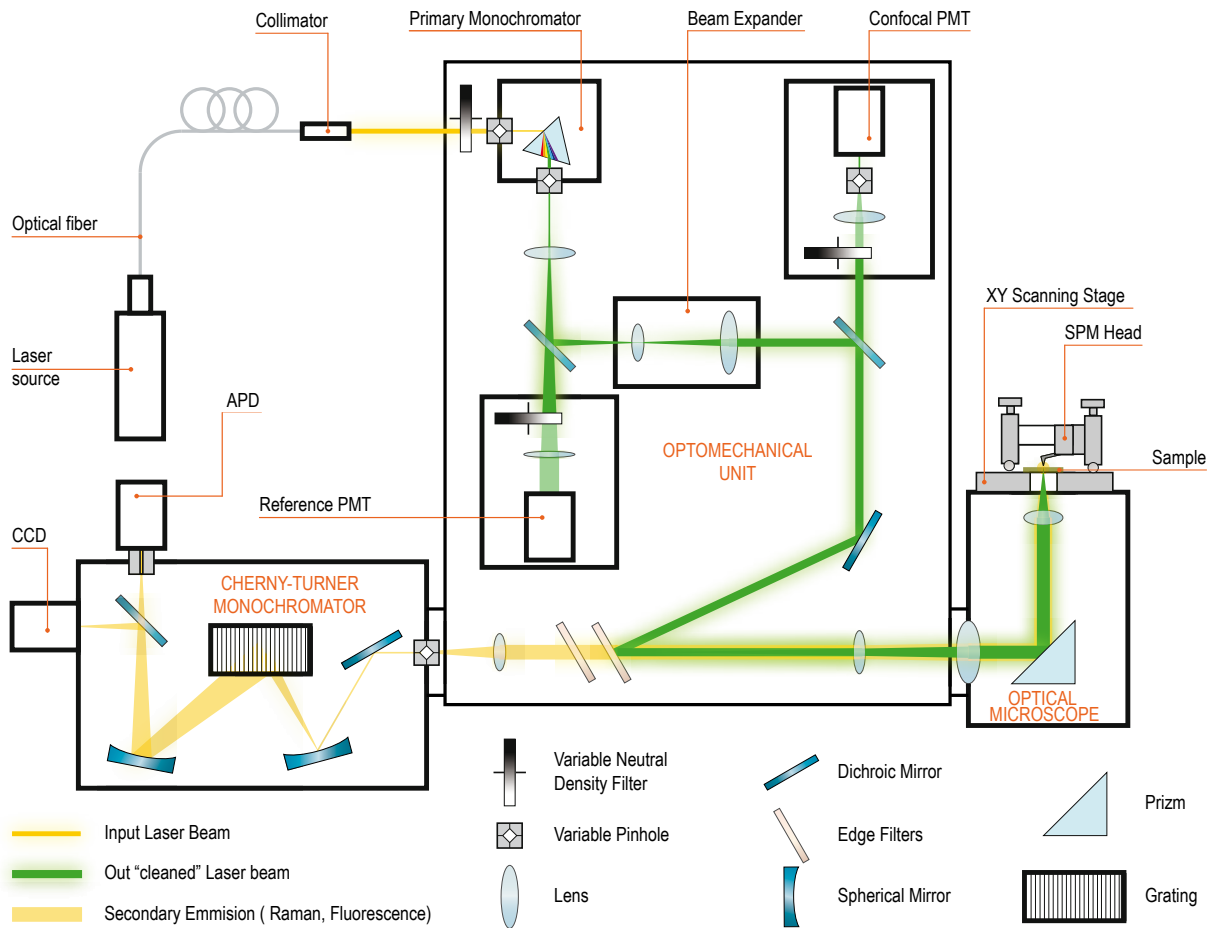
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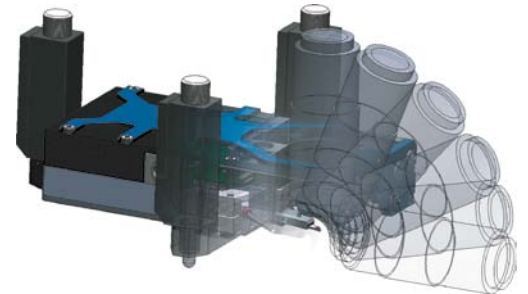
The Centaur features:

The Centaur layout:



Scanning head:

- ▶ XYZ – plane scanner with “closed-loop” system based on three capacitance sensors with no second order scanning plane distortion
- ▶ Convenient optical design of SPM-head allows standard microscopic functions, easy viewing of scanning area of workspace and mounting of additional objective
- ▶ Vertical plane landing of SPM-probe
- ▶ Quick-detachable SPM-probe coupling unit for one-touch changing of SPM procedures: AFM to NSOM for example



Controller:

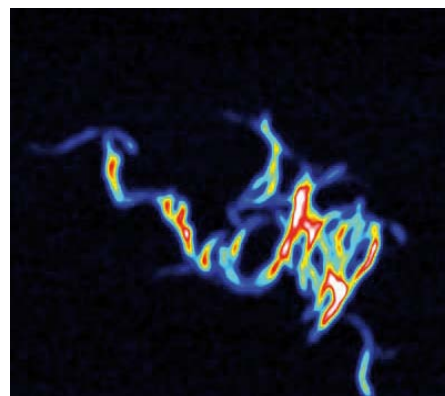
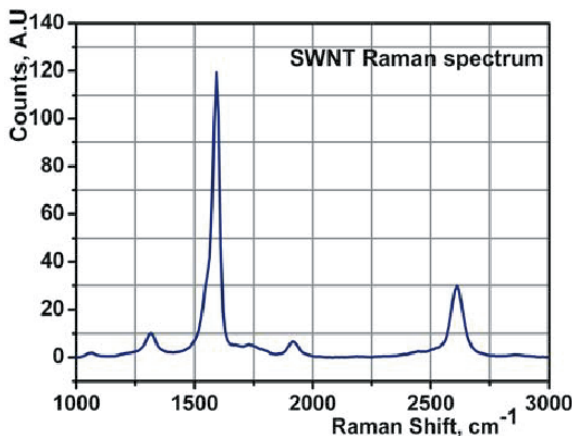
- ▶ Drive digital controller combined USB 2.0 interface
- ▶ Up to 6 channels of piezoelectric scanners with “closed-loop” system control
- ▶ Capability of carrying out long-duration studies using external detectors

Software:

- ▶ Modern cross-platform simultaneous driven software for all the Centaur units
- ▶ Built-in capabilities of the collected data basic processing and exporting into specialized software



Both “sample stage” and “SPM head” enable the carrying out of experiments combining both optical spectral and probe techniques such as TERS/TEFS/FRET – studies.



Typical Raman Spectrum of SWNT (left image) and MicroRaman mapping, 10 μm x 10 μm (right image).