

The brand new 3P sync series

Multi-station measurements at an optimal price/performance ratio

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Figure 1
Sorption analyzer from the 3P sync series

Introduction

In Particle World 19, we presented our 3P micro and 3P meso series of gas sorption instruments with up to four measuring stations. A major advantage of this series is its measuring flexibility: 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 3P micro and 3P meso series are an excellent choice when high-resolution microporous isotherm measurements are required or different adsorptives should be measured at different measuring temperatures (e.g., N₂@77K, Ar@87K, CO₂@273 K etc.) in parallel without loss of time. Due to this arrangement, it is simple and straightforward to restart a measurement while other measurements are already running.

Even if this flexibility is not required - because the same adsorptive is often used or the laboratory space is limited - we offer you a suitable solution.

Table 1 Model lines of the 3P sync series

Models	Sync 410	Sync 420	Sync 440	Sync 310	Sync 320	Sync 330	Sync 210	Sync 220	Sync 110
Number of measuring stations	4	4	4	3	3	3	2	2	1
Number of pressure transducers at the stations	1	2	4	1	2	3	1	2	1
P ₀ pressure transducers	1	1	1	1	1	1	1	1	1
Pressure transducers at the manifold	1	1	1	1	1	1	1	1	1
Pressure transducers total	3	4	6	3	4	5	3	4	3

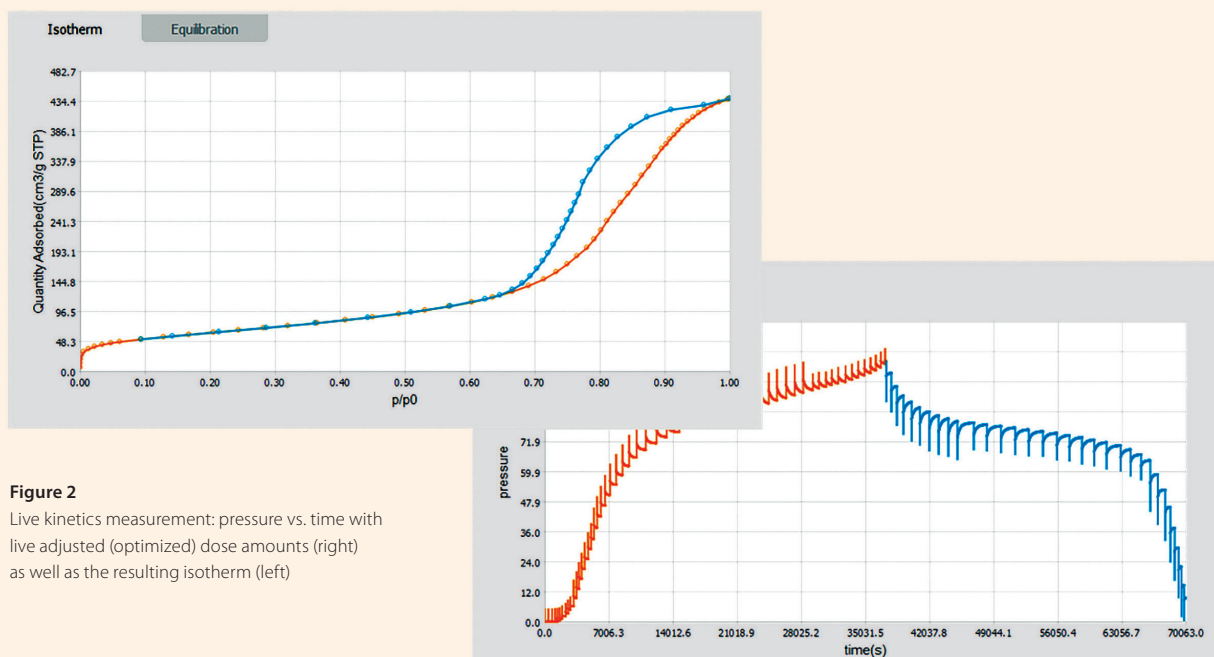
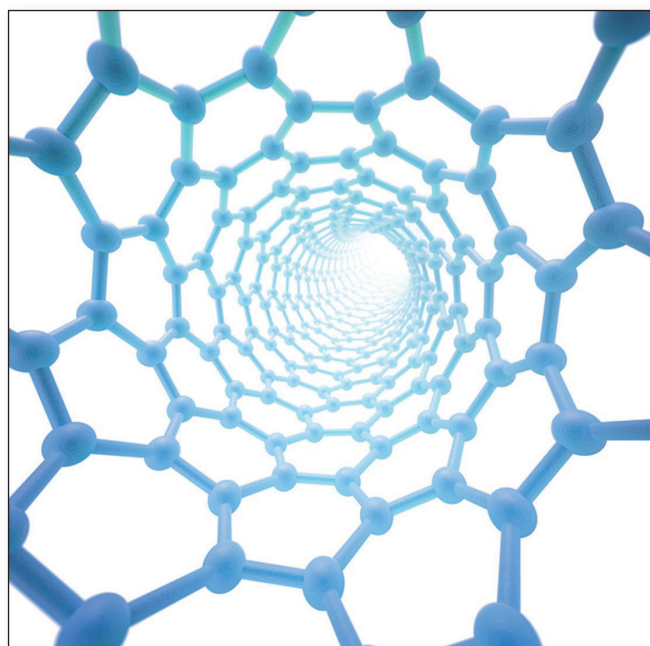
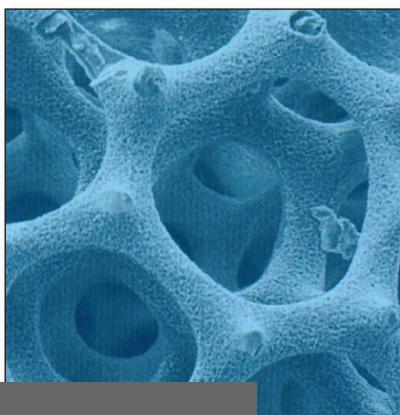


Figure 2

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

The new 3P sync-series

With the new 3P sync series, 3P Instruments now offers a new measuring instrument with up to four analysis stations and a separate P_0 measuring cell for simultaneous measurement (in sync, name-giving for the series) of the saturation vapor pressure. The stations and measuring cell are temperature controlled by one single dewar vessel. Thus, the 3P sync enables the highest sample throughput with the smallest possible space requirement and minimum liquid nitrogen consumption. Depending on the sample volume, it can be constructed individually as a 1-, 2-, 3- 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. In case the measuring speed is not relevant (e.g., for measurements overnight), the measuring instrument can be equipped with only one pressure sensor for up to four measuring stations. In the most basic configuration, the 3P sync 110 has three 1000 Torr pressure transducers (measuring station, manifold and P_0 cell) with only one measuring station and a maximum of six separate 1000 Torr pressure transducers (one per measuring station, manifold and P_0 cell) with four measuring ports for minimum measuring time. Depending on the price/performance ratio, also less than six pressure sensors can be integrated, resulting in nine different 3P sync model series, as shown in Tab. 1.



Like the 3P 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 to monitor the sorption process in real time or to interrupt the current measurement, e.g., to optimize dosing quantities, tolerance or equilibrium times.

Would you like to test measurements or arrange a device demonstration? Please contact us: info@3p-instruments.com or **+49 8134 9324 0**.

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