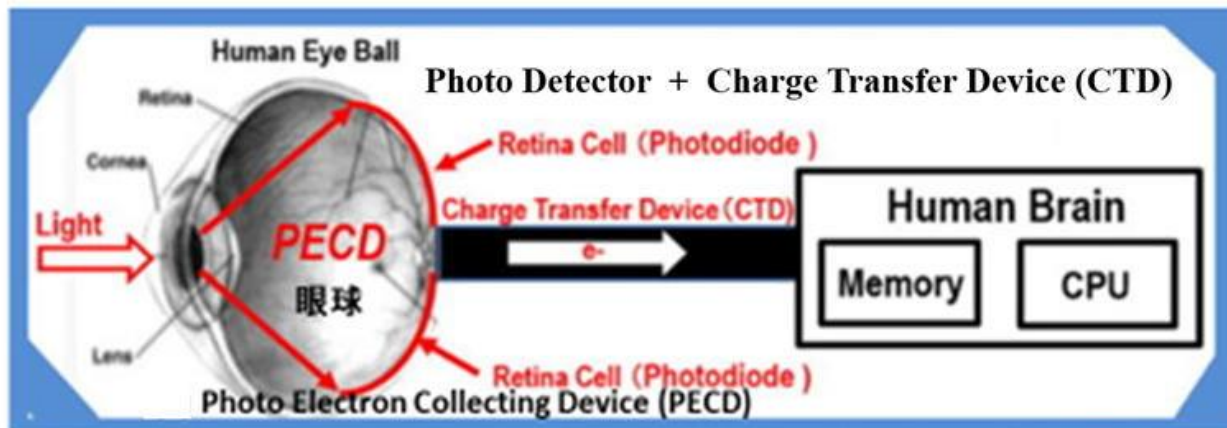


Super Light Sensitivity Feature

<http://www.aiplab.com/>
Yoshiaki Hagiwara

- (1) Photo Detector (P+N junction → CCD MOS Capacitor → P+NP junction Pinned Photodiode)
- (2) Charge Transfer Device (MOS type CTD → CCD type CTD → CMOS type CTD with APS)



Yoshiaki Hagiwara <http://www.aiplab.com/>

04

Slide 04

An image sensor in general is composed of the super light sensitive photo detector and the charge transfer device (CTD).

The CTD transports the signal charge to the outside processing units. CCD type charge transfer devices have a very low charge transfer noise and contributed very much to increase the S/N ratio of image sensors, but now replaced and disappeared from the image sensor markets by more powerful CMOS type charge transfer devices with active in pixel amplifier circuits.

However the super light sensitive photodetector, which is now called as Pinned Photodiode or Hole Accumulation Diode (HAD in short) remains the same since its invention in 1975 by Hagiwara at Sony.