

Story of Pinned Buried Photodiode

For details, please visit http://www.aiplab.com/Story_of_Pinned_Buried_Photodiode_2021

Semiconductor History Museum of Japan

1975-85

Improvement of photodiode for image sensor (Sony, Hitachi, NEC, Toshiba)

~ Discrete Semiconductor/Others ~

Japanese Patent JPA 1977-837

This patent is applied for the lateral overflow drain (LOD) function.
The excess charge is drained to the N+ lateral output drain (LOD).

This SiO₂ surface exposed photodiode has the serious Image lag problem.

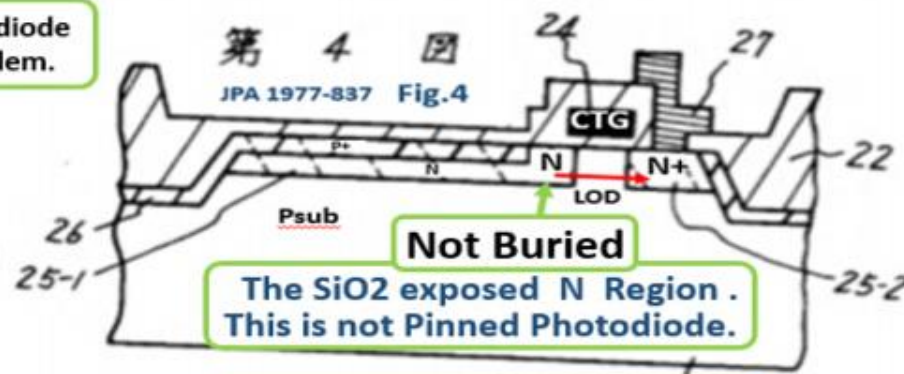
④固体撮像装置

②特 願 昭52-837

②出 願 昭52(1977)1月10日

②発 明 者 小池紀雄

①特許出願公開 昭53-86516

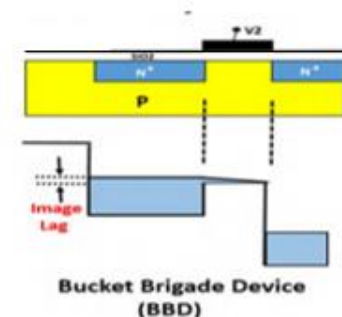


[3] Y. Hagiwara, Japanese Patent JP1975-134985

[4] N. Koike, I. Takemoto, Japanese Patent JP1977-837

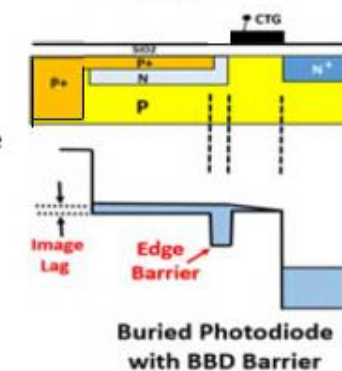
[5] Y. Hagiwara, M. Abe, and C. Okada, "A 380H x 488V CCD imager with narrow channel transfer gates", Proc. The 10th Conference on Solid State Devices, Tokyo, (1978); Japanese Journal of Applied Physics, vol. 18, Supplements 18-1, pp. 335-340, (1979)

- (1) Floating Surface N+P Single Junction type Photodiode with BBD Barrier causing the serious Image Lag problem



JPA1977-837

- (2) Partially Pinned but Floating Surface and not Buried Photodiode with the BBD Barrier causing the serious Image Lag problem



SSDM1978

- (3) Completely Pinned Buried Photodiode with no BBD barrier and the complete charge transfer capability of the no-image-lag feature, achieving the electric shutter function for the instant snapshot and fast motion pictures

