

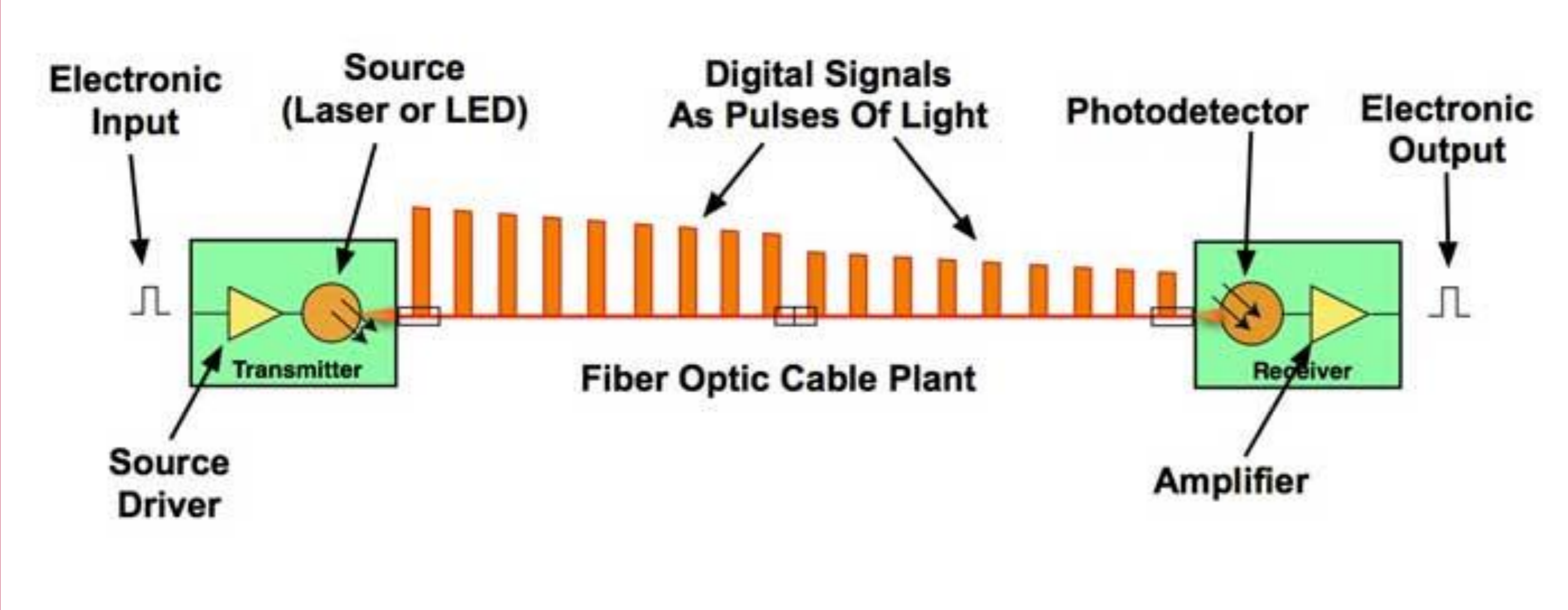
SISTEM KOMUNIKASI OPTIK

- **MATERI 7**
- **DETEKTOR OPTIK 1**

- D3 Teknologi Telekomunikasi – Fakultas Ilmu Terapan



APA ITU PHOTODETECTOR??



Gambar 1. Sistem Komunikasi Serat Optik



Gambar 2. Contoh Photodetector

Sumber Referensi :

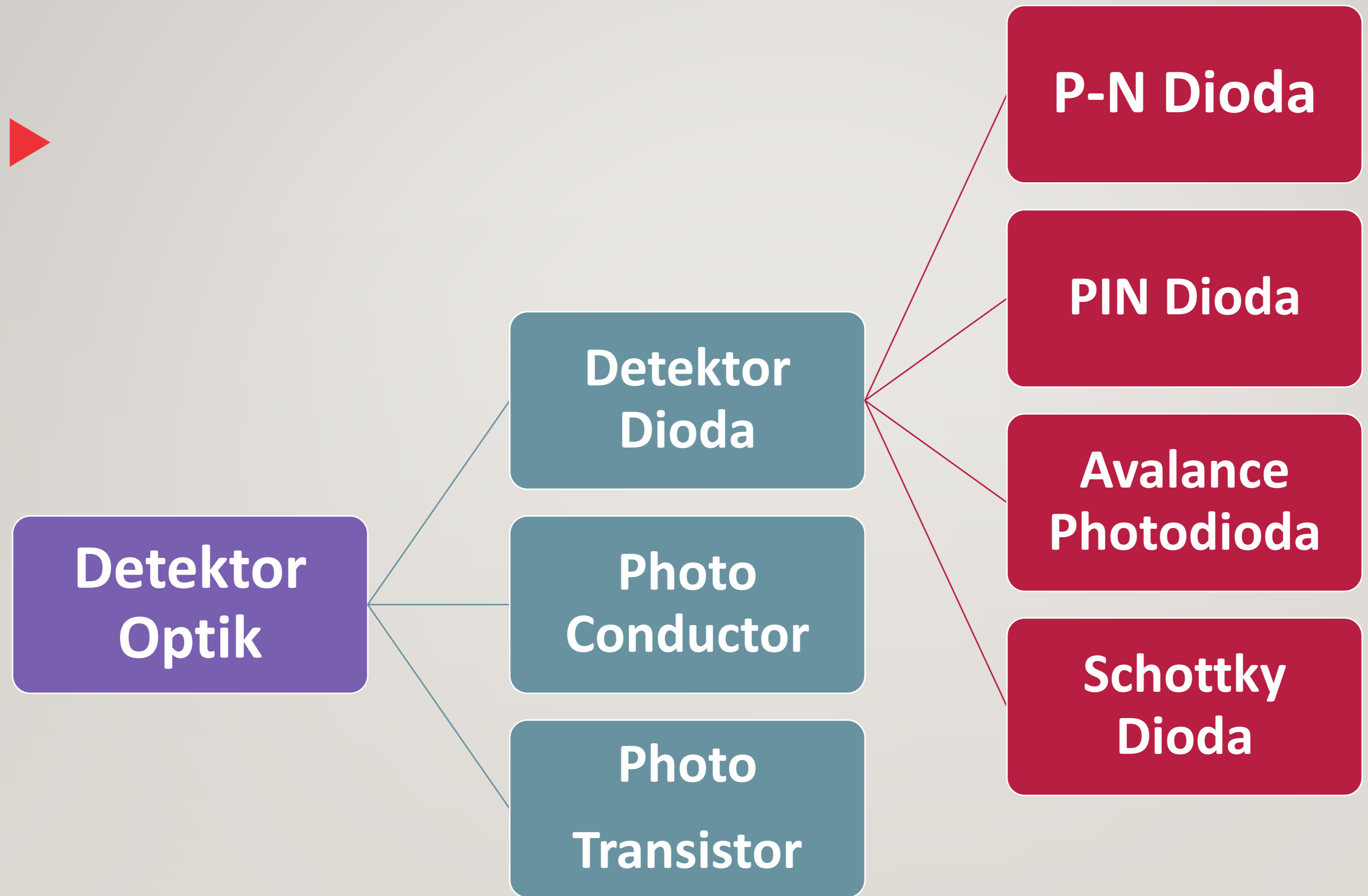
Sumber Referensi: <https://www.thefoa.org/tech/ref/appl/datalink.html>

<https://en.wikipedia.org/wiki/Photodetector>

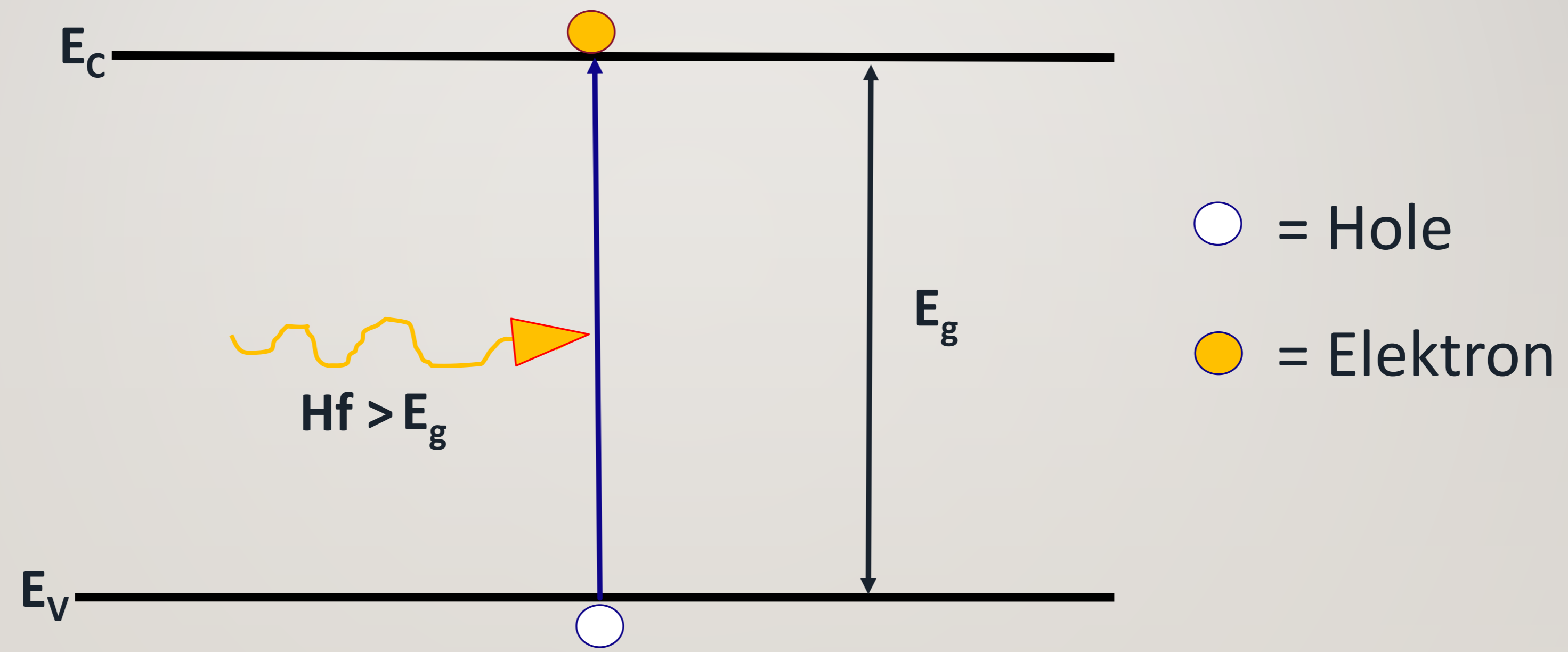
<https://www.directindustry.com/prod/thorlabs/product-36188-460334.html>

Gerd,Keiser.,2010, *Optical Fiber Communications*, 4th edition,McGraw Hill, International Edition





PRINSIP DETEKSI OPTIK



ABSORPSI PADA PHOTON

Photocurrent :

$$I_{ph} = P_o \cdot \frac{e \cdot \lambda}{h \cdot c} \cdot (1 - R) \cdot [1 - \exp(-\alpha_0 d)]$$

Persamaan 1

P_o = Daya Optik

e = elektron

λ = Panjang Gelombang

h = Konstanta Planck

c = Kecepatan Cahaya

α_0 = Koefisien Absorpsi

d = lebar dari daerah aktif

R = Koefisien Pantul interface detector dan udara



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