

I. INTRODUCTION

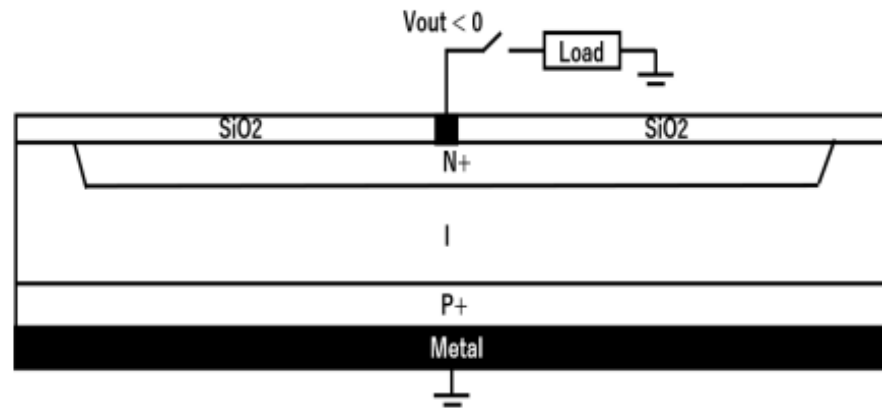


Fig. 1 Single junction PIN photodiode type Solar Cell (Nishizawa 1950)

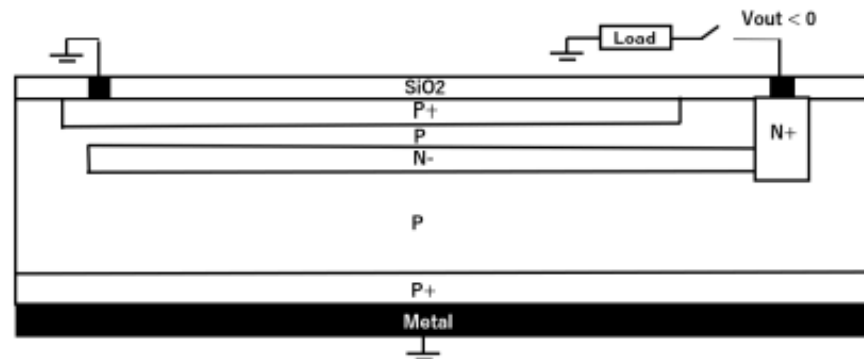


Fig. 2 Double Junction Pinned Photodiode type Solar Cell (Hagiwara.2020)

In this paper three types of photo sensor structures are explained in details. Fig.1 shows the single junction type PIN Photodiode type Solar Cell invented by Jun-Ichi Nishizawa [1].

Fig.2 shows the double junction type Pinned Buried Photodiode type Solar Cell [2] proposed by Yoshiaki Hagiwara in 2020.

Pinned Buried Photodiode now widely used in image sensors is a double or triple junction type photodiode with the buried charge collecting and storage region and with the pinned-surface hole-accumulation region with no surface electric field and with no surface dark current noise [3]

[1] <https://mainichi.jp/english/articles/20181026/p2a/00m/0na/036000c>

[2] http://www.aiplab.com/JPA_2020_131313_on_PPD_Solar_Cell.html

[3] http://www.aiplab.com/JPA_1975_134985_on_PPD_with_VOD.html