AMI-sync: Multi-Station Measurements at an Optimal Price/Performance ratio

The importance of surface area and pore size measurement for catalysis researchers can not be understated. Sample throughput for larger commercial labs and major research facilities are just as consequential to meet project deadlines and end-user demands. However, available lab space and initial capital expenditures is normally a balancing act when comparing this to the current analysis needs and older instrument upgrade requirements.

To help meet some the concerns of performance-throughput-lab space vs capital investment, Altamira Instruments has released a new product that combines BET surface area and pore size measurements into one-small economical package: the AMI-sync.

Typically, high-throughput physisorption instruments offer great flexibility such as: each measuring station has its own gas inlet, separate internal lines, individual manifolds and a separate dewar for temperature control of the measuring cell. The AMI micro and meso series are excellent choices when high-resolution isotherm measurements are required when different adsorptives must be used (e.g., N_2@77K, Ar@87K, CO_2@273 K etc.) in parallel. Due to the additional dewars and transducers, it is easy to restart an analysis while other measurements are running.

However, if this flexibility is not required, because the same adsorptive is often used or the laboratory space is limited, we offer you an alternative solution: the AMI-sync, which gives the user the ultimate in performance vs price.

With the new AMI-sync series, you can achieve high throughput results when you utilize up to four analysis stations. A separate p_0 measuring cell for simultaneous measurement of the saturation vapor pressure is standard. The stations and measuring cell are temperature controlled by a single dewar. Thus, the AMI-sync enables the highest sample throughput with the smallest possible bench-space requirement and minimum liquid nitrogen consumption. Depending on the sample volume, it can be constructed individually as a 1-, 2- or 4-station instrument. In addition, the number of pressure transducers can be configured at the measuring station. If the instrument is to be equipped with the fastest possible measuring configuration, a separate pressure sensor can be integrated in each of the four measuring stations. If measuring speed is not critical (e.g., for measurements overnight), the AMI-

sync can be equipped with only one pressure sensor for up to four measuring stations. In the most basic configuration, the AMI-sync 110, has three 1000 Torr pressure transducers (measuring station, manifold, and p_0 cell) with only one measuring station. For maximum sample turn around, six separate 1000 Torr pressure transducers are available (one per measuring station, manifold and p_0 cell) with four measuring stations. Depending on the price/performance ratio, a total of 6 pressure sensors can be integrated or as low as 3, resulting in 5 different models to help meet you best performance vs price situation (see Table 1).

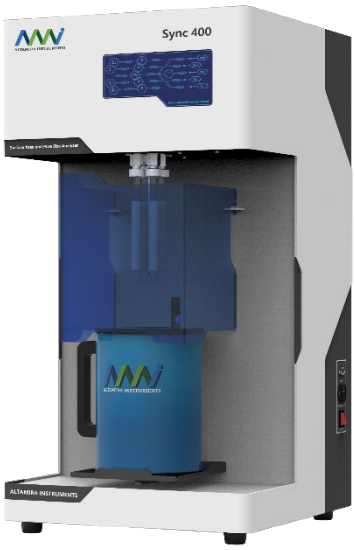

Figure 1 AMI-sync Sorption Analyzer

Table 1 Overview of different models of the AMI-sync series

Model	**Sync 440**	**Sync 420**	**Sync 220**	**Sync 210**	**Sync 110**
Analysis ports	4	4	2	2	1
Number of pressure transducers at the stations	4	2	2	1	1
p_0 transducer	1	1	1	1	1
Pressure transducers at the manifold	1	1	1	1	1
Pressure transducers total	6	4	4	3	3

Like our fully featured Physisorption products (AMI-meso and micro series), the instrument has a powerful software module for data acquisition, evaluation, and control. The intelligent dosing algorithm also displays kinetic data (pressure drop versus time, see Fig. 2) at the same time as the isotherm

measurement. This allows you to monitor the sorption process in real time or to interrupt the current measurement, to optimize dosing quantities, tolerance or equilibrium times.

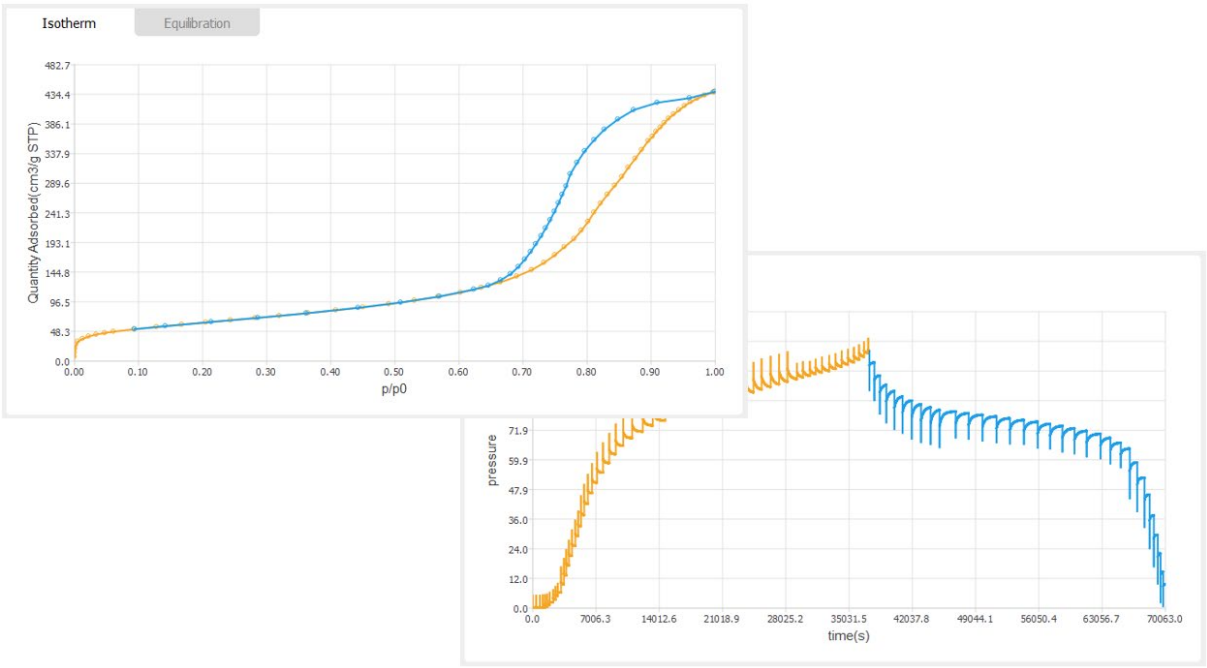

Figure 2 Live kinetics measurement: pressure vs. time with live adjusted (optimized) dose amounts (right) as well as the resulting isotherm (left)

For further information on the AMI-sync, please visit the link below or contact us via email or phone.

https://www.altamirainstruments.com/systems/9-physisorption-analyzers-the-ami-physi-family/25-ami-sync-series

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