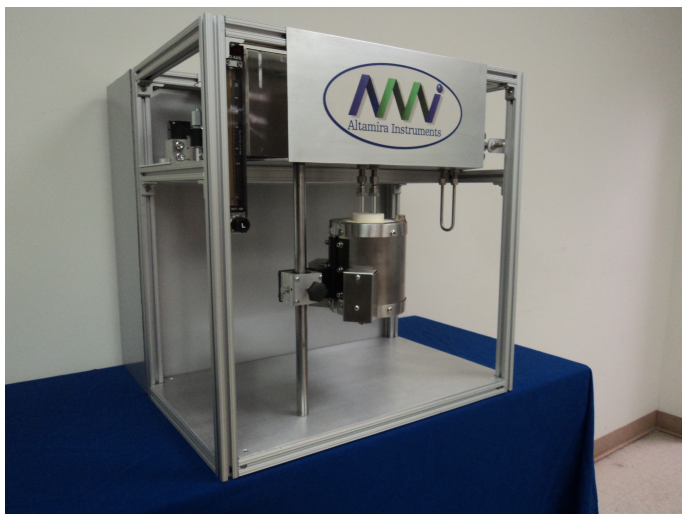




ALTAMIRA INSTRUMENTS

The First Name in Custom Reactor Systems

AMI-EZ Catalyst Characterization Instrument



Forty years ago, Altamira designed and built the first fully automated chemisorption system. The various AMI models have been known for high quality performance and long-term reliability. Always innovating with the latest features and software functionality, they have set the benchmark for others to follow.

But sometimes simplicity and basic functionality is all that is required. That's where the AMI-EZ fits in. For our users that don't require all the "bells and whistles" of our flagship AMI-300, the AMI-EZ offers the same reliability and testing capabilities of higher priced instruments, but at a fraction of the price.

The AMI-EZ

The AMI-EZ operates on an unattended basis and comes with our user-friendly LabVIEW designed software package for programming, monitoring, and data analysis. Also included with the system is a computer with the software loaded and various test methods ready to run.

For sample analysis, a high quality, linear Thermal Conductivity Detector is included, with heating capabilities up to 200°C to help prevent condensation and corrosion. Programming and monitoring is accomplished through the LabVIEW software.

The AMI-EZ can perform the following functions:

- Temperature programmed desorption (TPD)
- Temperature programmed reduction/oxidation (TPR/O)
- Pulse chemisorption
- Catalyst treatment
- Pulse calibration
- Gas phase reaction studies

Hardware and Operation

A high-quality programmable furnace is standard with heating up to 500°C with option for operation to 1200°C, including fast cool down capabilities.

Instrument layout was designed with the service engineer in mind. All components are easily accessible and of high quality with self-diagnostic features available through the operating software. Internal tubing has minimal dead volume through the use of 1/16 inch tubing and an optimized flow path to ensure the least sample lag-time possible.

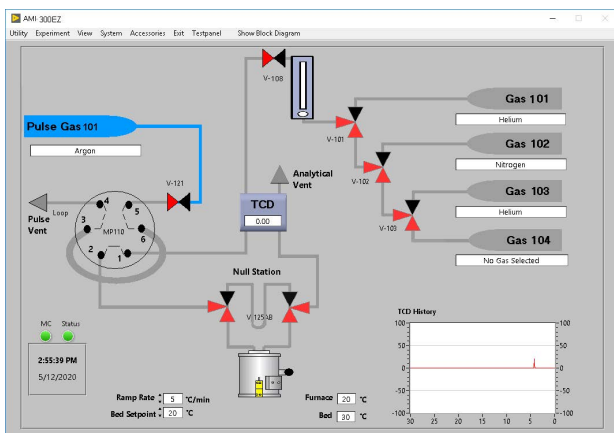
To prevent interference from any moisture formed during reactions, an analytical trap is provided down-stream of the sample holder that can be filled with a desiccant or set up as a cold-trap.

For sample calibration, a 500 µl loop is provided, or one of customer specification. If desired, a calibration run can be performed after your sample has been analyzed, automatically. This will assure fast and accurate calculations on all testing parameters from the LabVIEW analysis software.

Computer Control & Data Acquisition

The AMI-EZ comes with a LabVIEW based software package that automates operation of the system. The operation portion controls and regulates all valve positions, temperatures and detector parameters. Up to 99 methods can be programmed and run in sequence without the operators' presence. An overview screen shows the status of the unit and provides read outs and position of all valves, flow paths and temperatures.

A separate data analysis package performs all calculations for the user, based upon the data from each experiment. Software operations include peak-integration, calculating chemisorptive parameters, peak fit and overlay data. A full report on each run can be printed out.



Operating Screen - A complete overview of all experimental parameters

The data handling package allows the user to display and integrate signal peaks, calculate chemisorptive parameters, and overlay data.

Specifications:

Catalyst charge:	0.1 - 1 g
Temperature range:	25 to 500°C; 1200°C option
Ramp rate:	1 - 50°C/minute
Operating pressure:	Atmospheric
Gases:	5 inputs standard; option for 7
Gas flow rates:	15 - 150 Scc/min Rotameter w/ auto shut off
Reactor types:	Quartz u-tubes
Detector:	4 filament TCD with choice of filament type (W, Au/W)
Materials of construction:	Stainless steel & Viton seals; Option for Buna-N, or Kalrez
Dimensions:	W:64cm H:64cm D:64 cm
Weight:	120 lbs (55 kg)

Analysis Calculations Include:

Catalyst Uptake	Consumption
Crystallite Size	Percent Dispersion
Activation Energy of Desorption	
Percent Reduction/Oxidation	
Maximum Desorption Temperature	

