Polarization by reflection:

Experimentally it has been discovered (by Malus) that when an ordinary unpolarized light is incident on the surface of transparent medium (like: glass, water etc.), the reflected light is partially plane polarized.

✓ The degree of polarization depends upon the angle of incidence.

The angle of incidence at which the reflected ray is completely polarized is called as polarizing angle (θ_p) or Brewster's angle (θ_B).

✓ When angle of incidence is equal to polarizing angle, the reflected ray and transmitted (refracted) ray are perpendicular to each other. The reflected ray is completely polarized while the refracted ray is partially polarized.
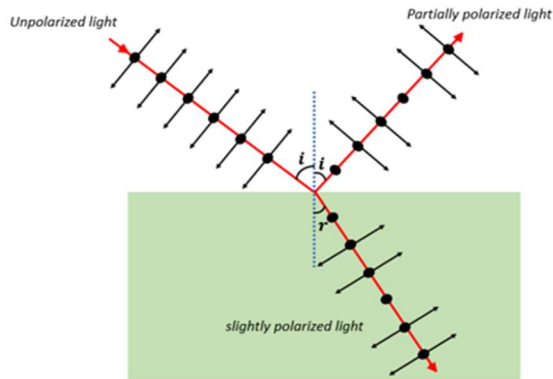

Figure: Partial polarization of light ($i < \theta_p$ or $i > \theta_p$)
[Incident rays and refracted rays, both are partially polarized]

Brewster's law:

Statement:

"The tangent of angle of polarization is numerically equal to the refractive index of medium."

i.e., $\tan \theta_p = \mu$