

## NEW XEMIS BROCHURE RELEASED

We have recently launched a revised brochure for the XEMIS series of gravimetric sorption analyzers. There are now four clearly defined XEMIS models available, each with different functionality and capabilities and suitable for different application areas.



The brochure is available to download on our website but please let us know if you would like a hard copy!

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### **XEMIS-001**

A high resolution pure gas sorption analyzer for precise characterization of sorption equilibria and kinetics at pressures to 170 bar. The XEMIS-001 operates with a wide range of gases including flammable, toxic and corrosive species, and features automatic decontamination and shutdown for rapid, safe sample exchange.

### **XEMIS-002**

High resolution gas and vapor sorption analyzer, with anti-condensation protection to 40 °C. Up to 4 pressure sensors may be selected, offering active pressure control over an unparalleled range.

### **XEMIS-003**

A versatile pure and mixed gas sorption analyzer with combined control of pressure, flow and gas composition. An optional vapor generator module allows water or organic solvent vapor to be blended with a gas mixture for complex measurements.

### **XEMIS-100**

Advanced gravimetric sorption analyzer for high resolution gas and vapor sorption combined with high pressure TGA. Integration with Hiden Analytical's range of quadrupole mass spectrometers allows analysis of evolved gas for in-situ TGA-MS and related studies.

# Characterizing Adsorbents for Gas Separations

An article entitled 'Characterizing Adsorbents for Gas Separations', written by Hiden Isochema Product Manager Dr Darren Broom, was published in the March 2018 issue of AIChE's Chemical Engineering Progress (CEP) magazine. The article covers the laboratory characterization of nanoporous adsorbents for gas separation applications such as pressure swing adsorption (PSA) and temperature swing adsorption (TSA). The various performance parameters and data required for PSA and TSA are discussed, including working capacity,

selectivity, and the heat of adsorption, together with the measurement techniques typically used to obtain this information. The article also discusses methods for measuring multicomponent adsorption and identifies future challenges in the field.



## REACH OUT TO US:

DATE	CONFERENCE	LOCATION
9-10 April	UK MOF conference	Southampton, UK
14-17 May	Interpore	New Orleans, USA
9-13 June	NAMS 2018	Kentucky, USA
1-6 July	Carbon	Madrid, Spain
9-12 July	BZA	Ambleside, UK
9-13 July	Euromembrane	Valencia, Spain
25-28 Aug	CHISA 2018	Prague, Czech Republic
27-31 Aug	ISSHAC-10	Lublin, Poland
3-6 Sept	PBAST	Sapporo, Japan
28 Oct - 2 Nov	MH2018	Guangzhou, China
28 Oct - 2 Nov	AIChE annual meeting	Pittsburgh, USA
9-13 Dec	MOF	Auckland, New Zealand

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# PUBLICATION ROUND-UP

## MOF Catalysts

**A highly stable and hierarchical tetrathiafulvalene-based metal-organic framework with improved performance as a solid catalyst.**

M. Souto, A. Santiago-Portillo, M. Palomino, I. J. Vitórica-Yrezábal, B. J. C. Viera, J. C. Waerenborgh, S. Valencia, S. Navalón, F. Rey, H. Garcia and G. M. Espallargas

Chemical Science  
2018, 9, 2413

Researchers at ITQ and the University of Valencia, and their collaborators, describe the synthesis of a novel, highly stable hierarchical MOF with potential application as a solid state catalyst. An IGA-003 was used to measure N<sub>2</sub>, CO<sub>2</sub> and CH<sub>4</sub> adsorption isotherms and determine the isosteric enthalpy of adsorption for these gases on the MOF, MUV-2, at several temperatures, as part of an extensive series of characterization measurements. The ability of MUV-2 to catalyze the aerobic oxidation of aromatic sulfur compounds present in diesel fuel was also demonstrated.

## Vapor Sorption

**Adsorption/desorption of 2,2,4-trimethylpentane on MCM-36 zeolite functionalized by acidic ionic liquid**

Y. Li, T. Zhang and S. Tang

Adsorption  
2018, 24, 179

An IGA-100 was used to perform a detailed study of the adsorption-desorption isotherms and kinetics of 2,2,4-trimethylpentane vapor on zeolite MCM-36 and the same material functionalized by an acidic ionic liquid. Vapor sorption isotherms were measured at several temperatures and the kinetic data recorded by the IGA-100 used to interpret the effect of the ionic liquid functionalization on the interparticle and intraparticle diffusion kinetics. The isotherms were also analyzed to obtain the isosteric heat of adsorption.

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