

Domestic Raman Spectrometer



Article Overview

A domestic Raman spectrometer is a compact or portable instrument designed for chemical analysis, educational use, and quality control, available both as commercial kits and DIY systems.

Overview

A Raman spectrometer is an analytical device that uses laser light to probe molecular vibrations, producing a unique spectral fingerprint of a substance without destroying the sample. Domestic versions are designed for home, educational, or small-lab use, often emphasizing portability, affordability, and ease of operation. They are widely applied in analytical chemistry, plastics identification, education, and quality control.

Components

Typical domestic Raman spectrometers include three main components :

- **Laser Source** – Provides monochromatic light to excite molecular vibrations. Common wavelengths are in the visible or near-infrared range.
- **Detector/Spectrometer** – Captures the scattered light and converts it into a spectrum. Modern domestic systems often use CCD detectors with notch or edge filters to reject Rayleigh scattering.
- **Sample Interface/Probe** – Focuses the laser on the sample and collects scattered light. Portable systems may use fiber optics or microscope objectives for precise targeting.

Functionality

Article Content

Raman Spectroscopy Instrument Pricing: A Comprehensive Guide

Raman spectroscopy has become an indispensable tool across scientific disciplines, from pharmaceuticals and

Raman Spectrometers

Raman Spectrometers Cora: Compact Raman Analyzer The extensive Raman spectrometer family from Anton Paar offers the right

Raman System DIY – PhysicsOpenLab

Raman scattering has very low intensity, in general it will therefore be necessary to use excitation lasers with high

Raman Spectroscopy

As a solution provider, we offer a full spectrum of Raman technologies and expertise — from high

Handheld Raman Spectrometers, Portable Raman | Agilent

Discover Handheld, Portable Raman Spectrometers that “See” Through Opaque Containers The development of handheld Raman

Raman-Spektrometer | Handheld & Labor

Handheld- und Labor-Raman-Analysatoren sowie SERS-Analysatoren (Surface-enhanced Raman Scattering) zur Materialprüfung

Raman Modular Spectrometers

Designed specifically for Raman spectroscopy, these spectrometers offer the highest performance for the most sensitive

Handheld Raman Spectrometers, Portable Raman | Agilent

What is Handheld Raman Spectroscopy? Handheld Raman spectrometers combine the long-established principles of Raman

Raman Spectrometers | Material Identification & Chemical Analysis

Explore StellarNet Raman spectrometers for material identification, chemical analysis, quality control, research, and

Raman spectroscopy

Raman spectroscopy relies upon inelastic scattering of photons, known as Raman scattering. A source of

DIY Raman – Open Hardware Raman Spectrometer

DIYRaman aims to make Raman spectroscopy replicable, affordable, and fully documented. Raman spectroscopy

Raman spectroscopy | Hamamatsu Photonics

Raman spectroscopy has a number of significant advantages over other techniques.

THE PULSAR Engineering

Because I was deeply convinced of the great potential of a full DIY Raman spectrometer

Raman Spectrometers

DXR3 Flex Raman Spectrometer The Thermo Scientific™ DXR3 Flex Raman Spectrometer is a research-grade Raman

Home Page | Lightnovo

The worlds smallest research grade Raman spectrometer with on integrated, patented, reference channel.

miniRamanu2028Spectrometer Lab | Lightnovo

The system continuously adjusts the Raman shift and intensity of the sample spectrum, delivering fast,

Raman spectroscopy

Precision engineered Raman spectrometers for fast and accurate chemical analysis. Raman spectroscopy

Raman-Spektroskopie

Wir bieten ein alle Raman-Technologien – von hochauflösender Mikroskopie und flexiblen Tischgeräten bis

Fabricating a Low-Cost Raman Spectrometer to

Herein, we describe an easy and cost-effective method to make a fully integrated portable

Raman Spectroscopy, Raman Spectrometers | Agilent

Raman spectrometers using spatially offset Raman spectroscopy (SORS) and transmission Raman spectroscopy (TRS) for aviation

OpenRAMAN

Bringing Raman Spectroscopy to your Lab OpenRAMAN is a paradigm shift in analytical chemistry. We

Handheld Spectrometer, Portable SORS Raman

Resolve Handheld Spectrometer The Agilent Resolve handheld spectrometer is a cutting-edge analytical

i-Raman Plus

The i-Raman Plus 785S is a high-resolution, research-grade Raman spectrometer designed for precision and versatility in a

Raman Spectrometers

Our Raman spectrometers offer flexible, high-performance solutions for precise chemical identification

Raman Spectroscopy

How Does Raman Spectroscopy Work? A sample is illuminated with a laser beam. Most of the light is Rayleigh scattering, but a

Raman Imaging and Spectrometers

Discover our Raman spectroscopy solutions for analytical measurements, research Raman, UV Raman, QC/QA and industrial

Raman spectroscopic systems

Prized for their ability to perform chemical and composition analysis with

What is Raman Spectroscopy?

Raman spectroscopy can be used for microscopic analysis, with a spatial resolution in the order of 0.5-1 μm . Such analysis is

Raman spectroscopy

Raman Rxn4 analyzer: Rugged, reliable Raman analyzer ensuring 24/7 process monitoring and quality control Raman fiber optic

Contact Us

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