

Harper International Press Release

Expanded Testing Capability at Harper's Technology Center

Pilot Fluidized Bed Reactor

More Process Solutions by the Harper International Team

Harper International announces the addition of a Pilot Fluidized Bed Reactor and an expanded offering of high temperature fluid bed technology to the Harper Technology Center in Lancaster, New York.

The installation of this fluidized bed reactor, combined with existing R&D lab furnaces (rotary, vertical, microwave rotary, graphite rotary, elevator—temperature range: 100°C to 2800°C) and cold modeling units, expands Harper's capability for process development within the chemical and material industries.

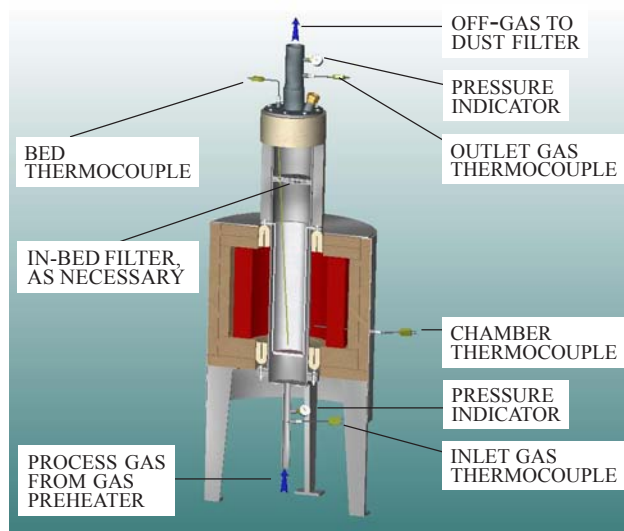
Harper's pilot reactor is capable of testing at temperatures up to 1000°C. Materials which can be processed include inorganic powder/granular, refractory metal or metal compound powder, precious metal compounds, carbon/graphite powder and granular, ceramics, nanomaterials, and catalysts.

The fluidized bed process offers several advantages:

- uniform temperature throughout the material bed by enhanced heat transfer
- improved gas-solid contact which results in faster rate of reaction
- uniform product quality from extensive bed mixing and controlled reaction conditions

Fluidized bed technology has been successfully applied to synthesis of materials via gas-solid or solid-solid reactions, coating via chemical vapor deposition, calcinations, sintering, thermal decomposition, thermal treatment, and drying.

Harper has been working together with its customers in fluidized bed process development, and has recently installed two sophisticated high temperature fluid bed systems. Our engineers have developed and designed fluidized bed reactor systems for particle coating, bio-mass pyrolysis, drying, calcination, and other applications.



PILOT FLUIDIZED BED REACTOR

Harper's R&D team helps develop and prove processes with its customers and generates process data for system scale-up design. The addition of fluidized bed process testing/development capacity along with proven process engineering and equipment design experience allows Harper to furnish total system solutions.

Harper employs a systematic and scientific approach to fluidized bed process development and scale-up. This includes bench scale testing to obtain the basic kinetic and thermodynamic data, followed by cold mock-up of actual, complete, or segment of final scale fluid bed geometry where necessary. The resulting fluid bed regime and reactor design is then subjected to extensive heat transfer and stress analysis modelling of components in systems. Harper understands the pitfalls in fluid bed scale-up process and is teamed with the leading consultants in specific fields when called for, ensuring a successful scale-up.

For additional information on Harper's pilot fluidized bed reactor, call Dr. Fenglin Yang at (716) 684-7400, ext. 110.

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