

Materials Properties Lab



Device name: Mounting Press

Used for: this machine is used when we have small specimens, or specimens with irregular shapes, to mount a special resin material, to make it easy to produce next processes and microscopic examination.

Experiment associated with it : Metallographic Sample Preparation



Device name: Universal Hardness Tester

Used for: measures the resistance of a sample to material deformation due to a constant compression load from a sharp object

Experiment associated with it : Hardness Testing



Device name: Microscope

Microscope is used to study microstructure of different materials, magnification up to a screen by a digital video camera. a photomicrograph also can be taken by adding a special photo camera to microscope.

Experiment associated with it : Microscopical Examinations



Device name: Grinder - polisher

Used for: in this machine we use grinding papers with different grids to remove scratches, roughness and surface deformed layer to get smooth original surface. first we use coarse papers to remove maximum quantity of roughness, then fine papers are used to prepare specimen for polishing.

Polishing clothes with special solution of polishing powder (with grain size up to 0.25 micron) are used to get mirror surface.

Experiment associated with it : Metallographic Sample Preparation



Device name: Furnace

Used for: laboratory contains several furnaces to execute wide range of heat treatment processes.

Experiment associated with it : heat treatment experiment



Device name: Electric Furnace

Used for: to produce melting and heat treatment processes, max temperature 1100°C, chamber size 25*20*15cm.

Experiment associated with it: construction of phase diagrams



Device name: Vickers hardness tester

Used for: : measures the resistance of a sample to material deformation due to a constant compression load from a sharp object

Experiment associated with it: Hardness Testing



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Experiment associated with it: : Metallographic Sample Preparation



Device name: Microscope

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Experiment associated with it : Microscopical Examinations



Device name: 3D printer

used to create a three-dimensional object in which layers of material are formed under computer control to create an object.

Objects can be of almost any shape or geometry and typically are produced using digital model data from a 3D model or another electronic data source.

3D printing builds a three-dimensional object from computer-aided design (CAD) model by successively adding material layer by layer.

Experiment associated with it : Reverse Engineering