

Distinguished Lecture: An Organic-Photoconductive-Film CMOS Image Sensor's Advanced Technologies

Date:

02 September 2021

Time:

18:00 to 19:00

Location:

Zoom platform

Space is limited

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Synopsis

We have developed a CMOS image sensor with an organic photoconductive film (OPF) laminated on pixel circuits, different from those of a conventional silicon image sensor, in which the organic thin film for photoelectric conversion and the charge storage part for signal charge accumulation are completely independent. In this presentation, we focus on the advantageous features of the OPF image sensor; [1] technology that realizes over 120 dB simultaneous-capture wide dynamic range; [2] global shutter technology achieving high saturation signals per unit square that is 10 dB higher than that of silicon image sensors with the global shutter function, without sacrificing pixel area; [3] RGB-NIR sensor technology capable of controlling NIR sensitivity by simply controlling the voltage applied to the OPF. Moreover, we introduce about 8K4K high resolution sensor technologies with 60fps high frame rate, 450ke- high saturation signals, and the global shutter function at the same time. We believe these features of the OPF image sensor will contribute to leaps in the imaging and sensing fields.

Speaker

Kazuko Nishimura
Panasonic Corporation, Japan



Kazuko Nishimura received her B.E. degree in mechanical engineering from Osaka University, Japan, in 1995. She has since been engaged in the research and development of high-speed ADCs, optical transceivers and image sensors. Currently she is the manager in the Technology Innovation Division (Corporate R&D Division), Panasonic Corporation. Her technical focus is in the advanced CMOS image sensor circuit and system development.

Co-organizer



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