

# RUBY LASER

The first working laser was built in 1960 by Maiman, using a ruby crystal and so called the Ruby laser. Ruby belongs to the family of gems consisting of  $Al_2O_3$  with various types of impurities. For example, Pink Ruby contains 0.05% Cr atoms. The schematic diagram of ruby laser can be drawn as

Construction →

Ruby laser is based on three energy levels and this laser consists of a pink ruby cylindrical rod whose ends are optically flat and parallel one end is fully silvered upon the rod is wound a coiled flash lamp filled with xenon gas.

The ruby rod is basically a  $Al_2O_3$  (aluminium oxide) crystal doped with 0.05% (by weight) of chromium oxide ( $Cr_2O_3$ ) the  $Al^{3+}$  ions are replaced by  $Cr^{3+}$  these impurity  $Cr^{3+}$  ions are responsible for the pink colour (or red colour) of ruby laser.

