

IGASORP DELIVERS FOR POROUS MATERIALS

HIDEN
ISOHEMA

Why DVS is Essential for Porous Materials

Dynamic Vapor Sorption (DVS) reveals how porous materials interact with water vapor under relevant conditions – critical for applications such as dehumidification and atmospheric water harvesting. By linking sorption uptake, kinetics, and reproducibility to real-world performance, DVS enables confident selection and optimization of advanced adsorbents including **zeolites, MOFs, COFs, and carbons**.

Critical Use Cases

- ▶ Moisture uptake and hysteresis mapping
- ▶ Identify pore filling mechanisms and sorption capacity
- ▶ Temperature dependent sorption
- ▶ Cycling studies and long-term durability
- ▶ Identify hydration induced structural changes
- ▶ Competitive sorption selectivity – water and VOCs

IGAcorp: Rethink DVS. Unlock Better Outcomes

Key IGAcorp Features

DIVERSE CONDITIONS

- ▶ Pre-heater for sample regeneration – up to 350 °C
- ▶ Up to 300 °C for high temperature isotherms
- ▶ Wide humidity range (0 to 98 %RH) with ± 0.01 %RH control accuracy
- ▶ Sorption with water and organic vapors

PRECISION & SENSITIVITY

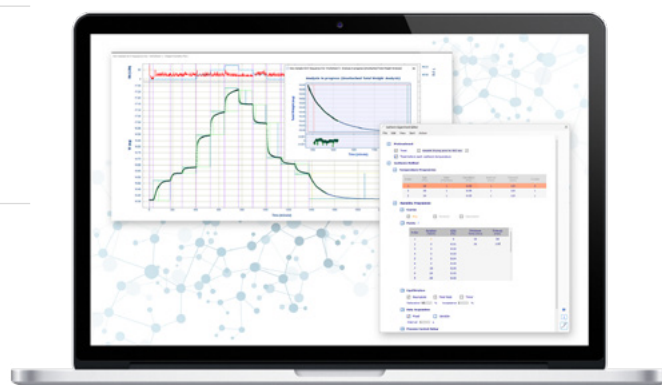
- ▶ **Unmatched sensitivity** – detect subtle changes with μg precision
- ▶ **Wide dynamic range** – capture high-capacity sorption

ADVANCED INSIGHTS

- ▶ Kinetic data modelling tools
- ▶ BET/porosity calculations

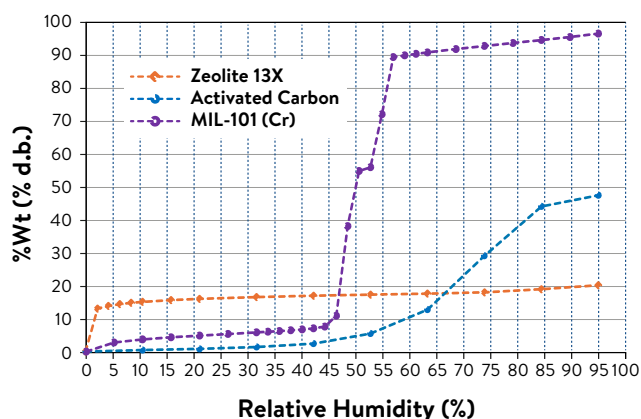


IGAcorp enables scientists to design and optimize advanced adsorbents for reliable performance in energy, environment and beyond

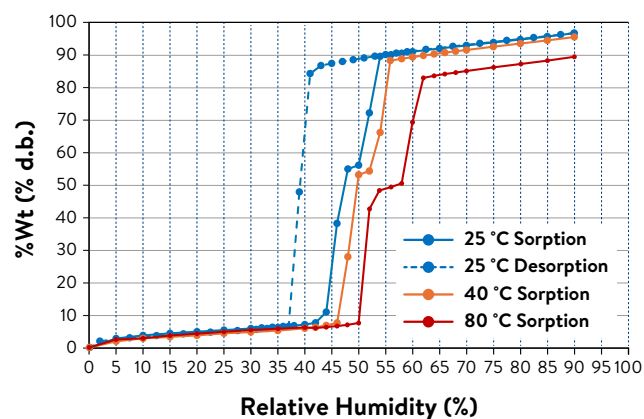


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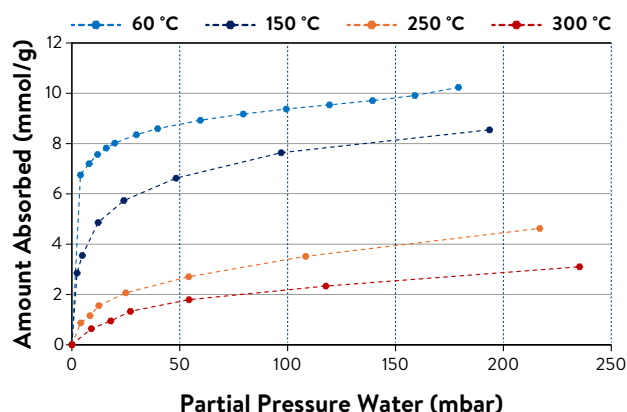
EXAMPLE DATA



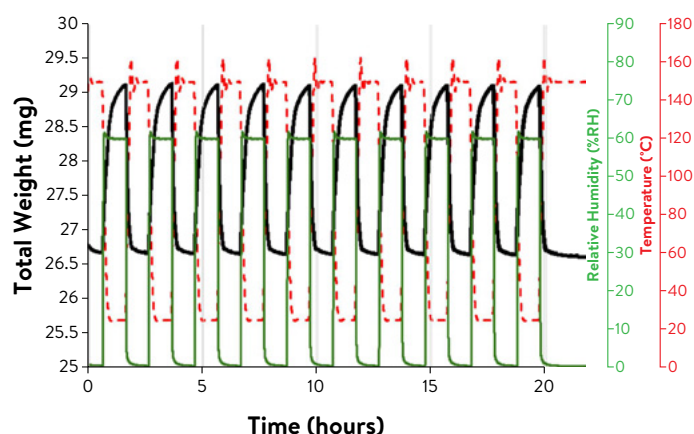
Water sorption isotherms measured at 25 °C for a zeolite (13 X powder), a MOF (MIL-101 (Cr)) and an activated carbon (NORIT ROW 0.8 mm pellets).



Temperature dependence of water sorption for MOF MIL-101 (Cr) with sorption isotherms at 25, 40 and 80 °C. A desorption isotherm at 25 °C is also presented.



High temperature water sorption isotherms for zeolite 13X measured at 250, 300 and 350 °C, with a corresponding lower temperature isotherm measured at 60 °C.

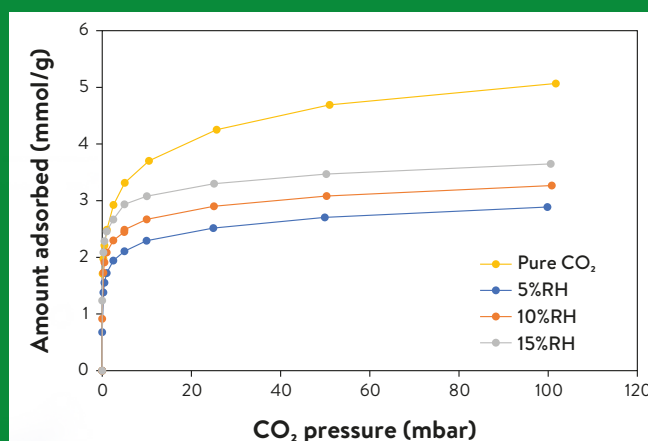


Cycling stability test for MOF MIL-101 (Cr). Following in situ drying at 150 °C, the temperature is reduced to 25 °C and humidity increased to 60 %RH. The sample is cycled between dry and humid states 10 times.

IGA ECOsorp

Dedicated gravimetric analyzer for carbon capture studies

Co-adsorption H₂O/CO₂ isotherms for an ion exchange resin together with the corresponding pure CO₂ isotherm. For each measurement, the sample was dried in situ and pre-equilibrated with water, prior to introduction of CO₂.



For more information please contact our Sales and Application team via info@hidenisochema.com

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