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Product Name :
Fluidization And Heat Transfer

Product Code :
LBNY-0005-11600020



Description :

The Fluidization And Heat Transfer unit consists of a glass cylinder with a bottom chamber and a top assembly. The bottom chamber has as a built-in air distributor. The distributor can be replaced by a locally designed one for students and other investigations. Fluidization And Heat Transfer bench top equipment is for studying the behavior of a fluidized bed and heat transfer coefficient of a hot surface in a fluidized bed. The top assembly consists of an air filter and a heating element, temperature probes and a pressure probe. Compressed air from an outside source is supplied to the bottom chamber. The air fluidizes the bed material and escapes to the atmosphere through the top filter. A small air compressor is provided. The glass cylinder assembly is attached to a panel through the top assembly and can be easily removed and installed. The glass cylinder is partially filled with granular bed material. The air flow rate is measured by a rotameter. A water manometer measures pressure drop in the fluidized bed. The heating element and, temperature probes can move up and down at any position in the glass cylinder. Safety features include overheating and overpressure. A heating element is provided in the glass cylinder. Temperature probes are provided for measurement of heating element surface, fluidized bed and air inlet to the bottom chamber.

Technical Specification :

Experiments:

- To study the behavior of a fluidized bed for various types of granular materials.
- To investigate the effect of distributor design on the bed behavior.
- To demonstrate separation by particle size and density.
- To study changes in pressure drop vs air flow for various granular materials, both pack and fluidized beds.
- To study the effect of superficial velocity, depth of immersion, and granular size on the surface heat transfer coefficient by a hot surface in a fluidized bed.



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