

LASER →

Light Amplification by Stimulated Emission of Radiation

The first LASER was built by Theodore H. Maiman at Hughes research lab. in 1960 based on theoretical work by Charles Hard Townes and Leonard Schawlow.

LASER has so many scientific, medical, commercial & medical application.

Properties of LASER →

- * Line width of light by LASER is very narrow
- * Monochromaticity (It has single frequency & wavelength)
- * Coherence (It has same phase, frequency & wavelength)
- * High directivity
- * High intensity of beam
- * Stability of beam is excellent
- * High quantum efficiency
- * can travel very long distance
- * Narrow spectral width
- * It has very high modulation rate.

Characteristics of LASER →

You can find a number of characteristics of laser light over ordinary light source.

- (1) coherence
- (2) Directionality
- (3) Monochromatic
- (4) High intensity.

(1) Coherence →

Visible light receives its emission from excited electrons are moved down to the lower

(ii) Directionality \rightarrow

In conventional light sources like lamps, torchlights, electric bulbs etc. Photons move at random points. As such these sources scatter light in all possible direction. The laser emits light in a particular focused direction.

(iii) Monochromatic \rightarrow

Monochromatic light means a light beam which contains a single wavelength. Photons that originate from natural light sources contain a range of energies, wavelength and colors.

(iv) High intensity \rightarrow

Wave intensity is the energy flowing through a unit normal area per unit time. Light from an ordinary source spreads out in all direction. The light of a laser is focused in a particular direction.