

問 1 .

[Claim 1]

An energy dispersion type X-ray detection device for irradiating an electron beam, an X-ray, or the like to a sample and detecting a characteristic X-ray generated from a sample surface to carry out elemental analysis, comprising:

an element holder that stores a semiconductor X-ray detection element and is provided with a female screw having a cylindrical shape; and

a finger body that houses a substrate with an initial-stage FET for amplifying a signal from the semiconductor X-ray detection element, has a cooling mechanism, and is provided with a male screw, wherein

the energy dispersion type X-ray detection device is configured to fasten the element holder and the finger body by using the female screw and the male screw to fix the semiconductor X-ray detection element.

[Claim 2]

The energy dispersion type X-ray detection device according to claim 1, wherein the element holder storing the semiconductor X-ray detection element is made of a metal material having a large coefficient of thermal expansion, while the finger body housing the substrate with the initial-stage FET is made of a metal material having a smaller coefficient of thermal expansion than the element holder.

[Claim 3]

The energy dispersion type X-ray detection device according to claim 1, wherein a slit-like opening is provided to the element holder to allow a high voltage wiring for supplying voltage to an electrode of the semiconductor X-ray detection element to pass through the element holder.

問 1 翻訳メモ

1. 請求項 1

「前記めねじと前記おねじによって素子ホルダとフィンガ本体を締結し」は、「前記めねじと前記おねじによって前記素子ホルダと前記フィンガ本体を締結し」であると判断し、そのように翻訳いたしました。

2. 請求項2

「半導体X線検出素子を収める前記素子ホルダを」は、「前記半導体X線検出素子を収める前記素子ホルダを」であると判断し、そのように翻訳いたしました。

3. 請求項2

「初段FETを有する基板」は、「前記初段FETを有する基板」であると判断し、そのように翻訳いたしました。

4. 請求項3

「半導体X線検出素子の電極に」は、「前記半導体X線検出素子の電極に」であると判断し、そのように翻訳いたしました。

## 問 2 .

The conventional typical image compression scheme includes the JPEG scheme that is standardized by ISO. The JPEG scheme is known to use discrete cosine transformation and provide excellent encoded image and decoded image when a relatively large number of encoding bits is assigned. However, if the number of encoding bits is decreased to a certain extent or more, block distortion becomes remarkable and deterioration subjectively becomes conspicuous.

Meanwhile, in recent years, more studies have been actively conducted for a scheme in which an image is divided into a plurality of bands by using a filter, called a filter bank, created by combining a high-pass filter and a low-pass filter, and encoding is performed for each band. Among those, the wavelet transformation encoding is considered to be promising as a new technology that replaces DCT because, unlikely to DCT, it does not have a disadvantage of the block distortion being remarkable due to high compression.

For example, in the JPEG 2000 for which international standardization has been completed in January 2001, a scheme is employed in which the wavelet transformation is combined with a highly efficient entropy encoding, and significant improvement in encoding efficiency is achieved compared to the JPEG.

## 問 2 翻訳メモ

1. 「このウェーブレット変換に高能率なエントロピー符号化を組み合わせた方式」は、「このウェーブレット変換**符号化**に高能率なエントロピー符号化を組み合わせた方式」かと思われませんが、原文通り翻訳いたしました。

### 問3.

Specifically, the electronic paper device 26 is a conventionally-known self-writing device that can display an image representing predetermined information in a voltage applied state on the image display unit and maintain the image in a non-power source state. When the voltage is not applied by the microcomputer 23 via the driver to each pixel electrode constituting a matrix at the image display unit, negatively (-) charged white particles remain at the back side of the image display unit while positively (+) charged black particles remain at the front side, making the image display unit being colored by black when visually observed from the front side of the image display unit. Then, when the driver is operated based on electronic data output from the microcomputer 23 and the polarity of the pixel electrode at a desired portion of the matrix is inverted in accordance with the information to be image-displayed, the positional relationship between the white particles and the black particles is properly interchanged and the information is image-displayed on the image display unit by the contrast between the white particles and the black particles. In addition, even in the non-power source state where the voltage is not applied via the driver to each pixel electrode constituting the matrix at the image display unit, the electronic paper device 26 can maintain the image display state as it is.