

Product Code . JL-TWL-9117



Fluidisation and Fluid Bed Heat Transfer Unit

Description

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Application of fluidized beds is more widespread in the industry that is usually appreciated, covering such diverse fields as power generation to food processing.

The objective of the Fluidisation and Fluid Bed Heat Transfer Unit is to investigate the gas flow through a fixed and fluidized bed and to measure the heat transfer rate and coefficients for comparison with convective heat transfer rates in the air.

Fluidisation and Fluid Bed Heat Transfer Unit takes place within a transparent chamber and the range of bed material supplied can be rapidly changed.

Alternative locally sourced bed materials and air distributors can be easily utilized for student project work.

Experimental Capabilities:-

Observation of the behavior in a fluidized bed of a wide range of granular materials, from the onset of fluidization to entrainment.

Measurement of air flow and pressure drop through a variety of granular materials, as packed and as fluidized beds.

Investigation of the effect of:-

Superficial velocity

Depth of immersion

Particle size

Specification:-

Fluidised Bed designed for educational studies and using air as the fluidizing medium.

The unit incorporates a glass chamber containing the bed material and an electric heater for heat transfer studies.

High-quality glass reinforced plastic on which the following components are mounted:-

Variable Transformer to vary the heater power input.

Volt and Ammeter to indicate the heater power input.

Ranges 0 to 250 V and 0 to 3 A.

Flow Meters to measure airflow through the bed.

Range 0.15 to 3.5 litres/sec.

Digital Thermometer to indicate the temperatures of heater surface, air inlet, and probe.

Resolution 10C.

Manometer to measure pressure drop through the bed.

Safety Features include fusing and earthing of all components and heater temperature controller.

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