

Optical information detector and microscope system

Possible to obtain rapidly optical information from different positions and create 3D optical image

Summary

Laser scanning microscopy is one of laser microscope techniques that uses a laser beam as illumination. This device is used for observing a sample by scanning a laser light beam and detecting fluorescence or phosphorescence from a target sample irradiated with the focused light. Even if the high-speed scanning that enables high-speed acquisition of 2D images is possible, the conventional laser scanning microscope takes a long time to move the specimen along the optical axis, so the 3D image could not be obtained in real time.

This invention can provide an optical information detector and a microscope system enabling rapid acquisition of optical information from different positions in the direction along the optical axis in the radiation area of the target sample. In the present invention, optical information along the optical axis is obtained at different lateral positions on the light-receiving surface by separately concentrating the lights, and these information can be acquired at once without moving the optical system or the target sample.

Effect

- Possible to obtain rapidly optical information of the target sample from different positions along the optical axis
- Possible to create 3D optical image in real time

Application

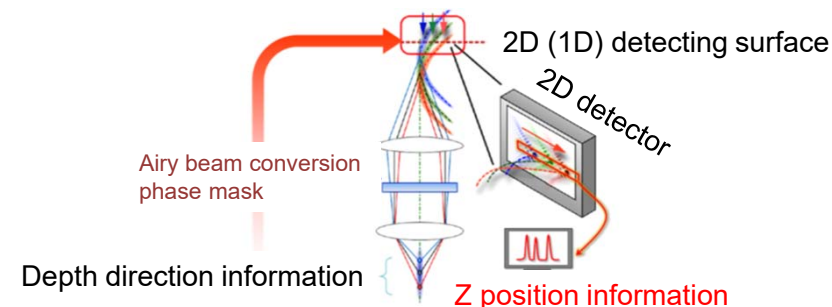
- 3D image acquisition required domain
- Biological, organism-related and medical field such as bio-function analysis
- Industrial fields where the fine functional materials are developed such as metals and chemicals.

Patent Data Sheet

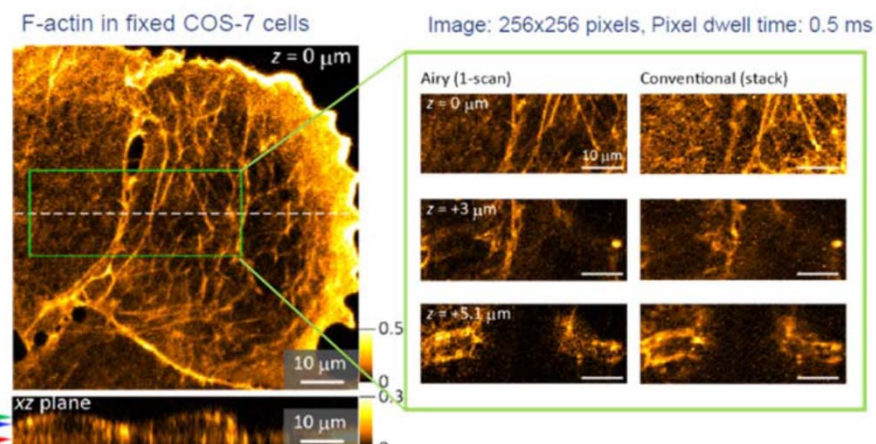
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Convert to in-plane information



Principle of this invention



Visualize 1 entire cell in 3D from a single 2D scan only

Example of imaging on biological sample

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