

Automated Catalyst Characterisation

The Hiden Catlab PCS combined microreactor and mass spectrometer system is purpose designed for the characterisation and evaluation of catalysts together with general thermal studies including temperature programmed desorption and reaction testing. The modular benchtop system features an advanced fast-response low thermal mass 1000°C furnace together with multistream gas flow control of up to eight gas streams, and a precision Hiden quadrupole mass spectrometer with quartz inert sampling line close-coupled directly to the reactor for minimised dead volume and sample memory. Sample is inserted via the novel Catalyst Cartridge System to ensure consistent and reproducible sample loading, an in-bed thermocouple providing precise measurement of sample temperature and reaction exotherms.

The Pulse Chemisorption Mode uses the integrated rotary valve with quantified volume to admit discrete aliquots of single component or user-defined multiple component adsorbate gas to the sample to provide accurate adsorbate uptake measurement. Properties including adsorption isotherms, metal dispersion and surface acidity are readily determined, with the mass spectrometer providing continuous, simultaneous multicomponent product measurement.



CATLAB Integrated Micro-reactor

The system control is from a single integrated program, with control of all operating parameters and of data acquisition and presentation. Featuring a fully programmable automated analysis cycle, all system elements are designed and integrated to ensure optimum data authenticity. Four precision mass flow controllers, expandable for eight gas streams if required, regulate sample gas selection and flow rate. They can be configured for both corrosive and non-corrosive gases, with a choice of maximum flow rate between 50 and 500 mL/minute. The mass spectrometer measures both pre-entry and exit gases in real time for optimum differential measurement accuracy.

For further information on this or any other Hiden Analytical products contact Hiden Analytical at info@hiden.co.uk or visit the main website at www.HidenAnalytical.com.

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