

Difference between unpolarized and polarized light:

Unpolarized light	Polarized light
Unpolarized light means the light having vibration of light particles in all plane.	Polarized light means the light having vibration of light particles restricted to a single plane.
Unpolarized light has electric field oscillating in all directions.	Polarized light has electric fields oscillating in one direction.
Light produced by natural sources are always unpolarized.	Polarized light can be produced when Unpolarized light undergoes reflection, scattering or travels through a material that can cause polarization.
The intensity of unpolarized light depends on the nature of source.	Intensity of polarized light depends on the nature of the polarizer used.
Unpolarized light is incoherent in nature [The phase difference between the x-and y components of the electric field changes randomly]	Polarized light is coherent in nature [The x-and y-components of the electric field has a constant phase difference between them]

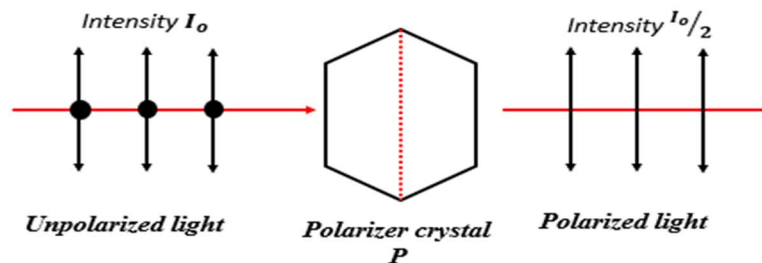
Experimental verification of transverse nature of light:

The phenomenon of polarization of light verifies the transverse nature of light.

Verification:

Step 1:

An ordinary (unpolarized) light is passed through a polarizer (P). The transmitted light gets plane polarized and the intensity is reduced to half of that of incident (unpolarized) light-the maximum intensity of plane polarized light.



Step 2:

The emergent beam of polarized light from polarizer (P) is allowed to pass through analyzer (A) with its axis parallel to each other. In this case, the intensity of polarized light through both crystals remains same.

