

Material science and Metallurgy Lab

Material science and metallurgy focuses on the fundamental knowledge associated with material processing by analyzing the relationships among the synthesis, their properties, their detailed structure, their selection and applications.



Setup - 1 :Optical metallurgical microscope

Optical microscope is used extensively in study of metal and alloy structures, microelectronics, nanophysics, biotechnology, pharmaceuticals research, etc.

Microstructure is observed with help of high magnification power range from 100 X to 1000 X.



Setup – 2: Double disc polishing machine



It is used for dry or wet polishing of the specimen whose metal structure is to be observed.

Polishing is done with the help of smooth velvet cloth which is fixed on variable rotating disc.

Setup – 3: Muffle furnace

It is used to heat the metal specimen for the purpose of heat treatment process.

It has separate muffle and heating chamber (max. 1100°C) which keeps heating space separate from the combustion chamber which reduces the scaling and contamination from fuel.



Setup – 4: End quench test apparatus



This apparatus is used to know the effect of quenching medium on hardness of steel.

It is used to maintain hardenability of specimen. It is maintained with help of different quenching mediums like water, oil, brine, air, etc.

Setup – 5: Manual polishing stand

It is used to make smooth surface of the specimen for microscopic examination by fixing the different grades of emery papers on polishing stand.

