

Polarization of Light

Apparatus

1. Pasco Model CI-6504A light sensor
2. 3 Thorlabs Model LPVISE100-A 1 inch diameter linear polarizers with N-BK7 protective windows each mounted in a Thorlabs Model RSP1C rotation mount with adjustable angular scale
3. 635nm 3.0 mW CW Circular Beam Laser Diode Module with 5 volt power supply and mounted in a rotatable housing with a post
4. Newport Model PRL-36 precision optical rail of length 92 cm for accurately measuring distance
5. Glass microscope slide mounted to a post held with a post holder mounted to a Thorlabs Model RP01 rotation stage
6. A independently rotatable arm assembly with polarizer/analyzer and screen
7. Several Newport PRC-1&3 rail carriers for mounting optical components to the rail, and
8. Pasco 850 Universal Interface connected to a computer via a USB port
9. Pasco Capstone software program is used for data acquisition and measurement.

Comments:

The sensor, laser, and polarizers are mounted on posts attached to the Newport rail carriers that are mounted to the Newport Model PRL-36 rail carrier. The rotatable arm assembly allows the screen and polarizer/analyzer to be angularly positioned independently of the angular position of the microscope slide with respect to the direction of the laser beam. This permits adjustments to keep the angles of incidence and reflection equal when determining the Brewster angle.

Setup:

