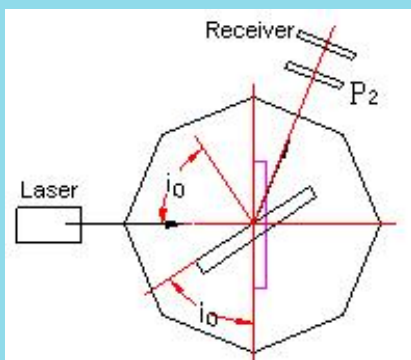
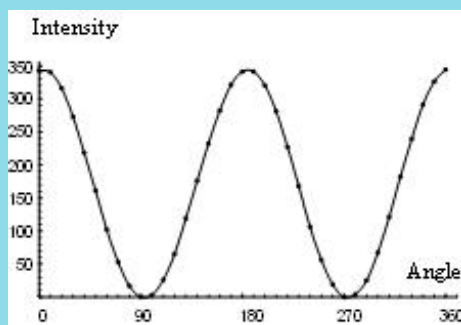


LEOI-42 Experimental System for Polarized Light - Enhanced Model

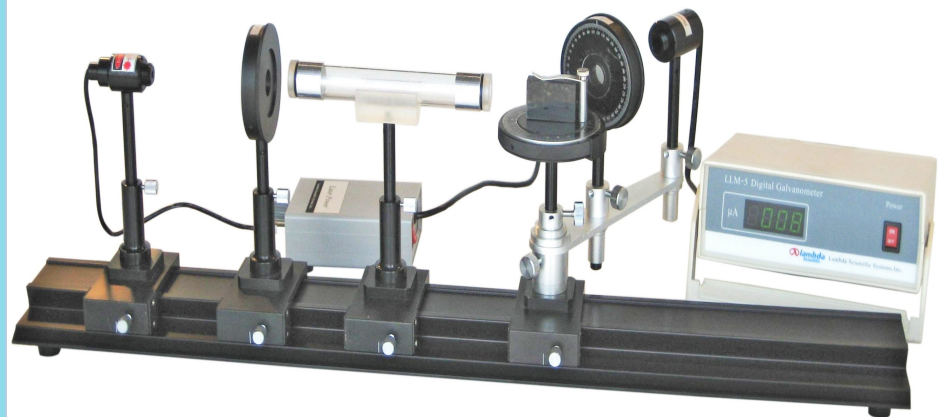
- *Verifying Malus's law*
- *Observing polarization by reflection*
- *Measuring Brewster's angle & refractive index of glass*
- *Studying effect of optical activity*



Measurement of Brewster's angle



Verification of Malus's law



Compared with other important properties of light such as interference and diffraction, polarization is more abstract and relatively hard to understand. Without special equipment, human eyes or even optical detectors cannot recognize polarization phenomena. LEOI-42 is developed to help students understand the concept and mechanism of polarization. It allows students to measure different types of polarization and the working parameters of optical elements involved. The system is designed for manual operation in order to enhance students' hands-on ability and consolidate their knowledge and skills. Experiment results can be graphed to schematically illustrate the theory of polarization. Students should acquire a fundamental understanding of polarization and the mechanism involved in polarization elements.

Experimental Contents

1. Verification of Malus's Law
2. Function study of a half-wave plate
3. Function study of a quarter-wave plate: circularly and elliptically polarized light
4. Measurement of Brewster's angle of a glass plate
5. Measurement of refractive index of a glass block
6. Observation of polarization rotation of light going through a glucose solution
7. Measurement of specific rotatory power of a glucose solution
8. Measurement of concentration of a glucose solution sample

Parts & Specifications

Optical Rail	length 0.74 m	1
Semiconductor Laser	3 mW, wavelength 650 nm	1
Slider	with holder	3
Special Slider	with rotational arm and holders	1
Polarizer	with scaled rotational mount	2
$\lambda/2$ Wave Plate	with scaled rotational mount	1
$\lambda/4$ Wave Plate	with scaled rotational mount	1
White Screen		1
Digital Galvanometer		1
Rotational Stage	0~360°	1
Sample Glass Block		1
Liquid Sample Tube	with mount, length 150 mm	2
Manual	electronic version	1