

BSD-PH

High Pressure Gas Sorption Analyzer



BSD INSTRUMENT
FOCUS ON SORPTION

Main Function

- ◆ High Pressure Gas Adsorption Isotherm
- ◆ Adsorption PCT Curve
- ◆ Adsorption/ Desorption t-P/t-V Curve
- ◆ Langmuri Isotherm
- ◆ Freundlich Isotherm
- ◆ IAST Multi-component Competitive Curve
- ◆ Clausius-Clapeyron Adsorption Heat Curve
- ◆ High Pressure Equal Pressure Adsorption Kinetics
- ◆ Atmospheric Pressure Desorption Rate
- ◆ Temperature Programmed Desorption



from Vacuum to 200MPa/50MPa/69MPa

from -196°C to 900°C

Model

BSD-PH

High Pressure Gas Sorption Analyzer

- ◆ Test pressure range from 0MPa to 20MPa;
- ◆ Test port 1/2/4 (optional);
- ◆ Liquid Nitrogen Surface Constant System fit for 77K high pressure Hydrogen adsorption(Patent)

BSD-PHU

Ultra High Pressure Gas Sorption Analyzer

- ◆ Test pressure range from 0MPa to 50MPa/69MPa
- ◆ Test port 1/2 (optional);
- ◆ Suitable for Shale Gas, Coal-bed Gas and Hydrogen storage of adsorption research at the highest pressure in worldwide;
- ◆ Gas Pressure Booster System which range from 30MPa/60MPa/80MPa;

BSD-PHE

High Pressure and Equal Pressure Sorption Analyzer

- ◆ Test pressure range from 0MPa to 20MPa;
- ◆ Realize equal pressure adsorption kinetics analysis in volume method; (Patent)
- ◆ Support TPD rate analysis;

BSD-PHEM

High Pressure Sorption and Atmospheric Desorption Analyzer

- ◆ Add multiple MFC to analyze at atmospheric pressure multi-component gas desorption rate and TPD temperature;
- ◆ Support equal pressure dehydrogen module, which dehydrogen pressure from 0.01bar to atmospheric;

BSD-PHC

Cladding Pressure High Pressure Gas Sorption Analyzer

- ◆ Modelling of strati-graphic stress environment applied to whole core of rock and coal to acquire adsorption performance at stress background;

BSD-PHM

Multi-component High Pressure Gas Sorption Analyzer

- ◆ Multi-component gas competitive adsorption in volume method, solving adsorption of mixture gas laying (Patent)

BSD-PH High Pressure Gas Sorption Analyzer



BSD INSTRUMENT
FOCUS ON SORPTION

Main Parameter

◆ Test Pressure Range

from high vacuum to 690bar maximal;

◆ Temperature Range

from -196°C to 900°C ;

◆ Testing Accuracy

RSD <±2%;

◆ Combustible gas alarm

Built-in combustible gas alarm to ensure safety;

◆ Test Gas

Support H₂, Ar, CO₂, N₂, Kr, He, O₂, CH₄, C₂H₆, C₂H₄

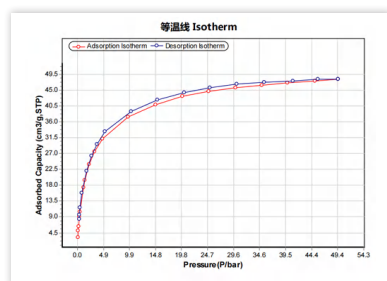
◆ Pressure Transducer Accuracy

Double transducer with 0.01%FS and 0.025%FS for longterm running; range from 10/40/200/500/690bar optional.

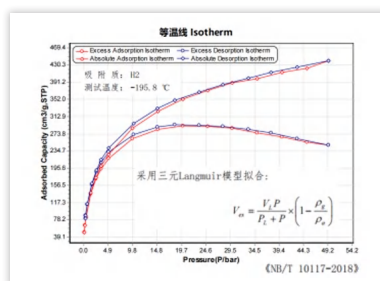
◆ Thermostatic System

Manifolds, valves and gas source are in the same air bath.Keep thermostatic at 40°C and temp control accuracy at 0.1°C .

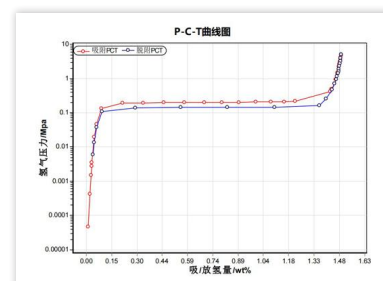
Test Reports



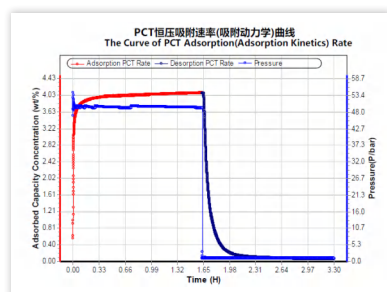
High Pressure Methane Adsorption Isotherm



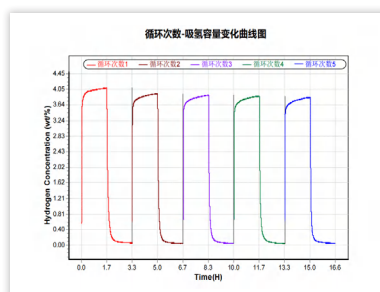
Hydrogen Adsorption and Desorption PCT Curve



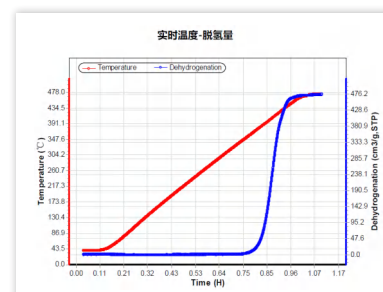
Absolute Adsorption Capacity Isotherm



High Pressure and Equal Pressure Adsorption Test Report



Auto-cycle Adsorption Test Hydrogen Adsorption and Desorption Lifetime Evaluation



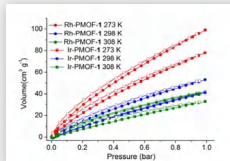
Auto-cycle Times Hydrogen Adsorption Capacity Change Curve

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Catalytic Space Engineering of Porphyrin Metal-Organic Frameworks for Combined CO₂ Capture and Conversion at a Low Concentration

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Title of Paper Published



Graph of Paper Published



WONIL T&L (Korea) Installation



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BSD-PHD

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