

A filterless color image sensor for digital camera

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Background

Tendencies go towards reducing consumption of paper and other non-reusable materials in order to transmit and diffuse information. This digitization era encounter some challenges since certain media, such as pictures can not be easily digitized with a sufficiently acceptable degree of quality. While digital cameras are becoming more and more popular, they currently have spatial resolutions of about 1 to 2 Mega Pixels/cm², which is by far inferior to conventional cameras with photosensitive chemical film.

Technology

We propose a new sensor principle based on the principle of depth of penetration of electromagnetic rays. In the case of semiconductor mono-crystalline materials, such as silicon, the depth of penetration of a light ray is proportional to its wavelength. The technology consists of a pixel having three electrodes that can discriminate between the colors red, green, and blue, and thereby reconstruct a color image.

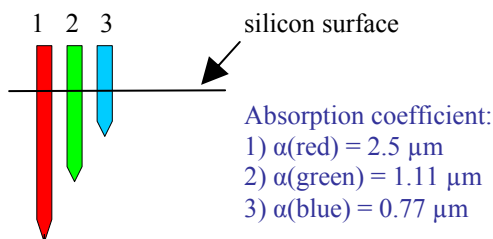


Figure shows the principle of wavelength penetration into solids (silicon) used by the filterless color image sensor.

Applications

This new sensor can be used within any imaging application. This image sensor can be easily integrated in digital camera to replace current sensor.

Competitive advantages

HIGH-QUALITY IMAGE SENSOR. This technology allows image sensors having a resolution greater than 2 Mega pixels/cm² and getting closer to the resolution of conventional chemical films.

HIGH-RESOLUTION. High resolution since one pixel detects three colors.

LOW COST. No filter deposition, thereby eliminating the costly production step. UN autre aspect du low cost est que l'on peut le fabriquer en CMOS ...

INTEGRATED. The signal processing circuit can be included in the same chip as the pixel matrix. There is no use of an external circuit as required for CCD camera.

Patent Status

PCT Application (PCT/CA2007/000997)

Business Opportunity

Univalor is seeking partners to support the development phase and to commercialize this technology.

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