

Laboratory name: Slide preparation laboratory



The slide preparation laboratory provides services for preparing rock and mineral samples by making thin, covered, stained rock slides and polished sections using cutting machine, modification and smoothing devices, and a slide thinning device and studying them using microscopes. The laboratory also provides its services to support research and projects for faculty members, undergraduate students, and graduate students.

The laboratory includes the following devices:



Thin Section Preparation Laboratory



Slide preparation machine



Cutting machine

A cutting machine is a machine that cuts all kinds of rock.

Laboratory name: Sample grinding



The sample grinding laboratory is a laboratory used to prepare solid samples of various materials, such as rocks, minerals, soil, or others, by grinding them and turning them into small or very fine parts. These prepared samples are used for chemical or physical analysis to identify their components and evaluate their properties. The laboratory also provides its services to support research and projects for faculty members, undergraduate students, and graduate students. The laboratory includes the following devices:



Jaw crusher

A jaw crusher is a type of heavy-duty machinery used to crush rocks, ores, and other hard materials into smaller, more manageable pieces. It's commonly used in mining, construction, and recycling industries for the

initial phase of material reduction, where large pieces of material are broken down before further processing.



Tema mill

The Tema Mill is a laboratory grinding mill used for crushing, grinding, and pulverizing solid samples, such as minerals, rocks, ores, and soils.

Laboratory name: Sedimentary laboratory



Sedimentary lab analysis involves various tests and procedures to analyze sediment samples, providing insights into their composition, structure, and history.

1. Grain Size Analysis

Used to determine the distribution of different grain sizes within a sediment sample. The sample is passed through a stack of sieves with progressively smaller openings, and the weight of sediment retained on each sieve is measured using a standard sieve size and shaker machine.

2. Grinding Rock samples: grinding rocks using a ball mill is a key procedure in geological and mineral processing laboratories. The primary purposes of grinding rocks are:

1. **Sample Preparation:** To prepare rock samples for various types of analyses (e.g., chemical, mineralogical, and textural analysis). Finer particle sizes can improve the accuracy of these analyses.
2. **Mineral Liberation:** To liberate minerals from the rock matrix, making them accessible for subsequent processing or analysis. This is essential in mineral processing for ore beneficiation.
3. **Size Reduction:** To reduce the particle size of rocks for better handling and processing, and to meet the requirements for specific tests or processes, such as leaching or flotation.



Sieves- Shaker machine

Samples may need to be dried in an oven at temperatures ranging from 0 to 250°C to remove any moisture content before starting the sieving or grinding process on the ball mill.



The Oven (0 - 250°C)



Ball mill