



Third lecture

Optical activity Electro-optical effect

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Fourth Stage

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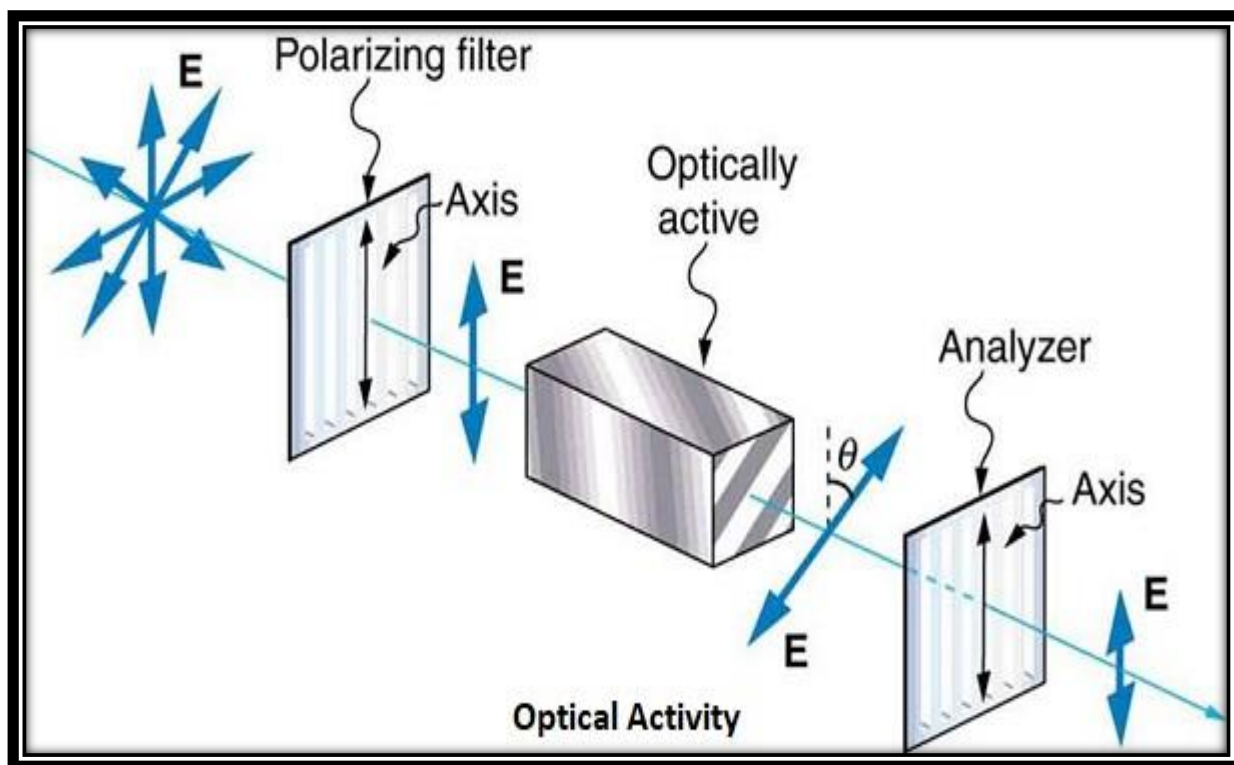
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Introduction to Optical Activity

Polarization plays an important role in explaining the wave nature of electromagnetic waves. While studying the polarization concept we encounter many interesting concepts regarding the wave nature of the electromagnetic waves, one among them is optical activity. Optical activity is a phenomenon that describes the ability of rotation, thus optical activity is also known as optical rotation. Optical activity is different from polarization. The optical activity corresponds to the property of some materials to rotate the plane of polarization of light waves.



Optical rotation

- Let us have a look at what optical rotation is. So, optical activity or optical rotation is the ability of a compound to rotate the plane of polarized light, and the compounds having this ability to rotate the plane of polarized light are known as optically active materials.
- The optical rotation of substances is due to the interaction of the electromagnetic radiation of polarized light with the unsymmetrical electric fields generated by the electrons in a chiral molecule. Optical activity is usually found in organic substances. For example, the sugar solution is optically active, it exhibits optical rotation on observing through the polar meter. Other examples of optically active substances are turpentine, sodium chlorate, cinnabar, etc...