

Name

Wave Optics

Class

Total flashcards: 63

Date

Instructor name: Dr. Ramanathan Saitechinfo

What did Descartes contribute to the understanding of light in 1637?

Who further developed the corpuscular model of light after Descartes?

What was Christiaan Huygens' contribution to the wave theory of light in 1678?

What did the wave model predict about the speed of light in different media?

What experiment confirmed the wave model's prediction about the speed of light?

What was the initial reaction to Huygens' wave theory of light?

What significant experiment did Thomas Young perform in 1801?

What is the wavelength of visible light, specifically yellow light?

What is geometrical optics?

What does Huygens' principle state?

What is the significance of the wave equation derived by Maxwell?

What is the relationship between electric and magnetic fields in electromagnetic waves?

What is a wavefront?

What happens when light travels through a narrow slit?

What is the law of reflection?

What is Snell's law?

What is the critical angle in refraction?

What is total internal reflection?

What is the Doppler effect?

What is interference?

What is Young's double-slit experiment?

What is diffraction?

What is the difference between coherent and incoherent sources?

What is the principle of superposition?

What is the intensity of light in the photon picture?

What is the significance of the wavelength in diffraction patterns?

What is the resolving power of optical instruments?

What is Brewster's angle?

What is Malus' law?

What is the relationship between intensity and amplitude in wave optics?

What is the effect of increasing the slit width in single-slit diffraction?

What is the significance of the Fresnel distance?

What is the difference between ray optics and wave optics?

What is the role of a polaroid in light polarization?

What happens to light when it passes through two crossed polaroids?

What is the phenomenon of scattering in relation to polarization?

What is the relationship between the speed of light and the medium it travels through?

What is the significance of the wavefront in Huygens' principle?

What is the effect of wavelength on the diffraction pattern?

What is the relationship between frequency and wavelength in light?

What is the role of the observer in the Doppler effect?

What is the significance of the central maximum in diffraction patterns?

What is the effect of using white light in interference experiments?

What is the relationship between the angle of incidence and the angle of refraction?

What is the significance of the path difference in interference?

What is the role of the aperture size in diffraction?

What is the relationship between the refractive index and the speed of light?

What is the effect of increasing the distance between slits in a double-slit experiment?

What is the significance of the angle of incidence in total internal reflection?

What is the relationship between the intensity of light and the number of photons?

What is the effect of temperature on the speed of sound?

What is the significance of the angle of refraction in optics?

What is the role of the lens in optical instruments?

What is the relationship between the wavelength of light and its color?

What is the significance of the diffraction limit in microscopy?

What is the effect of using a medium with a higher refractive index in microscopy?

What is the relationship between the speed of light and its frequency?

What is the significance of the wave equation in optics?

What is the role of interference in the formation of colors in thin films?

What is the significance of the critical angle in optics?

What is the effect of increasing the wavelength on the diffraction pattern?

What is the relationship between the intensity of light and the distance from the source?

What is the significance of the phase difference in interference patterns?