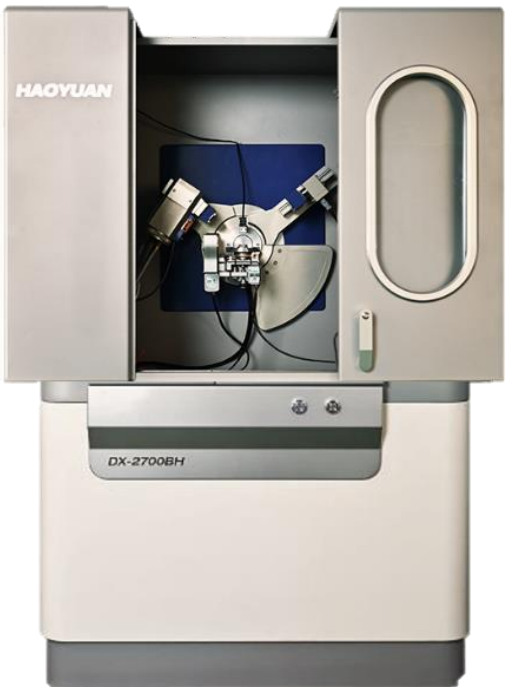
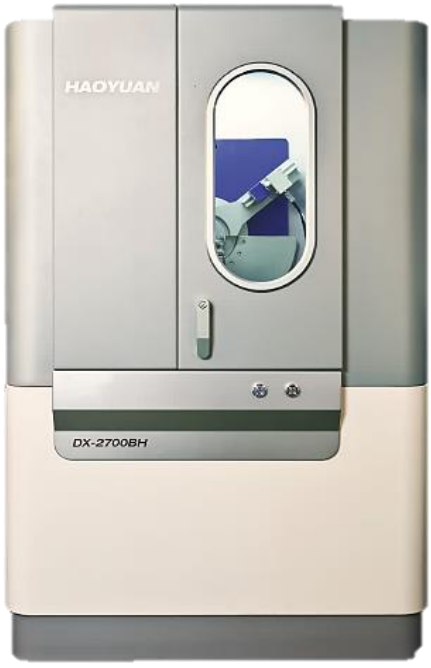
DX-2700BH X-Ray Diffractometer

Drafter of China X-ray diffractometer industry standard





Overview

Designed for materials science research and industrial product analysis, it is a perfect product combining routine analysis with special purpose measurement. Can analyze: metal materials, powder inorganic materials, composite materials, organic materials, nano materials, superconducting materials, samples, block samples, thin film samples, micro-region trace samples. Widely used in clay minerals, cement building materials, environmental dust, chemical products, pharmaceuticals, asbestos, rock ore, polymers and other research fields.

Application

- Phase identification in unknown samples
- Quantitative analysis of known phases in mixed samples
- Rietveld analysis.
- Analysis of crystal changes under unconventional conditions (high and low temperature)
- Thin film phase, multilayer film thickness, surface roughness, charge density
- Texture and stress analysis of metal materials

Attachments

- Multifunctional sample plate, DCX-6 sample changer
- LTK-400 Variable temperature attachment
- HTK-1600 High temperature attachment
- Laser positioning rotary sample plate
- Fiber measurement attachment
- Graphite monochromator
- In situ cell attachment
- Göbel mirror parallel light attachment

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Introduction

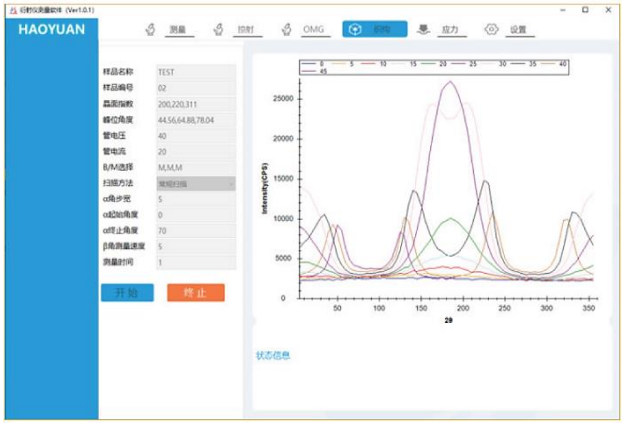
The instrument is manufactured with the most advanced technology, and the angle measuring accuracy and accuracy of the goniometer reach the advanced level in the world. The X-ray source and detector can work stably for a long time to ensure the accuracy and accuracy of diffraction peak position, peak shape and intensity measurement. It can be used for phase structure analysis, including high stability X-ray generator, high precision goniometer, closed proportional detector (or SDD detector, or 1D high-speed semiconductor array detector), data processing software, relevant application software, etc.

Features

- High-frequency high-voltage X-ray generator does not only improve the stability of the instrument, but also ensure the repeatability of the measured data.
- Configure the most advanced metal ceramic X ray tube, to ensure long service life.
- The goniometer θs and θd arms are driven by servo motor + photoelectric encoder control technology. The diffraction angle linearity is less than 0.02° in the diffraction angle measurement range.
- Complete attachments to expand the applications of DX-2700BH: high temperature, low temperature, multi-functional diffractometer, etc. All installed to realize "plug and play", and the software can automatically identify and control.
- Scattered ray protection is safer and more reliable; the radiation protection door is automatically prohibited from opening when the sample is measured. In any case, operators can be protected from scattered radiation.

XRD Control Software and THCMXPD

Can run under 64-bit Windows 10, automatically control the X-ray diffractometer; collect diffraction data to form ASC code data file to save; data file processing includes: automatic peak finding, manual peak finding, integrated intensity, peak Height, center of gravity, background subtraction, smoothing, peak shape enlargement, multiple drawing, half-height calculation, spectrum printing.



THCMXPD diffraction data processing software is a full-featured XRD data processing software, perfectly combined with the excellent performance of DX-2700BH, which can complete the following analysis:

- Qualitative phase analysis: quick check, classification search, phase finding, solid solution analysis.
- Quantitative phase analysis: Full pattern fitting quantitative analysis that does not involve crystal structure is an innovative method, and at the same time, the grain size of different crystal directions can be obtained.

Attachments

In addition to the basic functions of the DX series X-ray diffractometer, a variety of attachments can be quickly configured to provide excellent analysis capabilities. The high-precision mechanical production and processing technology greatly improves the reproducibility of the attachment installation position. The software can automatically identify the corresponding attachment, without the need to calibrate the optical path, therefore, the plug-and-play can be realized. With the DX-2700BH X-ray diffractometer equipped with various attachments, the simplest operation can meet the most special measurement needs.

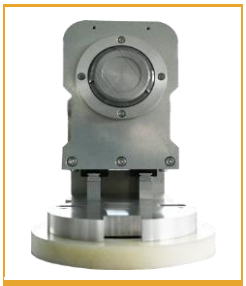
HTK-1600

LTK-400

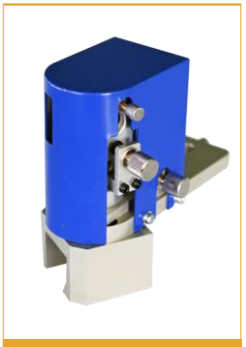
In situ cell attachment

DCX-6 sample changer

Multifunctional sample plate



Laser positioning rotary sample plate

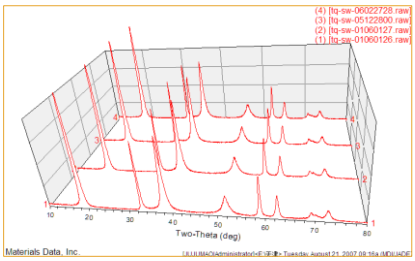


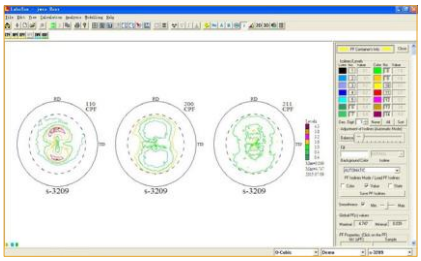
Graphite monochromator

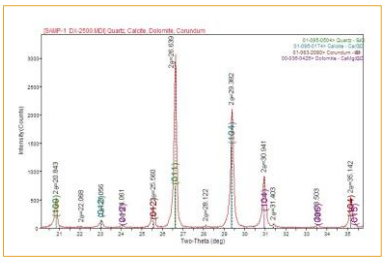
Fiber measurement attachment

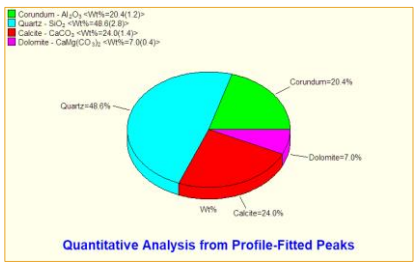
Applications

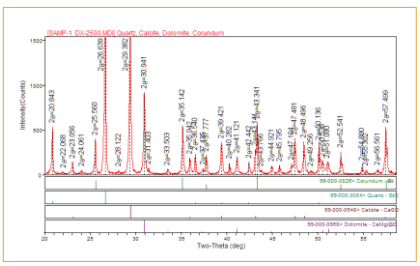
- Data processing software: It can identify diffractive data files generated by diffractors of different manufacturers all over the world, and process diffractive data perfectly.
- Phase structure analysis, including: phase content, grain size judgment, crystallinity, austenite content, unit cell determination, second-class stress calculation, diffraction line indexing, phase structure analysis, etc.; thin film material analysis, small angle Particle size analysis.

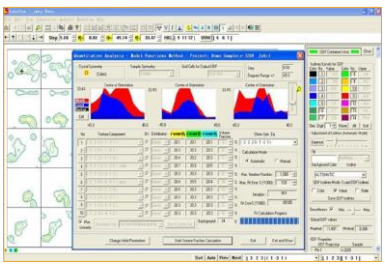












DX-2700BH X-Ray Diffractometer

National standard setting company of X-ray diffractometer

Power	Solid state X-ray generator:3kW		
Voltage	10 ~ 60kV		
Current	5 ~ 50mA		
Tube voltage and current stability	<0.005%		
X-ray tube	Cermet X-ray tube, target: Cu, Fe, Cr, Mo, etc. Power: 2.4kW. Focus: 1×10mm^2 (customizable). Water cooling (water flowrate>1L/min)		
Goniometer	Sample horizontal θs-θd structure		
Diffraction circle radius	185mm (customizable: 150 ~ 285mm)		
Measurement range	-6 ~ 160°		
Angular positioning speed	1500°/min		
Scan speed	0.0012° ~ 50°/min		
Scan mode	Continuous ,Stepping, Omg		
Minimum step width angle	0.0001°		
Angle repeatability	0.0001°		
Peak position accuracy	±0.02° (Standard sample, within the full spectrum)		
Detector	Closed proportional detector	SDD detector	Semiconductor array detector
Maximum linear count rate	5×105CPS	15×104CPS	9×107CPS
Energy resolution	≤25%	<187eV	≤1keV
Scatter dose	≤1μSv/h (Outside the X-ray protective device)		
Comprehensive stability	≤0.5%		
Dimensions	1120×870×1800 (W×D×H) mm		

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