

The 2001 Walter Kosonocky Award

The Walter Kosonocky Award is presented bi-annually for the best paper presented during the prior two years representing significant advancement in solid-state image sensors. The award commemorates the many important contributions made by the late Dr. Walter Kosonocky to the field of solid-state image sensors. Founded in 1997 by his colleagues in industry, government and academia, this is the second time this award has been presented.

Dr. Walter Kosonocky began his work on charge-coupled devices (CCDs) in 1970 at the RCA Laboratories shortly after the invention of the CCD was announced. He worked on the development of the CCD for memories, signal processing, visible image sensors, and PtSi infrared image sensors. He authored 77 technical papers and was issued 47 U.S. patents. He received four RCA Laboratories Outstanding Achievement Awards, and two David Sarnoff Awards. In 1985, he received the IEEE J.J. Ebers Award for his contributions to CCDs and image sensors. He joined the New Jersey Institute of Technology in 1987 as Distinguished Professor in the Department of Electrical Engineering where he mentored students and continued industry consultation until his passing in 1996. A series of tributes to Walter may be found in IEEE Trans. Electron Devices vol. 44(10) pp. 1574-1579, October 1997.

The 2001 Walter Kosonocky Award is presented for the paper:

A Progressive Scan CCD Image Sensor for DSC Applications

Tetsuo Yamada, Katsumi Ikeda, Yong-Gwan Kim, Hideki Wakoh, Tetsuo Toma, Tomohiro Skamoto, Kazuaki Ogawa, Eiichi Okamoto, Kazuyuki Masukane, Kazuya Oda, and Masafumi Inuiya

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Abstract

A progressive-scan CCD image sensor with a standard double-layer poly-silicon is designed on a new architecture of pixel interleaved array named PIACCD. The pixel layout is estimated to enlarge the saturation voltage by 1.3 times and heighten the sensitivity with 1.4 times enlarged equilateral aperture opened above each photodiode. The three-dimensional simulation ensures that the unique electrode pattern layout has an advantage to accelerate the signal charge transfer. The pixel interleaved array heightens the resolution by 2-1/2 times in comparison with that of the same pixel number ITCCD in horizontal and vertical directions. The resolution characteristics fit to the fine pattern of nature scenes. The fabricated sensor, which has 2.4M pixels with 4.52 μm^2 pixel size, has provided the 1.3 times sensitivity and dynamic range of 71 dB. The reproduced image has verified the resolution of the POACCD 1.4 times higher than that of the same pixel number ITCCD.

Accepting the award will be Mr. Tetsuo Yamada. Mr. Yamada received the B.S. and M.S. degrees from Shizuoka University, Japan in 1971 and 1973 respectively. He joined Toshiba Corporation in 1973 where he was engaged in the development of CCD image sensors. In 1990, he received an award for the invention of a solid-state image sensor with a vertical overflow drain. He joined Fujifilm Microdevices Company, Ltd., Miyagi, Japan in 1996 where he has continued his work on CCD image sensors for DSC applications.