

Principle of Varistor Spectrometer



Article Overview

A varistor spectrometer operates on the principle of light dispersion and detection, with varistors providing voltage-dependent protection to sensitive electronic components.

Spectrometer Principle

A spectrometer is an optical instrument designed to measure light intensity across different wavelengths. The core principle involves:

- **Light Source:** Emits radiation, often from tungsten or deuterium lamps for visible and UV ranges .
- **Collimator:** Converts divergent light rays into parallel beams for accurate wavelength separation .
- **Monochromator:** Uses a prism or diffraction grating to disperse light into its constituent wavelengths .
- **Detector:** Measures the intensity of light at each wavelength, often using a charge-coupled device (CCD) for high sensitivity and dynamic range . The spectrometer produces a spectrum showing absorbance, transmission, or reflectance of a sample, allowing analysis of chemical composition or optical properties .

Varistor Function

A varistor is a voltage-dependent resistor whose resistance decreases sharply when the applied voltage exceeds a threshold . Key characteristics include:...

Article Content

Apr 06, 2026

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

Sep 18, 2025

Varistor: The Invisible Shield in Electronic Systems

In contrast, a varistor operates in parallel within a circuit, exhibiting variable resistance that responds to changes in voltage levels.

Jul 05, 2026

Varistors Introduction

Varistors Introduction GENERAL Varistors provide reliable and economical protection against high voltage transients and surges

Dec 04, 2025

The Basics of Varistors: how they work, their role, applications, and ...

This article is an introduction to the basics of varistors, including their working principle, role, application and selection

Feb 12, 2026

Spectrometer

Spectrometer is a broad term often used to describe instruments that measure a continuous variable of a phenomenon where the

Jul 16, 2026

Varistor Explained: How It Works and Where to Use It

Learn what varistors are, how they work and where they are used to protect circuits from voltage surges in modern

Nov 27, 2025

What is a Varistor? Definition, construction, operation ...

A varistor is a 2 terminal semiconductor device that protects the electrical and electronic devices from overvoltage transients. The

Dec 10, 2025

Varistor: Definition, Function, Working Principle, and Testing Guide

Most modern varistors are based on zinc oxide (ZnO), a II-VI oxide semiconductor composed of divalent zinc (Zn)

Nov 29, 2025

Varistor: Definition, Function, Working and Testing

Varistors operate based on their distinctive voltage-dependent resistance characteristics: Normal Operation Mode:

Aug 12, 2025

Varistors Basics

Choosing the correct varistor presupposes a thorough determination of working voltage, including tolerances,

May 01, 2026

3 Optical spectrometry: principles and instrumentation

3.1 Principles Optical spectrometry is the technique of measuring the intensity of absorption or emission of radiation in the ultraviolet

Apr 11, 2026

Varistor: The Invisible Shield in Electronic Systems

Its main job is to stop transient surge voltage. When the voltage goes over a set limit, the varistor quickly turns into a low-resistance

Aug 14, 2025

What is Varistor : Working Principle, Construction & Its Applications

This Article Discusses an Overview of What is a Varistor, Working Principle, Advantages, Disadvantages and Its

Mar 27, 2026

How varistors work in circuits | Description, Example & Application

Learn how varistors work in electronic circuits, protecting devices from overvoltage or surges. Discover their

Aug 20, 2025

Varistors Introduction

Varistors are manufactured from a non-homogeneous material, giving a rectifying action at the contact points of two particles. Many

Jun 18, 2026

Varistor | Working Principle | Types | Metal Oxide Varistor

Varistor: Varistor is used to protect the semiconductor against over voltage. At the same time, it plays major role in high voltage

May 22, 2026

Varistors

Varistors are devices which have a high electrical resistance for low applied voltages, which decreases as the voltage is raised.

May 23, 2026

Varistor principle, parameters, and selection method

"A varistor is a resistor whose resistance value changes with voltage within a certain range of current and voltage, or

Mar 06, 2026

Spectroscopy: Introduction, Principles, Types and Applications

Introduction Spectroscopy is a scientific technique used to study the interaction between matter and electromagnetic

Apr 19, 2026

Introduction to spectroscopy | Resource | RSC Education

Get back to basics with this primer on the principles of spectroscopic techniques, including infrared (IR), ultraviolet-visible (UV-vis)

May 04, 2026

Principles and applications of EPR spectroscopy in the chemical ...

Electron paramagnetic resonance (EPR) spectroscopy detects unpaired electrons and provides detailed information on

Oct 18, 2025

What is UV-Vis Spectroscopy? Principles Overview | Agilent

UV-Vis spectroscopy overview covering light absorption principles, spectrophotometer components, measurement techniques, and

Mar 26, 2026

Varistors

Varistors are widely used as surge arresters in electrical and electronic applications. Their usage limits overvoltage disorders caused

Feb 15, 2026

Varistor Tutorial | Next.gr Electronics

Varistor vs. TVS Diode TVS diodes operate on the principle of avalanche breakdown, providing precise clamping voltages (as low as

Jul 14, 2026

Varistor: Definition, Function, Working and Testing

Varistor acts like a guardian for electronic circuits, stepping in when voltage spikes threaten sensitive components. Its

Aug 03, 2025

The Principles of Varistor Selection

the principles of varistor selection introduction A varistor is an electronic component used to suppress transient voltages to protect

Jan 22, 2026

NMR Spectroscopy

Nuclear Magnetic Resonance (NMR) Spectroscopy. NMR spectroscopy is a spectroscopic technique to observe local

Aug 08, 2025

4.7: NMR Spectroscopy

Nuclear magnetic resonance spectroscopy (NMR) is a widely used and powerful method that takes advantage of the

Contact Us

For more information, pricing, or custom solutions, please contact us:

Website: <https://khanimamboguesthouse.co.za>

Email: sales@khanimamboguesthouse.co.za

Phone: +27 64 852 1973

Address: Unit 7, Greenway Business Park, 8 Innovation Drive, Centurion, 0157, South Africa

This document is for informational purposes only. Specifications subject to change without notice.

