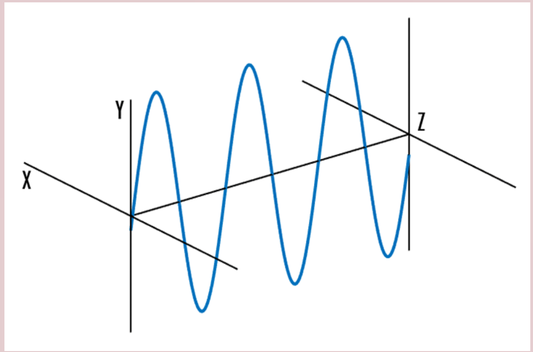
SISTEM KOMUNIKASI OPTIK

- **BAB 2**
- **JENIS POLARISASI GELOMBANG CAHAYA PADA SERAT OPTIK**

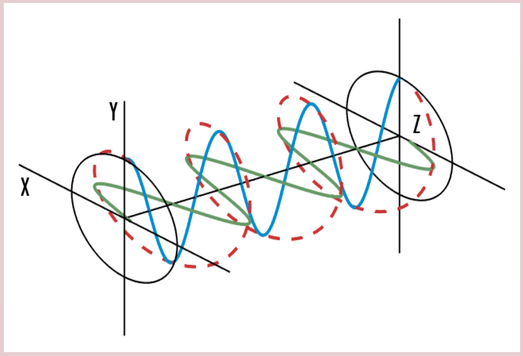
- **D3 Teknik Telekomunikasi – Fakultas Ilmu Terapan**

JENIS POLARISASI GELOMBANG CAHAYA

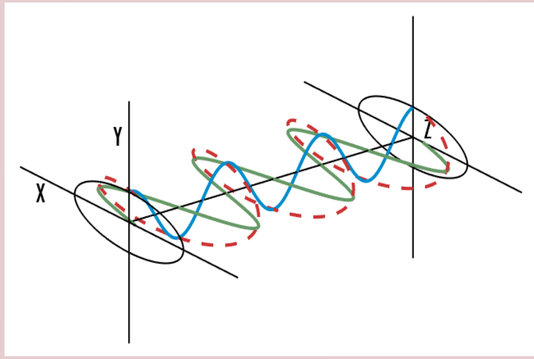
Polarisasi Linier



Polarisasi Sirkular



Polarisasi Ellips



Sumber Referensi : https://www.edmundoptics.com/resources/application-notes/optics/introduction-to-polarization/
Bahaa E.A.Saleh and Malvin Carl Teich, 2007, *Fundamental of Photonics*, John Wiley & Sons

POLARISASI LINIER

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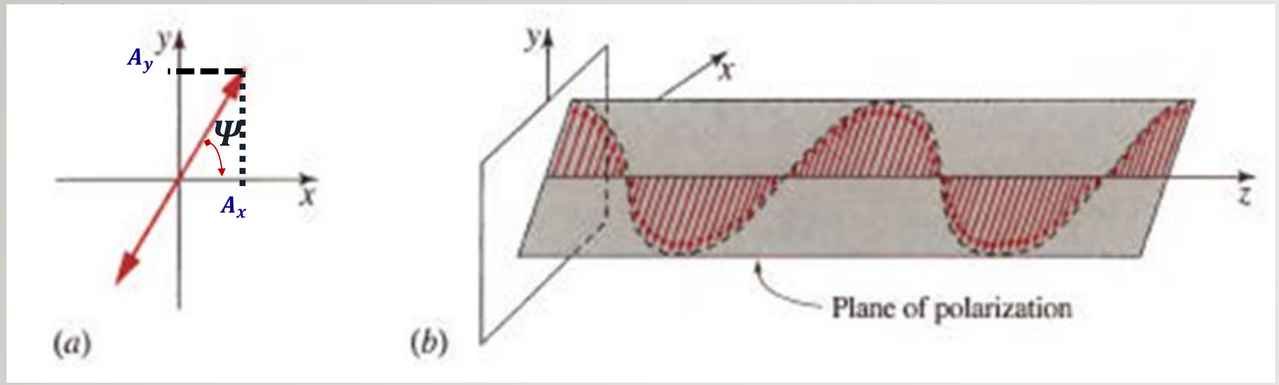
❖ EFEK DIKROISME, BIREFRINGENCE, REFLEKSI ATAU HAMBURAN



$$\tan \Psi = \frac{A_y}{A_x}$$

Nilai envelope kompleksnya dapat dinyatakan dengan :

$$\boldsymbol{A = A_x \vec{X} + A_y \vec{Y}}$$

persamaan garis lurus dengan kemiringan sebesar ± (ay/ax).

Ey= ± (ay/ax)

Sumber Referensi : https://pediaa.com/difference-between-polarized-and-unpolarized-light/
Bahaa E.A.Saleh and Malvin Carl Teich, 2007, *Fundamental of Photonics*, John Wiley & Sons

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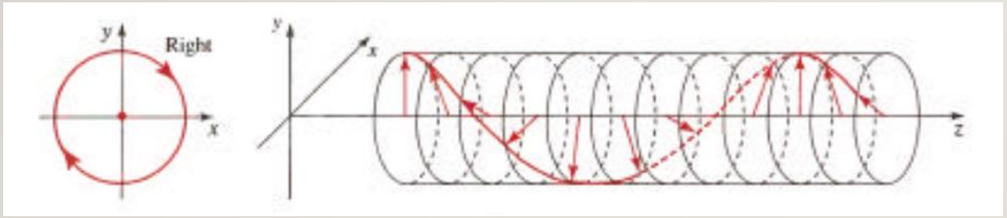
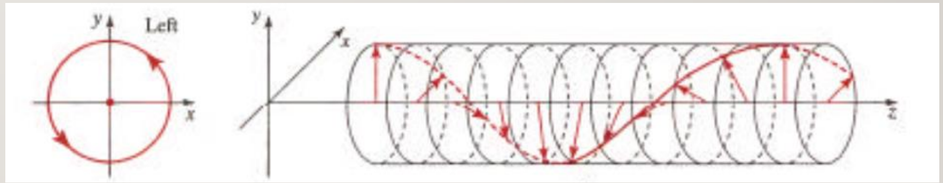
POLARISASI SIRKULAR

$$E_x = a_0 \cos\left[\omega\left(t - \frac{z}{c}\right) + \varphi_x\right] \qquad E_y = \pm a_0 \sin\left[\omega\left(t - \frac{z}{c}\right) + \varphi_x\right]$$

Dimana : ${E_x}^2 + {E_y}^2 = {a_0}^2$ merupakan persamaan lingkaran.



Gambar 1. Polarisasi Sirkular melingkar ke kanan



Gambar 2. Polarisasi Sirkular melingkar ke kiri

Sumber Referensi : https://pediaa.com/difference-between-polarized-and-unpolarized-light/
Bahaa E.A.Saleh and Malvin Carl Teich, 2007, *Fundamental of Photonics*, John Wiley & Sons

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POLARISASI ELLIPS

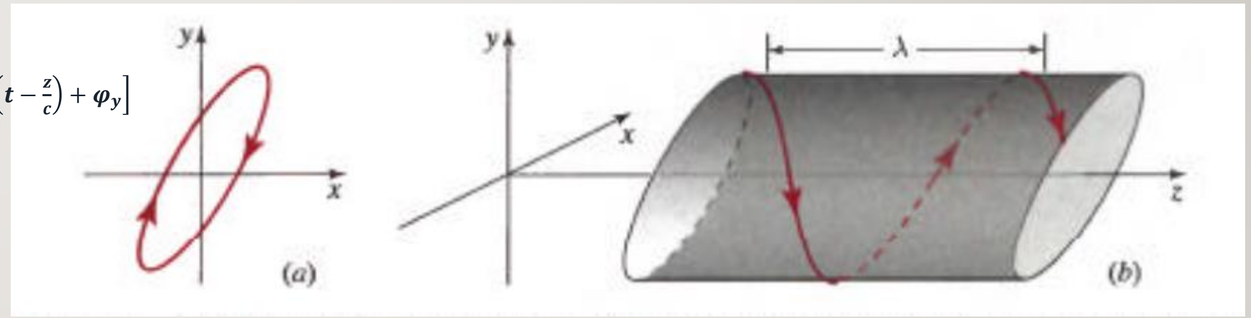
$A_x = a_x\, exp(j\varphi_x)$ dan $A_y = a_y\, exp(j\varphi_y)$

$E(z,t) = E_x\,\vec{X} + E_y\,\vec{Y}$

Dimana

$E_x = a_x cos\left[\omega\left(t - \frac{z}{c}\right) + \varphi_x\right]$

$E_y = a_y cos\left[\omega\left(t - \frac{z}{c}\right) + \varphi_y\right]$



Sumber Referensi : https://pediaa.com/difference-between-polarized-and-unpolarized-light/
Bahaa E.A.Saleh and Malvin Carl Teich, 2007, *Fundamental of Photonics*, John Wiley & Sons

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