

Which two types of monochromators are used for spectrophotometry



AI Overview

The two main types of monochromators used in spectrophotometry are prism monochromators and grating monochromators.

Prism Monochromators

Prism monochromators use an optical prism to refract light into its component wavelengths. The refraction angle depends on the wavelength because the refractive index of the prism material varies with wavelength, causing white light to spread into a spectrum of colors. A control mechanism allows the desired wavelength to pass through the exit slit to the sample. Prism monochromators are simple in design and are often used in instruments where moderate resolution is sufficient for measurements .

Grating Monochromators

Grating monochromators employ a diffraction grating, which is a flat surface with numerous parallel grooves, to separate light into its component wavelengths. Light striking the grating is diffracted at angles that depend on the wavelength, allowing precise selection of a narrow wavelength band. Grating monochromators are widely used in modern spectrophotometers because they provide higher resolution and better wavelength accuracy compared to prism monochromators .

Applications in Spectrophotometry...

Article Content

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Monochromator

Monochromator Applications Monochromators are commonly used in measurement devices such as spectrometers and microplate

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The Role of Monochromators in Spectroscopy

Monochromators allow scientists and engineers to explore the hidden properties of matter, make groundbreaking

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Monochromators

Two monochromators that essentially satisfy these requirements are the Seya-Namioka and the near-normal-incidence type. The

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What Is a Monochromator? Types, Function, and Spectrographs ...

Monochromators are an essential part of many spectrometers, important for a range of applications. This article describes what a

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Monochromators in Spectroscopy: Selecting Specific Wavelengths for ...

Some advanced microplate readers used in high-throughput food testing labs use quadruple monochromator

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What Is a Monochromator? Types, Function, and Spectrographs ...

Optical instruments that are designed to make absorbance measurements in colorimetric analyses commonly have a

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Monochromators

Monochromators are widely used in spectrophotometers for material characterization and in scanning

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Characteristics of Single and Double Monochromator UV-VIS ...

Two types of UV-VIS Spectrophotometers are available: the single monochromator type and the double monochromator type. As the

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Monochromators / Imaging Spectrograph | Labcompare

Monochromator / Imaging Spectrograph A monochromator is a device used to produce monochromatic light in order to determine the

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Spectrophotometric Instruments | PDF

This document describes the components and operation of a spectrophotometer. The major components are a light source,

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Monochromators

Two types of monochromator may be distinguished based on the difference being in the mosaic spread of the crystals. Two

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What is a Monochromator?

Monochromators are ideal for spectrophotometry, spectroscopy, holography, and tunable lasers applications. In

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What are the commonly used wavelength selectors in the ...

Filters are essentially colored pieces of glass that are used to isolate specific wavelength ranges. However, they're not

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Monochromator

Two monochromators are used in many fluorometers; one monochromator is used to select the excitation wavelength and a second

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What is the function of the monochromator?

Because of this, gratings are commonly used in monochromators of spectrometers. When there is a need to separate light of

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Monochromator: Fundamental Principle and Methods

There are two types of monochromators based on the diffraction device used: grating monochromators and prism monochromators.

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Monochromator: Fundamental Principle and Methods

Types of Monochromators There are two types of monochromators based on the diffraction device used: grating monochromators

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What are the commonly used wavelength selectors in the ...

A monochromator is a type of wavelength selector that operates by scanning through different wavelengths. Though

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What is a monochromator and how does it work in optical spectroscopy?

Applications of Monochromators in Spectroscopy Monochromators play a crucial role in various types of spectroscopy,

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FAASICPMS Section 2.2.8

2.2.8 Monochromators As discussed in Chapter 1, a monochromator is a device that is used to separate wavelengths of light through

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Theory and Principles of Monochromators, Spectrometers and

Thus we may broadly classify monochromators into two types viz., vacuum ultraviolet instruments for wavelengths below 2000 Å

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7.3: Wavelength Selectors

Monochromators are classified as either fixed-wavelength or scanning. In a fixed-wavelength monochromator we

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Monochromators & Spectrographs — Comprehensive Guide

Monochromators and spectrographs are optical instruments that separate polychromatic light into its constituent wavelengths using a

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Monochromator | Springer Nature Link

It is typically used in a spectrometer (or spectroradiometer) or a spectrophotometer. There are different types of

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Monochromators : Shimadzu (Europe)

This is the method normally used when the monochromator is used alone. A monochromator is incorporated into fluorescence

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Monochromators in Spectroscopy: Selecting Specific Wavelengths for ...

These instruments actually contain two double monochromators – one for excitation light and another for emission

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Instrumentation of a UV-Visible Spectrophotometer

The principle of measurement for the UV Vis Spectrophotometer, is relatively straightforward and consists of a light source, a

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Monochromators : Shimadzu (Europe)

The Czerny-Turner mount uses two symmetrically arranged spherical mirrors as the collimating mirror and camera mirror, as shown

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