

The Role of Wedge Filters in Spectroscopy



Overview

Linear Variable Filters (LVFs or "wedge filters") have found increasing applicability in spectrally selective optical instruments. The present invention relates to spectrometers and, in particular, relates to a wedge-filter spectrometer having a compact wedge-shaped spectral disperser optically coupled to an electro-optical detector and also relates to apparatus and methods of fabricating a wedge-shaped spectral disperser. This design already, actured in a gold layer deposited on a calcium fluoride substrate. They perform extremely well as "sliding. Our instruments were modified for aircraft use primarily by automating the repetitive measurements and incorporating image intensifier tubes to reduce exposure times, thereby minimising smear of photographs due to aircraft roll. Three separate instruments were flown. (I) A 35-mm camera obtained. Filters Interference Filters Consist of transparent dielectric (i.

Article Content

Wedge Filters in Radiotherapy

Metal wedge filters can be used to even out the isodose surfaces for photon beams delivered onto flat patient surfaces at oblique beam angles. They are most ...

Hyperspectral data collections with the new wedge imaging

This innovation is based on the use of a linear spectral wedge filter mated directly to an area detector array, avoiding the use of bulky and complex optics required for imaging spectrometers

US4957371A

The present invention relates to spectrometers and, in particular, relates to a wedge-filter spectrometer having a compact wedge-shaped spectral disperser optically coupled to an...

Wedge filter imaging spectrometer

This is why we are developing in our laboratory a light imaging spectrometer with a wedge filter making the spectral splitting. This design already developed in other laboratories has the great advantage to

Working principle of a linear variable filter (NIR)

Download scientific diagram | Working principle of a linear variable filter (NIR) component. The wedge in the thickness is applied to all layers comprising the

Filter wedge spectroscopy in the region 3-6 μm

Four 10-nm bandpass filters were centred on OH bands at 690, 730, 790, and 840 nm, two filters were centred on non-airglow regions at 710 and 820 nm, one filter was identical to that on the...

(PDF) <title>Wedge filters for spectral imaging in the near-IR using ...

Linear Variable Filters (LVFs or "wedge filters") have found increasing applicability in spectrally selective optical instruments. They serve as moderate resolution spectral discriminators in astronomical

Wedge Filters for Spectral Imaging in the Near IR Using Metal Grids

We have demonstrated wedge filters using metal grids in 2.5-5 μm range. The filters are best used in high f-number beams, otherwise their performance is degraded. While the filters have...

The Use of Wedge Filters To Improve Dose Distribution With the

Wedge filters can be used to restore dose uniformity in the treatment volume when limited arcs are employed. The authors emphasize the use of small rotational arcs (less than 90°) in treating

Chemistry 4631

Filters Interference Wedges Consist of a pair of mirrored partially transparent plates separated by a wedge shaped layer of dielectric material. Transmitted wavelength varies with thickness of the

Study of accessible performances of a spectro imager using a wedge ...

Abstract Linearly variable filters, also called wedge filters are special optical interference filters with a shift of the spectral characteristics along one axis of the filter.

Optical Filters - Technology and Applications

Optical filters have two main uses in spectroscopy. They can either be the primary wavelength-selective elements or serve as auxiliary filters for different purposes. Optical bandpass

Systems to Ensure the Correct Application of Wedge Filters

The distance between these is peculiar to the wedge filter in the applicator and the position of the eccentric peg specifies its thin end. If two suitable holes are bored in the wax seating

Use of Wedge Filters in Deep X-ray Therapy | British Journal of ...

Abstract. In the treatment of tumours by X-ray beams when the lesion is situated only a few centimetres deep to the skin, it is a matter of some difficulty

Wedge-shaped spectroscope

Selective spectroscopy□Wedge spectrometers can be designed to reflect only specific wavelengths of light while allowing other wavelengths of light to pass

PII: S0958-3947(05)80002-0

In addition to modifying the dose distributions, the wedge filter also changes the percent depth dose curves, the output factor, and the wedge factor. The degree of wedge effects on these dosimetric

Filter-based Spectrometers

An explanation of filter-based spectrometers from Fourier-Transform Spectroscopy Instrumentation Engineering, SPIE Press.

The use of wedge filters in X-ray therapy

To assist in obtaining uniform irradiation throughout the treated volume, techniques have been developed using wedge filters, i.e., non-uniform (metal) filters whose thickness varies in one direction

PII: S0368-2242(50)80029-5

PHYSICAL Essentially the wedge consists of a non-uniform metal filter whose thickness varies in one direction across the field. In the text of this paper, wedge filters intended for use with rectangular fields

Wedge filter imaging spectrometer | Request PDF

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Wedge Imaging Spectrometer: Application to drug and

The Wedge Imaging Spectrometer (WIS) represents a novel implementation of an imaging spectrometer sensor that is compact and rugged

Effectiveness of wedge filter application in reducing

Objective Diagnostic cerebral angiography poses a risk of direct radiation exposure to the eye lens. This study aimed to evaluate the

Iodine Wedge Filter for Roentgenographic Use Radiology

5. Wrap them after trimming the edge of the filter opposite the wedge. We have found that each thickness of blotting paper prepared in the above manner compensated for 2 kv. in the diagnostic range.

17 November 2017 Wedge filter imaging spectrometer

Besides the compactness, another advantage of this system is the reliable spectral registration, due to the rigid connection between the filter and the detector array, which allows getting rid of an internal

21 November 2017 Wedge filter imaging spectrometer

This is why we are developing in our laboratory a light imaging spectrometer with a wedge filter making the spectral splitting. This design already developed in other laboratories has the great advantage to

Raman spectroscopy by a detector-noise-limited birefringent wedge

This report proposes a new development of the birefringent wedge-based FT spectrometer and evaluates its application in low-light detection in analyzing analytes using Raman spectroscopy.

EXPERIMENTAL VERIFICATION OF A METHOD FOR VARYING

A wide range of wedge angles smaller than the nominal wedge angle can be obtained with a single wedge filter by irradiating partly with, and partly without, the wedge filter inserted in the

Schematic of filter wedge spectrometer.

Download scientific diagram | Schematic of filter wedge spectrometer. from publication: Filter Wedge Spectrometer for Field Use | Two spectrometers, utilizing interference filter wedges, have been ...

Wedge-Wire Screens: Functionality and Benefits

Navigate the operational principles behind wedge-wire screens and uncover the compelling advantages they offer in various applications.

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