Prototype of Spectrometer

Overview

Early photoelectric cells and, later, Charge-Coupled Devices (CCDs) began to replace film, allowing for direct, accurate, and quantitative measurement of light intensity across the spectrum. The earliest picture of a spectrometer I have found is this cut from Hauksbee and Whiston's Course of Lectures, ca. There was much. His instrument employed a small aperture to define a beam of light, a lens to collimate it, a glass prism to disperse it, and a screen to display the resulting spectrum. This first spectroscope was nearly in modern form.

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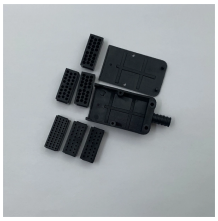
Prototype of Spectrometer

The spectrometer was made by Max Kohl of Chemnitz, Germany, and came equipped with a 14438 line per inch diffraction grating ruled by Rowland of Johns Hopkins University on a blank figured by ...

The design concept and fabrication and alignment methods as well as the results of evaluations of the proposed spectrometer are described in detail.



Modern spectroscopy in the Western world started in the 17th century. New designs in optics, specifically prisms, enabled systematic observations of the solar spectrum. Isaac Newton first applied ...

Besides the two main characteristics of a spectrometer —namely, collecting power and resolution—there are a number of other features that determine the potentialities of a particular ...

By recognizing that each atom and molecule has its own characteristic spectrum, Kirchhoff and Bunsen established spectroscopy as a scientific tool for probing atomic and molecular structure, and founded ...

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In 1860, Kirchhoff and Bunsen used their new technique to analyze mineral water from a spring near Heidelberg. They quickly discovered two previously unknown elements, Cesium and Rubidium, ...

Spectrometers were developed in early studies of physics, astronomy, and chemistry. The capability of spectroscopy to determine chemical composition drove its advancement and continues to be one of ...

Perhaps the first quantitative investigation that can be said to have a direct bearing on the science of spectroscopy would be the discovery of Snel''s law of refraction in about 1621.

Sir Arthur Schuster achieved a resolving power of more than 10 000 at Manch-ester University with a twelve-prism1 spectroscope made for him by Cooke of York, with 30 glass–air interfaces (excessive ...

Although the apparatus Isaac Newton used in his work on the spectrum of light can be considered a crude spectroscope, it is generally recognized that the spectroscope was invented by Gustav ...

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