

How to scan with a spectrometer



Overview

Start by opening the spectrometer's control software on a connected computer. The software allows you to configure parameters, such as the wavelength range to be scanned. Before introducing your sample, perform a calibration or “zeroing” step using a blank. A spectrometer is an analytical tool used across various scientific disciplines to measure how a substance interacts with light. Specifically, a UV-Visible Spectrometer measures the absorption or transmission of light in the ultraviolet (UV) and visible (Vis) regions of the electromagnetic spectrum. Spectrophotometry is an experimental technique that is used to measure the concentration of solutes in a specific solution by calculating the amount of light absorbed by those solutes. This analytical capability makes spectrometers valuable tools across many fields. Learn how to easily perform the different measurement methods of UV/VIS Excellence Spectrophotometers from METTLER TOLEDO, such as: Learn also how to download and install more than 80 ready-to-use methods from our In this video, you will learn how to determine the color of a sample with our UV/VIS. In this video, you will learn how to measure a full spectrum with an array of spectrophotometers from METTLER TOLEDO.



Article Content

Hot

Imaging spectrometer

Imaging spectrometers are used specifically for the purpose of measuring the spectral content of light and electromagnetic light. The spectral data gathered is

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Infrared spectroscopy

Infrared spectroscopy (IR spectroscopy or vibrational spectroscopy) is the measurement of the interaction of infrared radiation with matter by absorption,

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How Does a Spectrometer Work?

Follow the journey photons take as they encounter components within the spectrometer optical bench, undergoing various processes before becoming a spectrum.

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Spectrometers – Visual Encyclopedia of Chemical

Spectrometers use light wavelengths to investigate the chemical composition of a sample. Atomic spectrometers use an analytical method by which one or several

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How-to Perform Scan Measurements with UV/VIS Excellence ...

In this video, you will learn how to measure a full spectrum with an array of spectrophotometers from METTLER TOLEDO. A full spectrum is very useful for identifying the wavelength of a peak...

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How to Do Spectrophotometric Analysis: 13 Steps (with Pictures)

Spectrophotometry is an experimental technique that is used to measure the concentration of solutes in a specific solution by calculating the amount of light absorbed by those solutes. This technique is powerful because certain compounds...

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Scanning Spectrophotometer: Recording a Spectrum

Close the lid, and use the computer or keyboard controls on the spectrophotometer to begin scanning the wavelengths and recording absorbance measurements. Once the instrument is finished

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How to Do Spectrophotometric Analysis: 13 Steps (with Pictures)

This guide makes spectroscopy simple by showing you how to use teaching tools and real experiments. You will see that teaching with a

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Spectrophotometers – scanning, single-beam, dual

Spectrophotometers are instruments for measuring the wavelength-dependent transmittance or reflectance of solutions or solid objects.

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How to Use a Spectrometer: A Step-by-Step Guide

With the sample in place and the compartment lid closed, the user initiates the scan or measurement via the software interface. The instrument automatically directs the selected light

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A Beginner's Guide to Using a Spectrophotometer

A spectrophotometer lets you measure how much light a sample absorbs at a certain wavelength. When you use spectrophotometry, you gain

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What is an MRI spectroscopy scan? Magnetic resonance imaging (MRI) uses radio waves and strong magnets to take pictures of the organs and tissues of the body. An MRI spectroscopy scan also

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Mastering Spectrophotometry: Step-by-Step

Learn how to use spectrophotometers and UV spectrometers effectively with our detailed guide. Understand the role

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Spectrometer

Spectrometer An XPS spectrometer A spectrometer (/ spɛk'trɒmɪtər /) is a scientific instrument used to separate and measure spectral components of a physical

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Optical Spectrometers introduction

Learn everything about optical spectroscopy and how to configure the right settings for optimal use for your usecase. Read more.

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The Basics of Spectrophotometry

Did you know you can measure color? We will discuss the basics of colorimetry and take a quick look at what a spectrophotometer is & instrument options.

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Spectrophotometry

Spectrophotometry is a branch of electromagnetic spectroscopy concerned with the quantitative measurement of the reflection or transmission properties of a material

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How an FTIR Spectrometer Operates

The performance of the second generation IR spectrometer is much better compared with IR spectrometers with prism monochrometer, But there are

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Spectrometer Basics

Spectroscopy is a quiet revolution that has substantially changed and affected the way we interact with and better understand our modern world. This article is a

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What Is A Spectrometer?

A spectrometer is a common tool used by various scientists to determine information about an object or substances through the analysis of its

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Essential Basic Knowledge for Using a Spectrophotometer

Although using a spectrophotometer is straightforward, many may not be familiar with its principles and some basic knowledge. Today, I have compiled some information to share with

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How to Use a Spectrometer From Setup to Data Analysis

Once the spectrometer has warmed up and the sample is prepared, begin the measurement process. Start by opening the spectrometer's control software on a connected computer. The software allows

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Spectrophotometers – scanning, single-beam, dual

Figure 1: Basic setup of a scanning single-beam spectrophotometer. Only a small fraction of the light from the lamp gets to the sample. At any time, only a small

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Spectrometers and Signal Processing Basics

A spectrometer measures intensity of electromagnetic radiation at different frequencies / wavelengths. In practical applications, spectrometers have a finite frequency / wavelength resolution and a finite range.

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UV vis Spectroscopy – How to Use a Spectrophotometer

In this article, we will show you how to use a UV visible spectrophotometer. Instrument: Shimadzu UV-1800 UV Spectrophotometer.

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UV/VIS Excellence Spectrophotometers | How-to Videos

How to Perform Scan Measurements with UV/VIS Excellence Spectrophotometers. In this video, you will learn how to measure a full spectrum with our array spectrophotometers. A full spectrum is very

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Spectroscopy

Spectroscopy, primarily in the electromagnetic spectrum, is a fundamental exploratory tool in the fields of astronomy, chemistry, materials science, and

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Fourier Transform Infrared (FTIR) Spectroscopy Explained

Learn how FTIR spectroscopy works, from infrared absorption and spectrum interpretation to real-world uses in forensics and environmental monitoring.

May 15, 2026

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