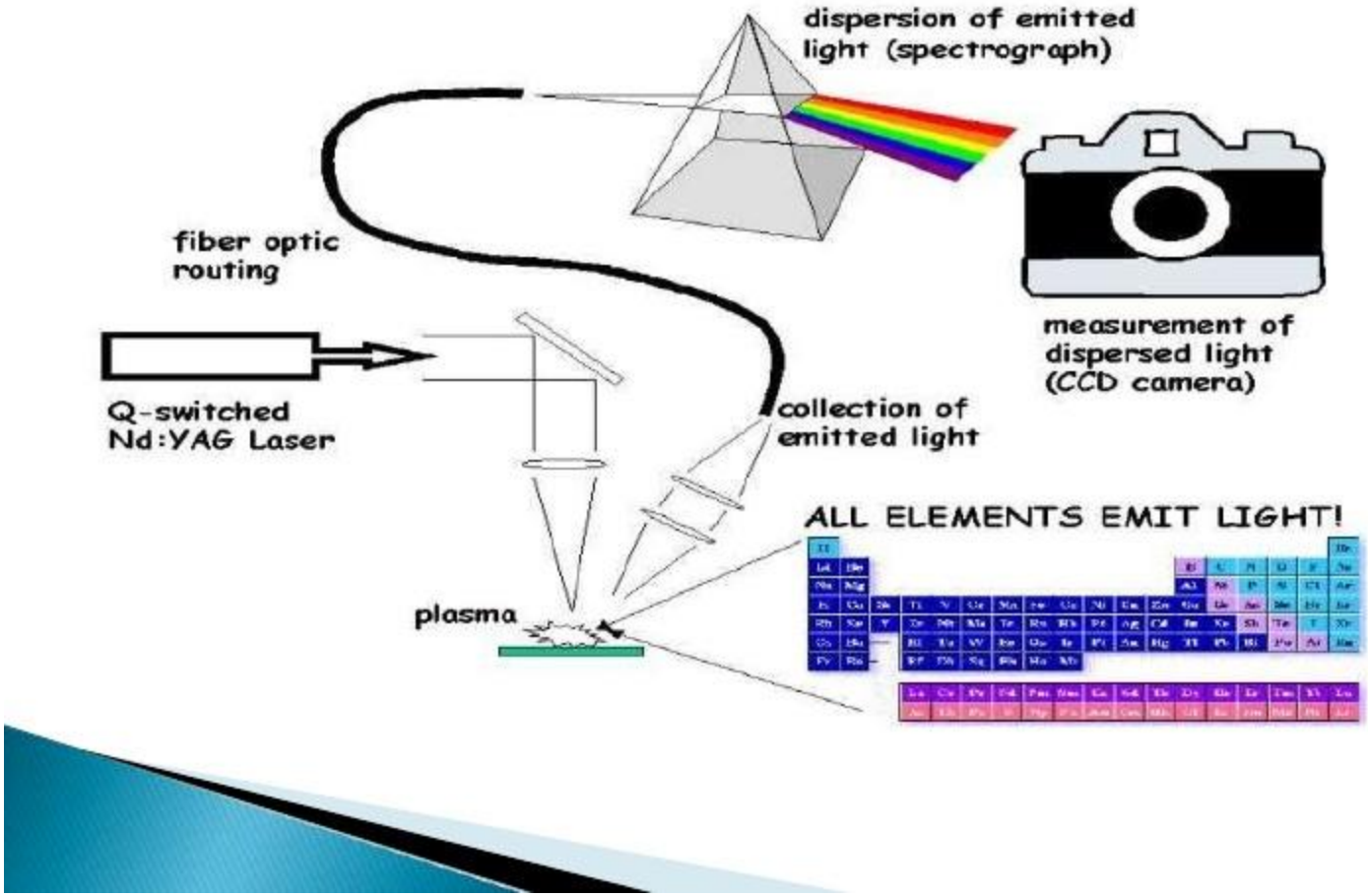
APPLICATION OF LASER
Unit-5

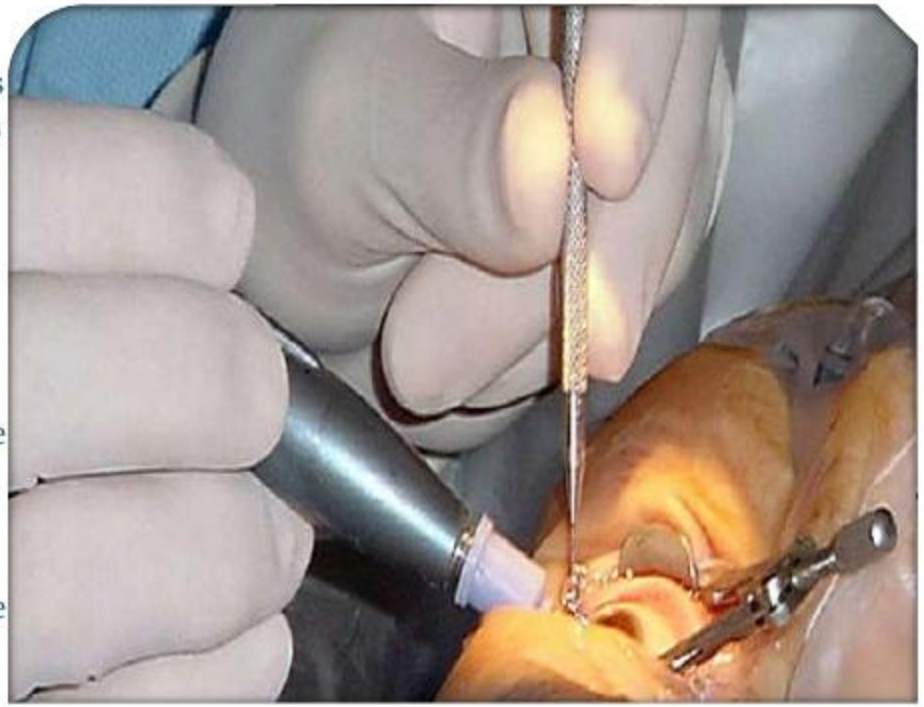
SPECTROGRAPHY



SPECTROSCOPY

Most types of laser are an inherently pure source of light; they emit near-monochromatic light with a very well defined range of wavelengths. By careful design of the laser components, the purity of the laser light (measured as the "linewidth") can be improved more than the purity of any other light source. This makes the laser a very useful source for spectroscopy. The high intensity of light that can be achieved in a small, well collimated beam can also be used to induce a nonlinear optical effect in a sample, which makes techniques such as Raman spectroscopy possible. Other spectroscopic techniques based on lasers can be used to make extremely sensitive detectors of various molecules, able to measure molecular concentrations in the parts-per-trillion (ppt) level. Due to the high power densities achievable by lasers, beam-induced atomic emission is possible: this technique is termed Laser induced breakdown spectroscopy (LIBS).

A cataract is an opacification or cloudiness of the eye's crystalline lens due to aging, disease, or trauma that typically prevents light from forming a clear image on the retina. If visual loss is significant, surgical removal of the lens may be warranted, with lost optical power usually replaced with a plastic intraocular lens (IOL). Due to the high prevalence of cataracts, cataract extraction is the most common eye surgery. Rest after surgery is recommended



CATARACT SURGERY

USES OF LASER IN LUNAR RANGING