

The Thermo Scientific DXR Nanocarbon Analysis Package is a highly productive and flexible characterization tool for research and routine analysis of carbon nanotubes, graphene, and other carbon nanomaterials.

# Thermo Scientific DXR Nanocarbon Analysis Package

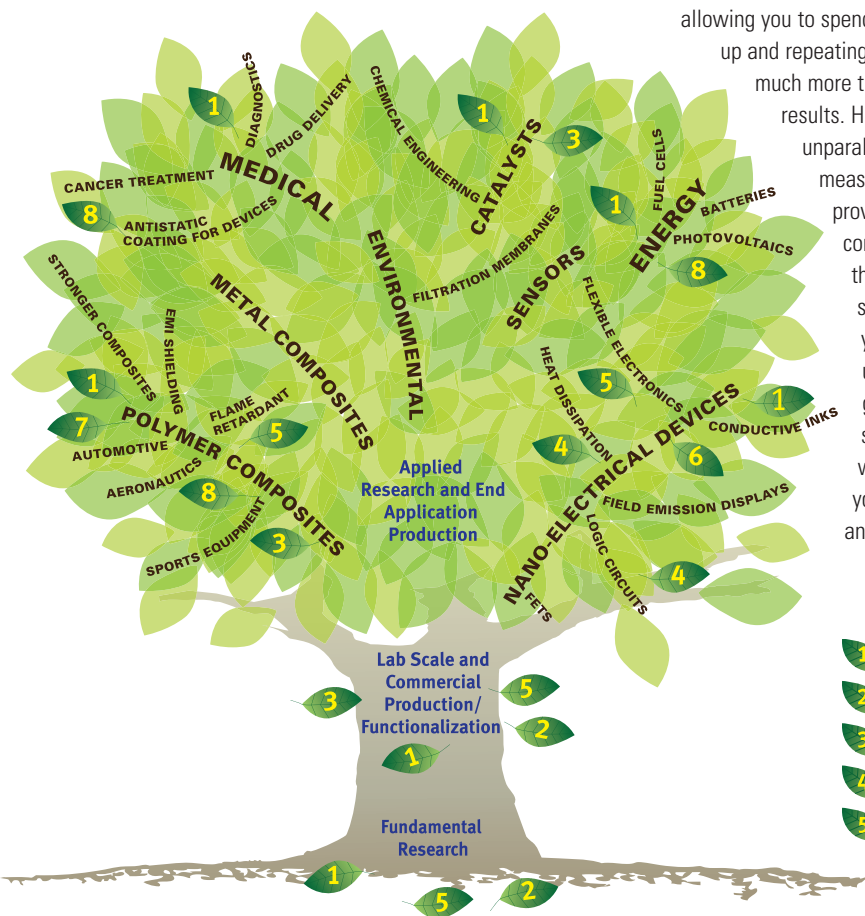
Rapid and reliable characterization

The Thermo Scientific DXR Nanocarbon Analysis Package is a complete package for characterization of carbon nanomaterials. Based on the popular Thermo Scientific DXR Raman platform, the system provides a wealth of information on the molecular structure and morphology of carbon nanomaterials. The instrument is highly productive allowing you to spend far less time setting up and repeating measurements and much more time applying the results. High reproducibility and unparalleled control of critical measurement parameters provides extraordinary confidence in results so that when you see something unexpected your first instinct is to understand what is going on with your sample rather than what went wrong with your measurement. The analysis package is also

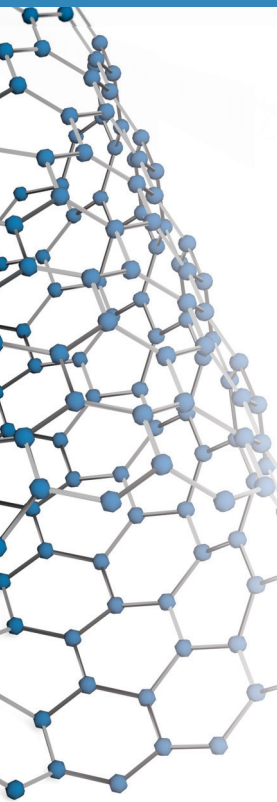
highly flexible, accommodating a wide variety of applications and sample forms. Raman spectroscopy has become an indispensable tool for the characterization of carbon nanomaterials and the DXR™ Nanocarbon Analysis Package aims to provide you with all of the information that Raman has to offer in one of the most productive tools you will have in your lab.

## Who should use the DXR Nanocarbon Analysis Package

The DXR Nanocarbon Analysis Package has countless specific applications as it can be used to elucidate slight changes in molecular structure which makes it useful in all areas of carbon nanomaterials ranging from fundamental research to nanomaterial production and functionalization through applied research on end-applications and end-application production. The closer you look at where carbon nanomaterial research is being done today the more ways you find that the DXR Nanocarbon Analysis Package adds value.



- 1 Quality/Purity Screening
- 2 Diameter Measurement and Distribution
- 3 Verifying Processing Steps Did Not Damage Tubes
- 4 Graphene Thickness
- 5 Defect Detection
- 6 Distinguishing Metallic and Semiconducting Nanotubes
- 7 Quantifying Nanomaterials in Composites
- 8 Reverse Engineering



## Productivity Enhancing

Thermo Fisher Scientific realizes that there is more to your work than just collecting data. The DXR Nanocarbon Analysis Package is designed to guide you through data collection as quickly as possible so that you have more time to focus on the results and your real interests. Bolstered by the innovation behind five productivity oriented patents, the system includes intelligent software to optimize many measurement parameters, and hardware which has been designed so that you can just load a sample and go. Experiments which may take hours to set up on other instruments can often be completed in just minutes with the DXR Nanocarbon Analysis Package.

## Confidence

Results are not of much value if you do not have sufficient confidence to believe them. The DXR Nanocarbon Analysis Package incorporates rigorous automated calibration and alignment routines, unprecedented control of laser power, and sophisticated quality checks that are applied to every spectrum collected to insure accurate and reproducible results that you can have complete confidence in.

## Performance

Many carbon nanomaterial experiments and samples can be quite challenging and the DXR Nanocarbon Analysis Package is up to the challenge. The system includes an advanced targeting mechanism, offers excellent spatial resolution, and excellent sensitivity even with the weak signals that are often generated in these experiments.

## Adaptability

The world of nanomaterials engineering is evolving at a fast pace and while you know what your needs are today, it can be hard to say what new challenges are just around the corner. The DXR Nanocarbon Analysis Package has been designed with this in mind. The system is easily upgraded in the field and most options and upgrades are easily installable by the user. It is even possible to add new excitation lasers, gratings, and Rayleigh filters without the need for a single tool. Components can be shared between instruments so if you have multiple instruments in a facility, an upgrade may be as simple as walking down the hallway to borrow the components.

## Complete Packages

The DXR Nanocarbon Analysis Packages are complete systems configured with a selection of options that has been chosen to optimize results with carbon nanomaterials. The systems can be configured with additional options if so desired, but are completely functional as configured with only the addition of a computer and appropriate power cords.

## System Configurations

### DXR Nanocarbon Microanalysis Package

A complete system configured for microcharacterization, consists of:

- A DXR Raman microscope
- Class 1 laser safety enclosure
- Trinocular viewer with video imaging
- Brightfield/Darkfield illumination
- 10x and 50x objectives
- 633 nm excitation laser kit
- Motorized mapping stage
- Thermo Scientific OMNIC data collection and analysis software
- Thermo Scientific Atlas mapping software
- OMNIC™ Macros\Basic software for automating routine operations

### DXR Nanocarbon Analysis Package

A complete system configured for bulk materials characterization, consists of:

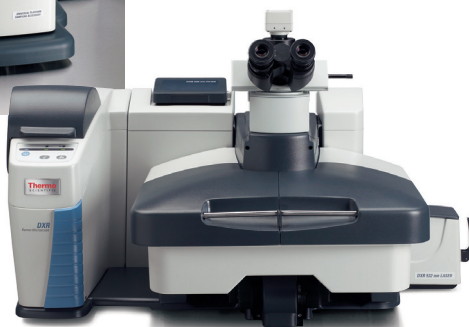
- A DXR SmartRaman spectrometer
- DXR Universal Platform Sampling Accessory
- Class 1 laser safety enclosure
- 532 nm excitation laser kit
- OMNIC data collection and analysis software
- OMNIC Macros\Basic software for automating routine operations

## Options Include

- Additional excitation lasers
- Wide range of microscope visible viewing accessories
- Wide range of macro sampling accessories
- Heated and cooled sampling cells
- Electrochemical cells



**Thermo Scientific DXR SmartRaman and DXR Raman Microscope**



[www.thermoscientific.com](http://www.thermoscientific.com)



*The DXR Raman microscope is a Class IIIb laser-safe product, unless installed with the Class I Laser Safety Enclosure. Installation of a fiber optic probe launcher and fiber probe will convert all microscopes to Class IIIb laser-safe, even with the Laser Safety Enclosure installed. The DXR SmartRaman spectrometer is a Class I laser product, unless it is used with the fiber launch option, in which case it is classified as Class IIIb laser-safe.*

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