ALTAMIRA INSTRUMENTS

The First Name in Custom Reactor Systems

CUSTOM CATALYST TESTING INSTRUMENTS

BenchCAT 1000R HP

Application: ***Studies of hydrocarbon hydrogenation***

This unit consists of one fixed bed reactor for a gas phase hydrogenation reaction. The feed module can deliver three gases and one liquid. The reactor tube is stainless steel and can operate at temperatures up to 600 ^{O}C at 100 atmospheres. The reactor module uses a three-zone furnace and the flow can be operated in an up-flow or down-flow configuration. The reactor effluent is routed to a gas/liquid separator where analysis can occur. Safety features include a hydrocarbon detector integrated into the computer software prompting error messages, alarms, or automatic shutdown.

BenchCAT 4000R HP

Application: ***Studies of gas-phase reactions, such as methanol to formaldehyde.***

This unit consists of 4 parallel reactors with independent gas and liquid feeds. Each reactor features four gas feeds and 1 liquid feed with vaporizer. The reactor tubes can hold up to one gram of catalyst and are stainless steel with operating temperatures and pressures up to 600^{O}C and 30 atmospheres, respectively. All reactor effluents are routed through heated lines to a heated multiposition valve for sequential sampling into a mass spectrometer. Lexan covers are provided for added safety.

CUSTOM CATALYST TESTING INSTRUMENTS

Multi-Channel HTS Reactor

Application: ***Studies of ethylbenzene dehydrogenation.***

This unit consists of a single feed module split to eight parallel reactors. The feed module can deliver three gases and two liquids. Each of the liquids is pumped by a magnetic-drive mini-pump to a liquid mass flow controller. The liquids are mixed and then routed to a vaporizer-mixer capable of heating to 600^{o}C. The gases are introduced after the vaporizer-mixer. The feed is then evenly split to the eight reactor tubes using a set of matched capillaries. A single closure is required to seal all eight reactors. The reactor effluents are routed through heated lines to a condenser and a multiposition selector valve. Analysis of the products is accomplished by gas chromatography. The unit was designed to hold up to 10 mL of catalyst in each reactor and operate at 650^{o}C and 800 psig.

The Altamira *Advantage:*

- Altamira will customize these instruments to meet your exact research needs today.
- Altamira will customize these instruments in the future to meet your changing research needs.

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