UNIT - IV:

LIGHT SENSORS

PSG College of
Technology, Coimbatore

SENSORS FOR ENGINEERING APPLICATIONS

23I202

Content of the Course – Sensors for Engineering applications 231202

STRAIN AND PRESSURE MEASUREMENT	ELECTRONIC SENSORS	MOTION SENSORS	LIGHT SENSORS	THERMAL SENSORS
Resistance strain gauge Piezoelectric pressure sensor, characteristics Electronic circuits for strain gauge load cells Interferometer Capacitance pressure sensor	Inductive, Capacitive and ultrasonic based proximity sensors Reed switch Hall-effect switching sensors Capacitive based humidity sensor Liquid level detectors, Flow sensors Smoke sensors	Capacitor plate sensor Inductive sensors LVDT Accelerometer systems Rotation sensors Piezoelectric devices for motion sensing Hall effect-based speed sensor.	Color temperature Light flux Photo sensors, Photo resistor and photoconductors, Photodiodes, Phototransistors, Photovoltaic devices, Fiber-optic sensors (FOS): Fibre-optic pressure sensor and its applications LIDAR	Bimetallic strip, Semiconductor based Temperature sensor, Thermocouples, Resistance thermometers, Thermistors, PTC and NTC thermistors Semiconductor-based applications. Infrared sensors: bolometer, Pyroelectric detector, semiconductor based IR sensors.

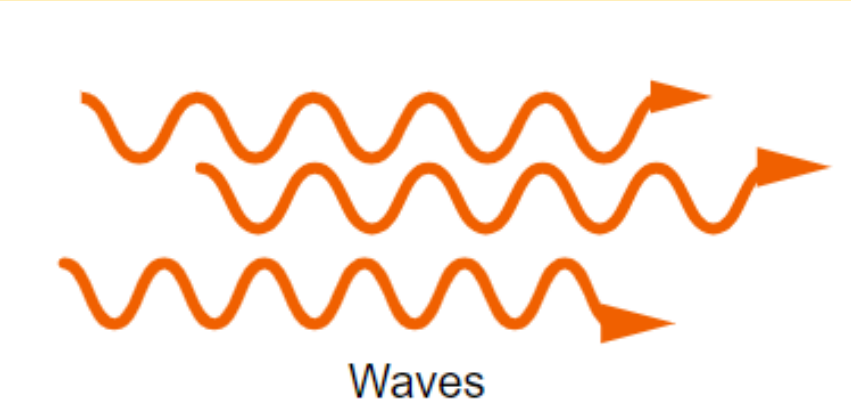
CONTENTS

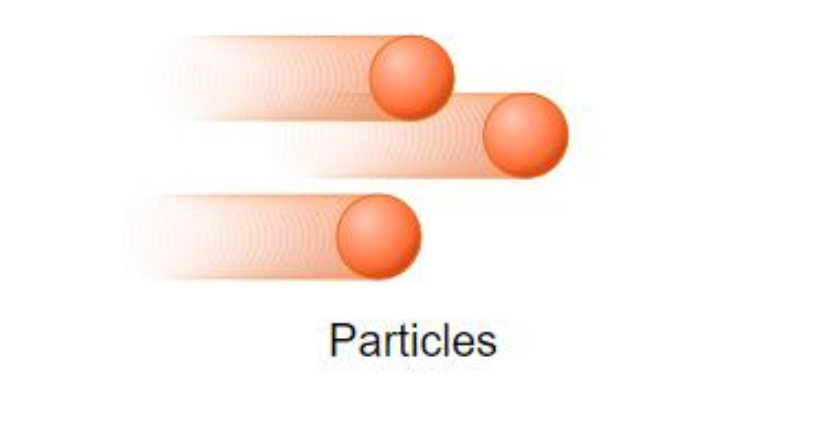
UNIT - IV

- Color temperature
- Light flux
- Photo sensors
- Photo resistor and photoconductors
- Photodiodes
- Phototransistors
- Photovoltaic devices
- Fiber-optic sensors (FOS):
  Fibre-optic pressure sensor and its applications
- LIDAR

What is Light ?

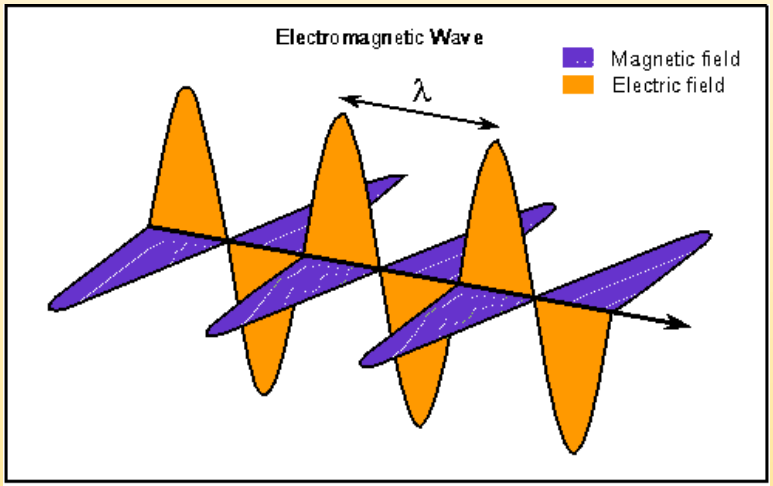
Light - Dual nature

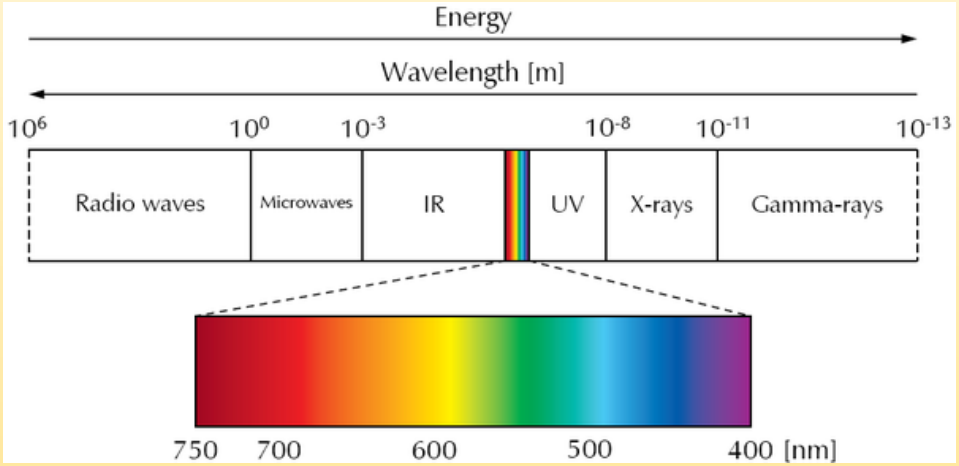




Light is a form of energy composed of **PHOTONS**

What is Light ?

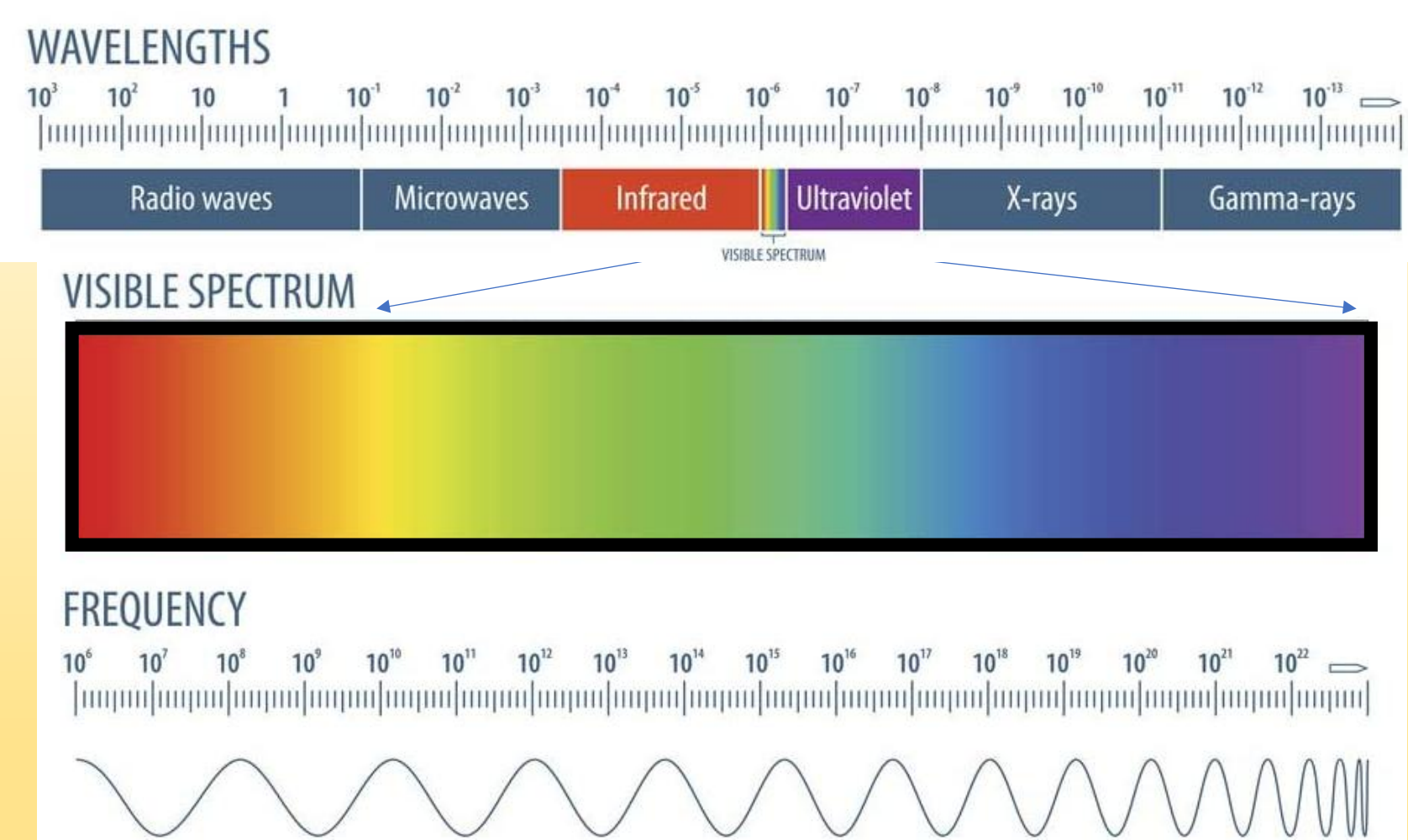




Light is an electromagnetic wave

Travels with the velocity
C= $3x10^8$ m/s

Electromagnetic Spectrum



LIGHT Travels with the velocity $C = 3 \times 10^{8}$ m/s

Electromagnetic Spectrum