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High-Throughput Adsorption Contract R&D

Breakthrough Analysis – Atmospheric Air & Gas Purification

With over 20 years of expertise in high-throughput testing, Avantium accelerates research in (ad)sorbent development and gas-phase adsorption applications through our dedicated systems. Our high-throughput technology enables parallel screening of numerous adsorbents and adsorption process conditions.

Benefits

Accelerating your experiments by parallelization
Unparalleled reproducibility between columns
Scalable results by mimicking full scale conditions

Features

Small sample size
In situ pretreatment
Unparalleled RH% control
Flexible accurate gas & vapor dosing of multiple components
Fixed bed breakthrough experiments
Repeated cyclic adsorption and desorption
Analytics that fit to your application
Data mining and visualization

Applications

- Direct air carbon capture (DAC)
- Respiratory protection
- Evaporate loss control devices (ELCD)
- Air purification

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Atmospheric Air & Gas Purification Specifications

Process Condition	Range	Remarks
Adsorption temperature range	20 – 50 °C	
Desorption temperature range	< 180 °C	
Relative humidity	< 90 %RH	
Operating pressure	Atmospheric	
Sample volume	0.1 - 2.0 mL	
Flow	12.5 – 250 NmL/min	
Contaminant concentration	0.1 - 1000 ppm	
GHSV	500 - 20000 hr^{-1}	

Dedicated Service Process

Intake by detailed scoping process
Setup by scalable (ad)sorbent preparation
Analytical method development
Test program, executing the design of experiment (DOE)
Regular data reporting in pre-defined formats
Evaluation and close-out include support for data interpretation

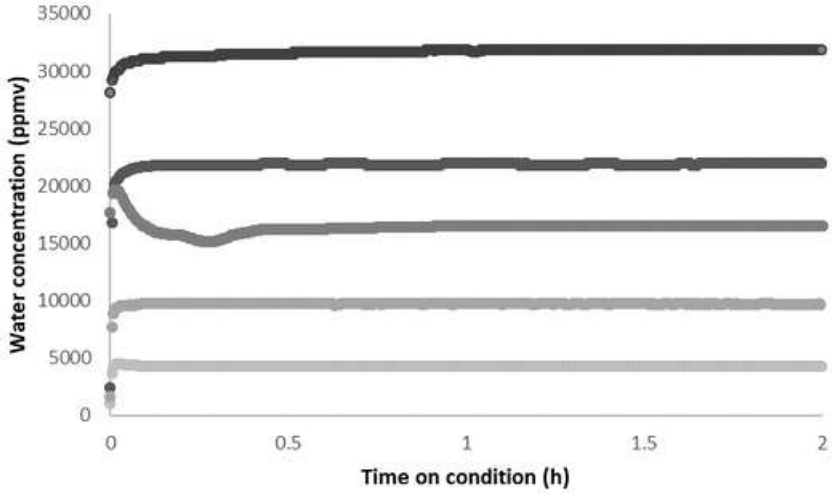
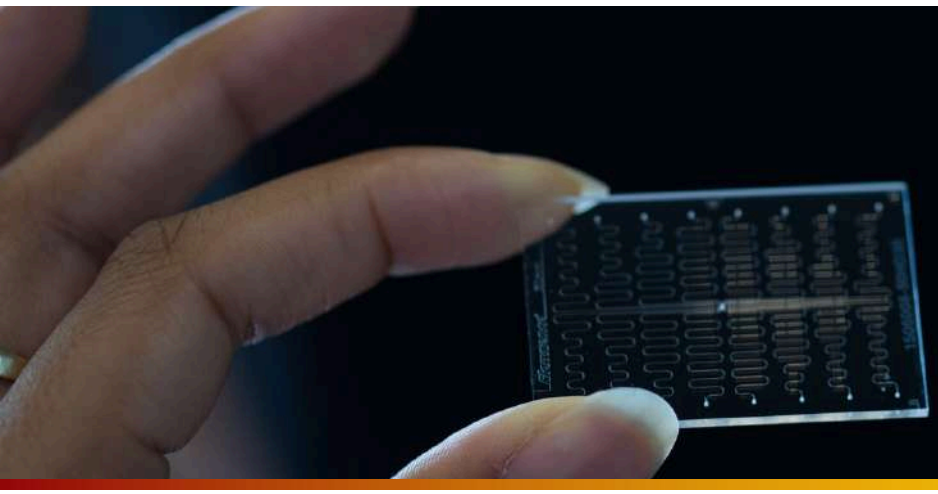


Fig: Example of typical achievable water concentrations and stabilities in the 17 – 30 °C. After 30 minutes +/- 0.5 %RSD



Avantium R&D Solutions is provider of advanced testing units and services. We provide leading producers and research institutes developing better and more efficient (ad)sorbents and catalysts with our high-throughput technology. We offer customized catalyst and (ad)sorbent testing systems & services.

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