DIY Ultraviolet Spectrometer



Overview

Want to analyze light like a scientist?

 Here's the quick breakdown: **Gather** basic materials (CD/DVD, cardboard, lens, light source). **Assemble** a slit, diffraction grating, and collimating lens. After a bit of research, I discovered an instrument called an optical spectrometer that is designed to measure the properties of light by separating it into its component colours. First you'll want to gather all your supplies! To make the body of the UV-VIS: Now that you have made the basic body of the instrument, it's time to add. Spectrometry is an analysis technique that enables the identification of material chemical composition, regardless if they are solid or liquid, using the absorption and emission of an incoherent light that hits the surface. It's used in every chemical and biological laboratory, but it can be. The Near InfraRed (NIR) spectroscopy is used in milk and bio constituent analysis and in many printing and production work to find the accurate range of color. The electromagnetic spectrum range covered in NIR spectroscopy is 780-2526nm. The spectrometers are also quite expensive for this range.



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Article Content

Dec 07, 2025

How to Make DIY Spectrometer | Optical spectrum analyzer | Light ...

This spectrum analyzer can analyze light, including infrared (IR) and ultraviolet (UV) light. It uses DVD Disk that works like a diffraction grating and splits light into the rainbow, the software ...

Jul 04, 2025

Home-made spectrometer (new approach)

Everything you need for your next project. #Spectrometer #Arduino #3dprinted In this video, I show the building and operation of an experimental 3-D-printed spectrometer.

Sep 11, 2025

DIY Near-Infrared Spectrometer

Traditional spectrometers, like the ones employed in the James Webb Telescope, are designed to analyze the composition of distant celestial bodies by studying

May 29, 2026

DIY UV-VIS Arduino UNO : 10 Steps

The following procedure will teach you how to create a DIY UV-VIS spectrometer from supplies at home combined with an Arduino UNO microprocessor. First you''ll want to gather all your supplies!

Jun 19, 2026

DIY Spectrophotometer

DIY Spectrophotometer There was some interest at the Maker Faire for detailed instructions on how to build the spectrometer. We are working on writing them up, and we will post them here when ready.

Oct 13, 2025

Track Your UV Exposure In Real Time With This DIY Meter

While editing an article about skin cancer early in my career, I learned many not-so-cheerful facts about how ultraviolet light causes molecular

Oct 02, 2025

LET''S BUILD A SPECTROMETER

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Fig.8 CONCLUSION The device described in this article is a low-cost solution to create a portable version of a spectrometer with which it''s possible to

Apr 25, 2026

Spectrometer Using Arduino : 4 Steps

Spectrometer Using Arduino: The light we observe, for example the sun''s light, consists of light of various wavelengths. Also, substances have the property of

Jan 19, 2026

DIY Low Cost Spectrometer : 10 Steps (with Pictures)

DIY Low Cost Spectrometer: Being a final-year undergraduate student majoring in physics, I believe that labs and practical experiments are just as important as the

Feb 08, 2026

LET''S BUILD A SPECTROMETER

Schnell ist also die Idee geboren, daraus ein DIY Bastelprojekt zu machen, um mir anzeigen zu lassen, wie intensiv die

Sep 05, 2025

Homemade Optical Spectrometer – Steve the Engineer

Designing a 3D-printed optical spectrometer using a diffraction grating and open-source software. I recently worked on an interesting project where I needed to figure out how a certain material absorbs

Jul 04, 2025

How to Make a Simple DIY Spectrometer (In the Greenhouse 22)

In this video we learn how to use common materials to make a very basic spectrophotometer.

Apr 29, 2026

A Simple DIY Spectrophotometer

A Simple DIY Spectrophotometer: What''s all this? This instructable will explain how to build a fairly basic but working spectrophotometer out of easily sourceable

Mar 01, 2026

Build your own spectrophotometer | Feature | RSC

Figure 5 shows a typical layout of a ''DIY'' spectrophotometer, where the spectrum produced by the grating is projected onto graph paper to produce a

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Dec 01, 2025

The Basics of UV-Vis Spectroscopy

Spectroscopy allows the study of how matter interacts with or emits electromagnetic radiation. There are different types of spectroscopy, depending on the wavelength range that is being measured. UV-Vis

Jun 29, 2025

A DIY Fourier Transform Spectrometer

To get around these issues, built a Fourier transform spectrometer (translated), which operates on the principle of interference to

Mar 03, 2026

MJAS Vol 27 No 3 (2023)

A device used for analysis called an Ultraviolet-visible (UV-Vis) light spectrophotometer examines the analyte absorbances of light, at specific wavelengths where different materials absorb and reflect

Nov 26, 2025

Build an Arduino UV Index Meter | DroneBot Workshop

UV Light has both positive and negative effects on human health. In this detailed article I''ll show you how to safely work with UV light and how to

Feb 21, 2026

How To Make A Diy Spectrometer

This instructable teaches you how to build a low-cost spectrometer using simple materials, such as a 100 W light bulb, a light-dependent resistor, a

Nov 30, 2025

Arduino Spectrum: Building a DIY Spectrophotometer

Constructing a spectrophotometer based on Arduino offers a valuable learning opportunity that enhances comprehension of light properties, matter

Dec 01, 2025

DIY Spectrometer) Explore the Unknown ->

DIY Spectrometer) Explore the Unknown ->: Hey Guys! A Spectrometer is useful for detecting impurities in water and in other substances, or even just telling us what

Nov 30, 2025

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Homemade Spectrometer

In this chapter I will show you how to assemble a filter spectrometer, as well as the first tests with the six colors that the AS7262 sensor detects.

Dec 21, 2025

DIY Spectrometer

A spectrometer takes light from some source and splits it into its different wavelengths, creating a rainbow effect you see with a prism. Dot Physics

Jul 10, 2025

Build Your Own Spectrometer: A Step-by-Step Science Project Guide ...

Build Your Own Spectrometer: A Step-by-Step Science Project Guide □□ **TL;DR: Build Your Own Spectrometer in 5 Steps** Want to analyze light like a scientist?...

Dec 05, 2025

DIY Spectroscopy Meter for Color and UV Radiation

This is how you can build your own UV-Vis Spectrometer with the help of Raspberry Pi at home. If you face any issues while making this project, please

Contact Us

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