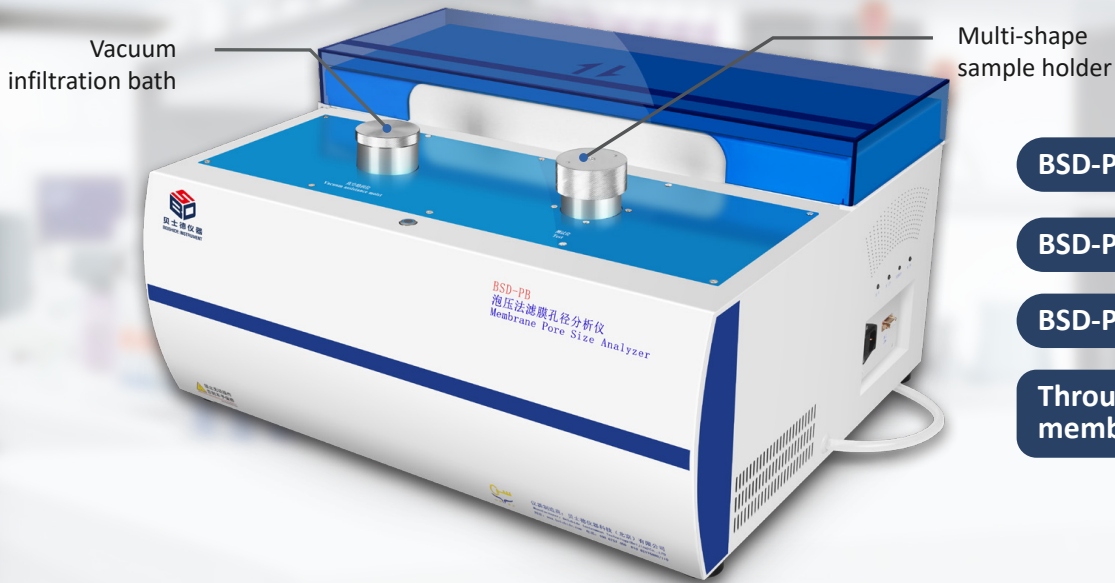


BSD-PB

Comprehensive Membrane Pore Size Analyzer



BSD INSTRUMENT
FOCUS ON SORPTION

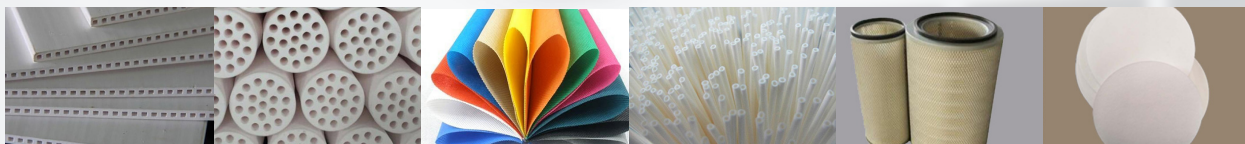


BSD-PB: 0.012um to 200um;

BSD-PBB: 0.12um to 200um;

BSD-PBL: 5nm to 50nm;

Through pore size and filter membrane flux



Test Function

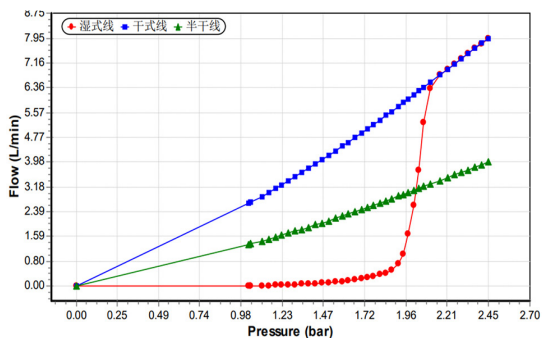
- ◆ Bubble pressure
- ◆ Max pore size
- ◆ Min pore size
- ◆ Mean pore size
- ◆ Most pore size
- ◆ Pore size distribution
- ◆ Liquid permeability (liquid-liquid displacement)
- ◆ Liquid flux (liquid-liquid displacement)
- ◆ Flow -pressure curve
- ◆ Gas permeability
- ◆ Gas flux
- ◆ Intact assessment
- ◆ Fiber membrane split pressure

Type of Membrane Sample

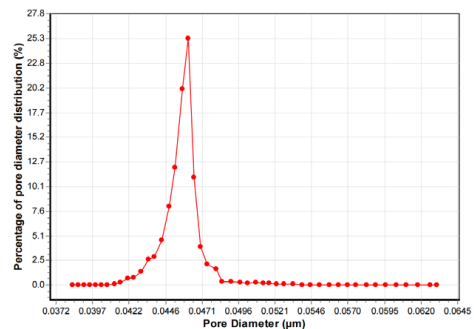
- ◆ Flat membrane (E.g. battery separator, carbon paper, nonwoven, filter paper, flat ceramic membranes, flat metal sintered membrane)
- ◆ Hollow fiber membrane
- ◆ Tubular membrane

Test Reports

The Curve of Flow-Pressure



Pore Diameter Distribution



BSD-PB Comprehensive Membrane Pore Size Analyzer



Test Principle

<p>待测材料 压缩空气 泡压法实验原理示意图</p>	<ul style="list-style-type: none"> ◆ Bubble Pressure Method: Apply pressure difference on both sides of the membrane to overcome the surface tension of the infiltration solution inside the membrane pores, driving the infiltration solution through the pores, based on this, the pore size data of the through-pore of membrane materials is obtained, which meets ASTM Standard.
<p>浸润液 固气界面增加、固液界面变化 液体界面 体积增加ΔV 气体压力P 泡压法孔径分析仪测试原理</p>	<ul style="list-style-type: none"> ◆ Liquid-liquid displacement: After completely immersing the tested filter material in the infiltration solution, a liquid immiscible with the infiltration solution is used as the displacement fluid to displace the infiltration solution from the through-pore. The pore size data of the filter material can be obtained based on the liquid flow and pressure data, according to the Washburn formula. Due to the much lower interfacial tension between liquid and liquid compared to gas-liquid, can test filter materials with smaller pore sizes ◆ Washburn formula: $D=4\gamma\cos\theta/p$ D for pore diameter, γ for surface tension of liquid, θ for contact angle, p for pressure difference. ◆ Flow rate percentage of pore size distribution: $f(D) = -d[F_w/F_d] \times 100 / dD$ Fw for infiltration sample flow, Fd for flow of dry sample

Standardization

BS 3321-1986	Method for measurement of the equivalent pore size of fabrics (bubble pressure test)	HY/T 051-1999	Test methods for hollow fiber microporous membranes
ASTM F316-03	Standard Test Methods for Pore Size Characteristics of Membrane Filters by	HY/T 064-2002	Test methods for tubular ceramic microporous filtration membrane
BS EN240003: 1993	Bubble Point and Mean Flow Pore Test Permeable sintered metal materials; (ISO 4003:1977)	GB/T 32361-2015	GB/T 32361-2015 Separation Membrane Pore Size Test Method Bubble Point and Mean Flow Methods

Technical Parameter

- ◆ Vacuum infiltration function, improve efficiency
- ◆ Different shapes of samples compatible
- ◆ All kinds of infiltration liquid options
- ◆ Dual flow sensors range to 1L/min and 200L/min, with 0.1L/min
- ◆ Dual pressure sensors, range to 50 psi and 500 psi with ± 0.002 psi
- ◆ All stainless steel pipeline, metal hard seal
- ◆ Fully automated and intelligent operation, no need for manual supervision, friendly human voice operation prompts
- ◆ Smart software, tracing the whole test

<p>Constructing Scalable Superhydrophobic Membranes for Ultrafast Water–Oil Separation Xi Quan Cheng, Yang Jiao, Zekun Sun, Xiaobin Yang, Zhongjun Cheng, Qing Bai, Yingjie Zhang, Kai Wang, and Lu Shao*</p> <p>Title of Published Paper</p>	<p>Graph of Published Paper</p>	<p>Gas Diffusion Factor Test for Cross-section of Overlay Membrane</p>
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