

LASER

Light Amplification by Stimulated Emission of Radiation.

→ It refers to production of beam of radiation.

Characteristic of Laser

1) Monochromaticity (Single colour)

Laser are of a single specific wavelength and hence of a defined frequency.

In case of visible laser, a single pure colour is produced

Eg. → Rubi laser gives red light.

2) Coherence (Held together)

- Laser radiation is travelled in same phase, i.e., the peak and trough of electromagnetic field and occur at same time.

This is called "Temporal coherence".

- Further more, all rays travel in same direction, this is called "spatial coherence".

- The distance over which the wavelength is taken in the phase is called coherence length.

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It varies less than a millimeters to hundreds of meter.

3) collimation (parallel beam)

As a result of spatial coherence, laser remains in parallel beam.

The radiation do not diverse and the energy is propagated over a very long distance.

production of laser