

METALLURGY AND MATERIAL SCIENCE LABORATORY

Metallurgical testing laboratory is equipped with metallographic facilities including wheel grinding and polishing of metal and ceramic samples. Polished and etched metal specimen can be analyzed through Inverted optical microscope equipped with digital camera and image analyzer.

Students will be able to understand the microstructures of ferrous and non ferrous metals processed at different conditions including heat treatment, corrosion and failure.

Laboratory has muffle furnace and Jominy End quench facility to study heat treatment, melting of metals. The complete study of structures is done in this laboratory and the equipments are:


- Metallurgical microscopes
- Metallurgical microscope with image analyzer
- Jominy end quench tester
- Belt Grinder
- Disk polishing machine
- Muffle furnace
- Specimen dryers
- Metallurgical specimens
 - Set of specimens contains: High carbon steel ,medium carbon steel, low carbon steel, Brass, phosphor bronze, aluminum bronze, Aluminum , Aluminum -12% silicon alloy, white cast iron, grey cast iron, Malleable cast iron, Nodular cast iron.

S.No	Name of major equipments	Photo
1.	Metallurgical specimens	 A photograph showing several metallurgical specimens arranged on a wooden surface. The specimens include small cylindrical objects, some in containers, and disc-shaped objects. A white block labeled "MICROSCOPE MODEL - 1000-3" is visible in the background.


S.No	Name of major equipments	Photo
2.	Metallurgical microscopes	 A photograph of a metallurgical microscope. The microscope is primarily black and white, with a large objective lens and eyepieces. It is mounted on a wooden surface. In front of the microscope, several objective lenses of different sizes and colors (white, black, and brown) are laid out. There are also some small containers and a power cord visible.

S.No	Name of major equipments	Photo
3.	Jominy end quench tester	 A photograph of a Jominy end quench tester. The machine is a dark grey, rectangular metal cabinet with a top-loading tank. On the front panel, there is a label that reads "JOMINY TEST APPARATUS" and a control panel with a digital display and buttons. The machine is positioned in a room with a window in the background.

S.No	Name of major equipments	Photo
4.	Belt Grinder	

S.No	Name of major equipments	Photo
5.	Disk polishing	 A photograph of a disk polishing machine. The machine is a large, rectangular, light-colored metal unit mounted on a thick concrete base. On top of the machine, there are two circular grinding wheels on the left and right, and a smaller central disk. Each wheel has a metal handle. The machine has two control panels on the front, each with a red switch and a black knob. The machine is situated in a room with a window in the background and a concrete floor.

S.No	Name of major equipments	Photo
6.	Muffle furnace	 A photograph of a muffle furnace, a black industrial oven with a control panel on top featuring a digital display, a red button, a black knob, and a green button. It is sitting on a concrete block.

S.No	Name of major equipments	Photo
7.	Specimen dryer	 A handheld specimen dryer, primarily white with pink accents on the handle and the nozzle. It is connected to a black power cord with a standard two-prong electrical plug. The device is lying on a light-colored wooden surface.

S.No	Name of major equipments	Photo
8.	Specimen mounting machine	 A photograph showing two identical specimen mounting machines placed side-by-side on a laboratory bench. Each machine has a white base with a circular dial and a green indicator light. A vertical metal rod rises from the center of each base, topped with a black handle. The machines are connected to power cables. The background shows a wooden wall and a metal shelf above the bench.

S.No	Name of major equipments	Photo
9.	Metallurgical microscope with image Analyzer	