

Two-Dimensional Fluidization Hydrodynamics Educational Pilot Plant For Unit Operations Training

Item Number: LPK-2DLHC



Introduction

Explore gas-solid and liquid-solid fluidization hydrodynamics with our transparent 2D educational pilot plant. Ideal for chemical engineering unit operations labs, it demonstrates fixed to fluidized bed regimes, measures pressure drop, and integrates QR-code digital learning for enhanced student training.

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Equipment Component / Module	Technical Description & Utility	Corresponding Academic Concepts & Textbook Reference
Gas-Solid Fluidization Column	Transparent 2D vertical chamber equipped with a gas distributor, variable-speed air blower, and calibrated gas flow meter.	Flow of Fluids through Granular Beds; Fluidization (<i>Unit Operations of Chemical Engineering</i>)
Liquid-Solid Fluidization Column	Transparent 2D vertical chamber with a liquid distributor, quiet circulation pump, storage reservoir, and liquid flow meter.	Motion of Particles in a Fluid; Fluidization (<i>Transport Processes and Unit Operations</i>)
Differential Pressure Manometers	Multi-point pressure tap connections along the bed height linked to U-tube manometers or digital differential pressure sensors.	Pressure Drop in Packed Beds; Minimum Fluidization Velocity (<i>Unit Operations of Chemical Engineering</i>)
Digital Auxiliary Suite	QR-code physical plates and cloud-based student learning management interface with experimental video guides.	Modern Engineering Lab Practicum; Process Visualization and Simulation (<i>Chemical Engineering Design</i>)