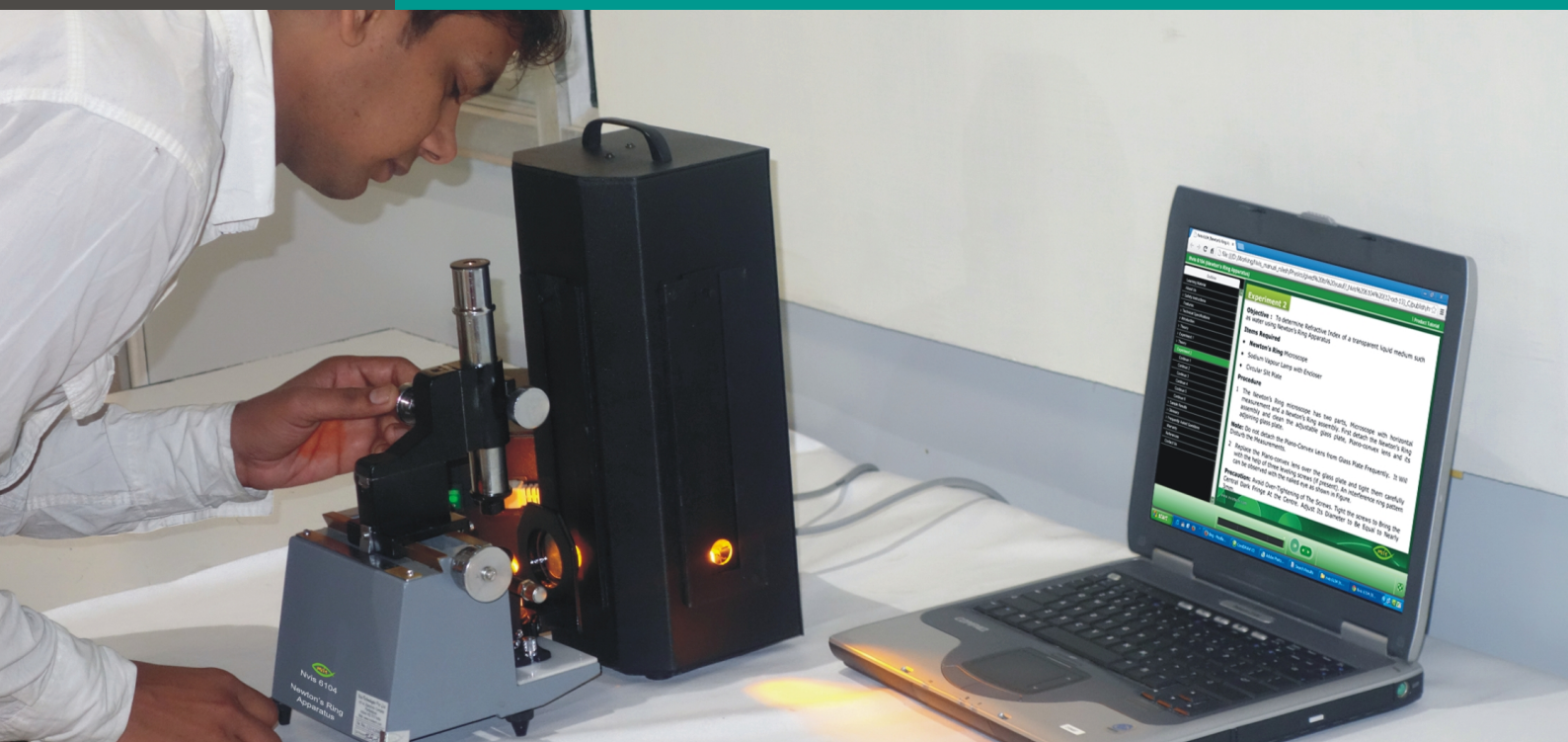




Newton's Ring Apparatus

Nvis 6104



Nvis 6104 Newton's Ring Apparatus is one of the basic experiment at graduation level. With the help of this apparatus, the wave nature of light is confirmed. It is based on the phenomenon of interference of light waves obtained from single coherent (of same frequency and constant or zero phase difference). The phenomenon of Newton's ring, is the result of interference between the partially reflected and partially transmitted rays from both the lower curved surface of plano-convex lens as well as upper surfaces of the glass plate. When viewed with a monochromatic light, it appears as a series of concentric, alternating bright and dark rings centered at the point of contact between the two surfaces. The thickness of the film is radially symmetrical and increases outwards from the point of contact. By studying the ring pattern, we can determine the wavelength of the monochromatic light and also the refractive index of a given transparent liquid medium present in the wedge-shaped film.

Features

- A microscope with x-y-z axes movement
- Horizontal measurement scale with fine and coarse movement screw
- Cross wire in the field of view for ring's diameter measurement
- Newton's ring assembly consisting of plano-convex lens mounted on an optically plane glass plate
- Adjustable plane glass plate is provided to be inclined at 45° with respect to the vertical plane
- Sodium vapour lamp as the monochromatic (5893Å) and broad light source

Scope of Learning

- Determination of the Wavelength of sodium light by measuring the diameters of Newton's rings
- Determination of the Refractive Index of a liquid transparent medium such as water using Newton's ring apparatus

Technical Specifications

Lens

Type	: Plano - convex
Focal Length	: 100cm/200cm
Diameter	: 6cm

Newton's Ring Microscope

Magnification	: 10x
Weight (kg)	: 5.7 (approximate)
Horizontal Movement Limit	: 9cm
Least Count of Circular Scale	: 0.001cm

Sodium Vapour Lamp

Wavelength	: 5893Å
Operating Wattage	: 35W
Mains Supply	: 230V ±10%, 50Hz

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