

Beijing Purkinje General Instrument Co., Ltd.

Analytical Instruments for Science



XD Series Powder Diffractometer

Region One: Southeast Asia

Indonesia, Thailand, Malaysia, Philippines, Bangladesh, Pakistan, Sri Lanka, Nepal, Cambodia, Taiwan, HongKong, Singapore and other countries in Southeast Asia
Contact: Ms. May Guo
Tel: +86-10-69910665
Mobile: +86 13581878029
E-mail: may@pgeneral.com

Region Two: East Asia

South Korea, DPRK, Japan
Contact: Mr. Li Yongjian
Tel: +86-10-69910669
Mobile: +86 13904008480
E-mail: 13904008480@163.com

Region Three: Africa and Oceania

Africa, Oceania and Turkey
Contact: Ms. Ellie Zheng
Tel: +86-10-69910660
Mobile: +86 13910582189
E-mail: yun.zheng@pgeneral.com.cn

Region Four: Central Asia, Russia

Russia, the Republic of Belarus, Baltic States, Mongolia, Georgia, Azerbaijan, Ukraine, Kazakhstan, Kyrgyzstan, Tajikistan, Uzbekistan, Turkmenistan, Armenia, Moldova
Contact: Ms. Vivian Zhou
Tel: +86-10-69910663
E-mail: ruixue.zhou@pgeneral.com.cn

Region Five: Central, South America, Vietnam

Brazil, Mexico, Argentina, Peru, Columbia, Venezuela, Uruguay, and any other countries in Middle and South America, Vietnam
Contact: Mr. Marc Zhang
Tel: +86-10-69910572
E-mail: yanfei.zhang@pgeneral.com

Others

Contact: Ms. April Cao
Tel: +86-10-69910653
Mobile: +86 15801311891
E-mail: wenchuan.cao@pgeneral.com.cn



Beijing Purkinje General Instrument Co., Ltd.



Address

No.3 Pingsan Road, Pinggu District, Beijing, China 101200



Tel

+86-10-69910653



Fax

+86-10-69910516



E-mail

overseas@pgeneral.com

Beijing Purkinje General Instrument Co., Ltd.

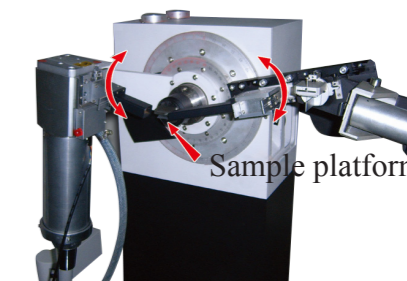
Excellent Design of Mechanical Security



X-ray emission source is fixed



θ - 2θ



Sample platform is fixed

θ_s - θ_d

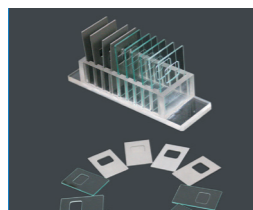
High Performance X-ray Tube Supplied by International Famous Brand



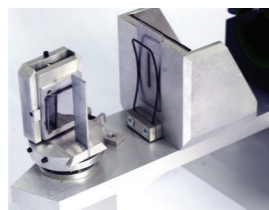
Scintillator Counter



Optional Accessories



Sample tablets



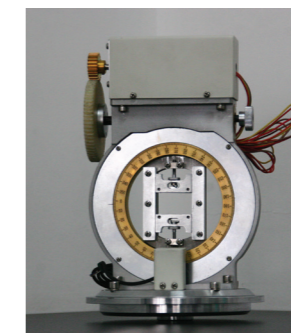
Curved graphite crystal monochromator



Punch machine



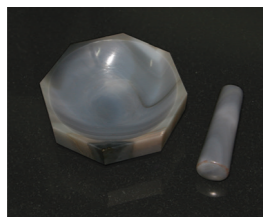
High temperature annex



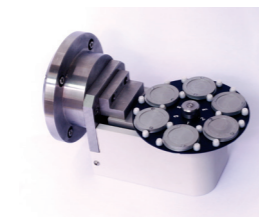
Φ Scanning Annex



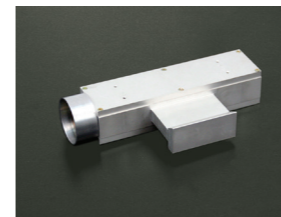
Automatic temperature control of circulating water cooling device



Agate mortar



Rotary sample platform

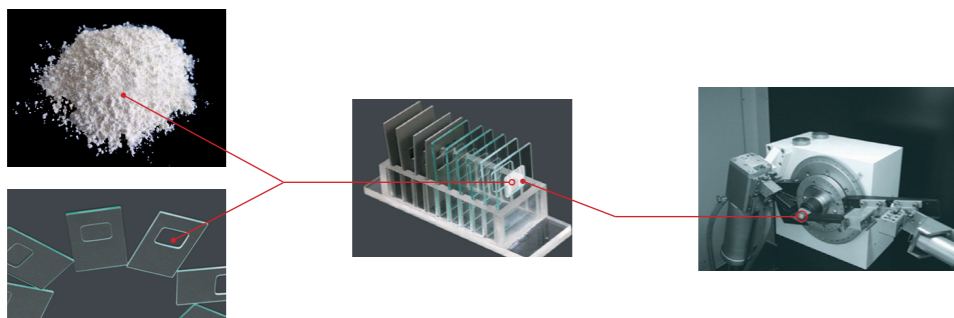


Parallel Beam Membrane

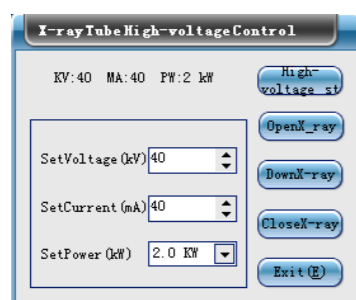
The composition and structure of materials could be studied and identified fundamentally by X-ray powder diffractometer, the applications are showed as follow:

1. The atom arrangement of all kinds of compounds in materials could be determined. Some particular performance of materials is related with atom arrangement.
2. Qualitative & Quantitative phase Analysis.
3. The ratio of all kinds of compounds could be determined.
4. Determine the grain size, stress, texture, orientation and crystallizability.

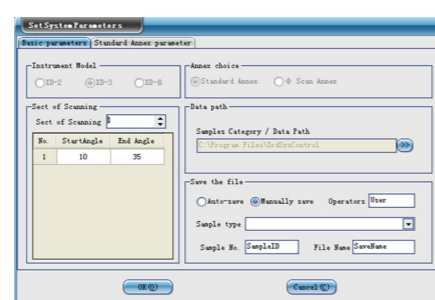
Analysis Process Description



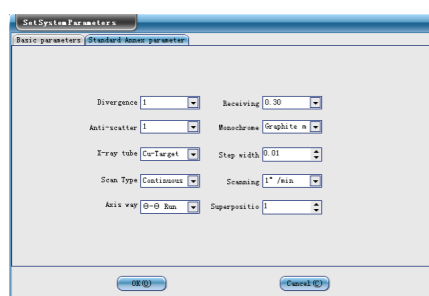
Data Acquisition



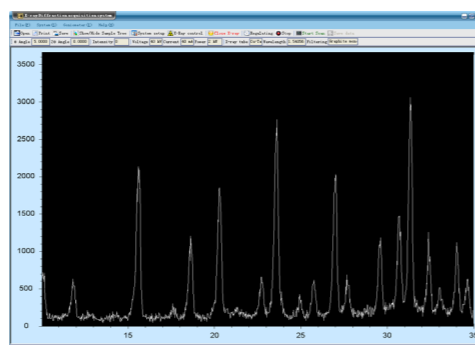
X-ray control



Scan parameters setting

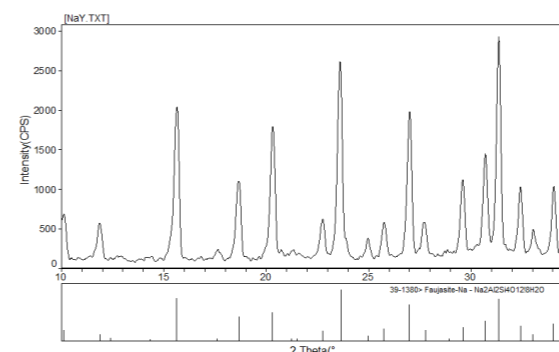


Scan parameters setting

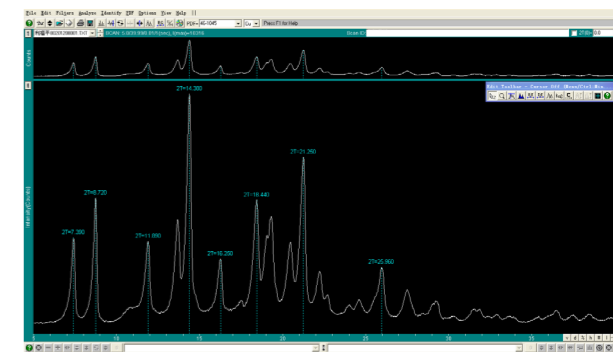


Intensity measurement

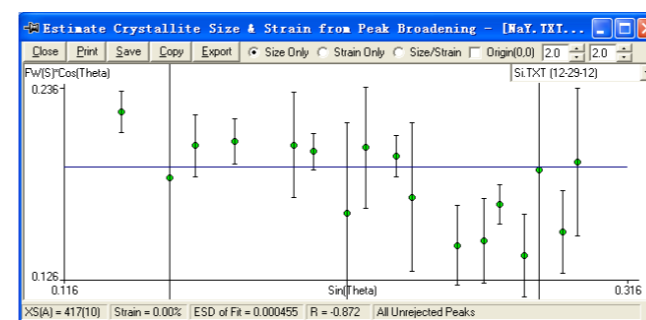
Data Analysis



Qualitative analysis



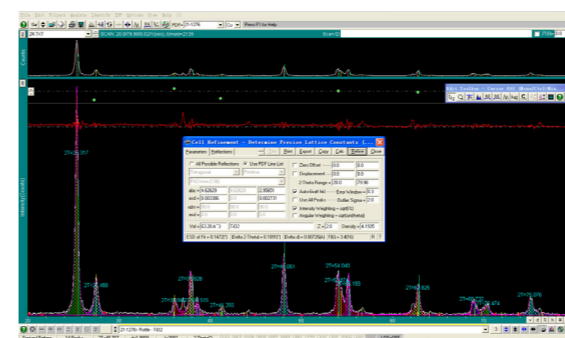
Peak search



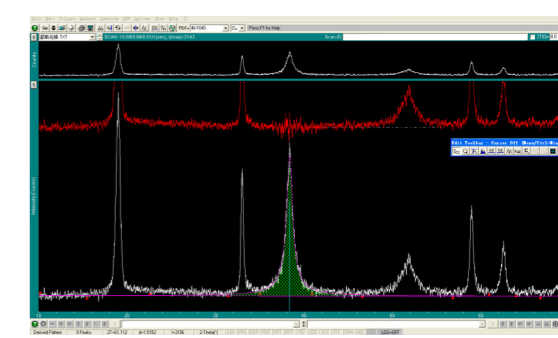
Grain size

2-theta	Height	Area	%	Shape	Width	FWHM	Peak	Width
27.69(0.009)	3.2198(0.002)	27.694	95.4(4.5)	36.6	0.546	0.143	0.204(0.021)	0.510
28.59(0.006)	3.0174(0.001)	28.596	76.3(2)	86.4(4.6)	27.8	1.148	0.300	0.183(0.010)
30.67(0.006)	2.9117(0.001)	30.673	10.6(2.9)	1.959(9.5)	60.0	0.900	0.140	0.190(0.011)
31.34(0.004)	2.8919(0.001)	31.325	20.1(4.6)	2.533(9.3)	80.2	4.000	0.282	0.207(0.005)
32.41(0.006)	2.7959(0.000)	32.387	6.78(2.1)	7.863(4.6)	30.1	1.451	0.610	0.179(0.010)
33.01(0.007)	2.7111(0.003)	33.012	61.1(10)	61.2(1.5)	12.0	1.525	0.623	0.092(0.017)
34.04(0.007)	2.6214(0.001)	34.015	68.3(21)	7.724(6.9)	28.3	2.762	0.539	0.192(0.011)
34.66(0.009)	2.5954(0.001)	34.611	3.0(1.9)	4.279(4.0)	16.4	4.000	0.777	0.234(0.021)
10.139(0.021)	8.7179(0.056)	10.037	38(11)	8.71(6.2)	32.1	4.000	0.815	0.362(0.038)
16.659(0.044)	6.6544(0.026)	15.608	13.9(2.4)	20.99(4.7)	80.1	2.253	0.689	0.253(0.005)
11.846(0.009)	7.4644(0.007)	11.842	37(2.9)	10.79(4.5)	41.2	0.513	0.081	0.182(0.016)
21.383(0.009)	4.1520(0.034)	20.921	6.8(3)	15.174(8.2)	58.2	0.500	0.633	1.722(0.20)

Crystallinity



Cell parameters



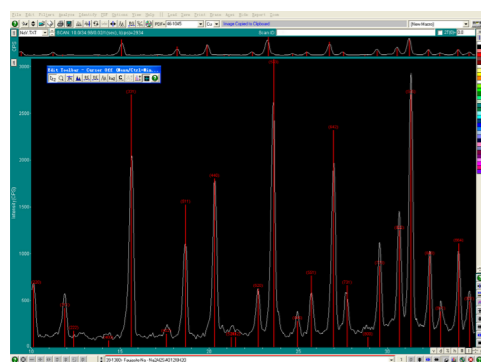
FWHM

Molecular sieves

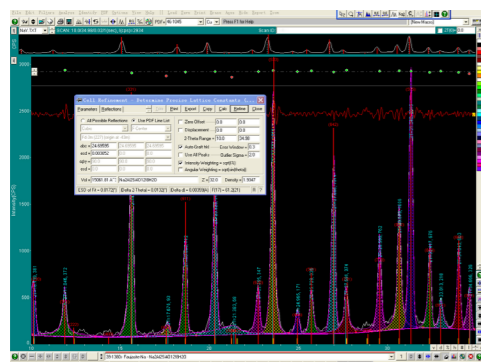
A, Y, ZSM, other types of molecular sieves.

1. Qualitative & Quantitative phase Analysis.
2. The ratio of all kinds of compounds could be determined. E.g. Si-Al ratio.
3. Determine the grain size, cell parameters, and crystallinity etc.

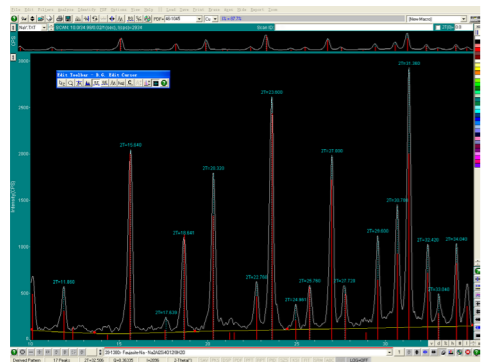
Data Analysis



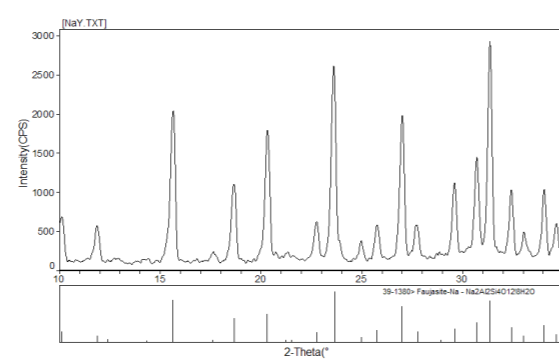
Qualitative analysis



Cell parameters



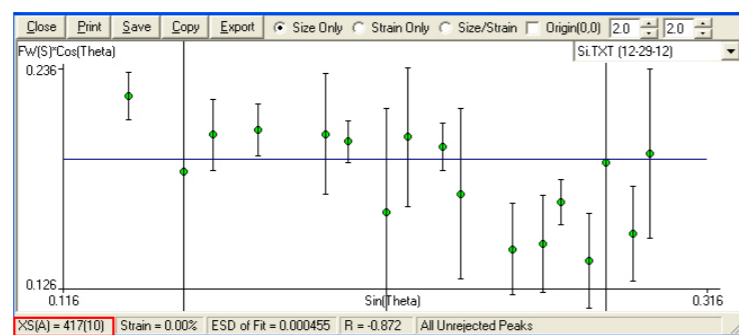
Peak search



Qualitative analysis

2-Theta	d(hkl)	Centroid	Height	Area	LS	Skew	FWHM	Breadth	XS(A)
27.631(0.009)	3.2188(0.0022)	27.634	374(22)	9540(455)	36.6	0.594p	0.143	0.204(0.021)	0.510
29.588(0.006)	3.0174(0.0012)	29.586	762(32)	9864(487)	37.8	1.148p	0.300	0.183(0.010)	0.259
30.679(0.006)	2.9117(0.0010)	30.673	1006(39)	15659(658)	60.0	0.900p	0.140	0.190(0.011)	0.311
31.340(0.004)	2.8519(0.0007)	31.325	2015(43)	23538(632)	90.2	4.000p	0.282	0.207(0.005)	0.224
32.417(0.005)	2.7559(0.00059)	32.387	676(31)	7582(446)	30.1	1.451p	0.610	0.172(0.010)	0.233
33.013(0.019)	2.7111(0.0030)	33.039	219(15)	3121(463)	12.0	1.505p	0.383	0.226(0.037)	0.286
34.043(0.007)	2.6314(0.0010)	34.015	663(31)	7372(469)	28.3	2.762p	0.539	0.192(0.011)	0.222
34.668(0.009)	2.5854(0.0013)	34.611	320(19)	4275(403)	16.4	4.000p	0.777	0.234(0.021)	0.262
10.139(0.021)	8.7175(0.036)	10.037	381(17)	8371(621)	32.1	4.000p	0.815	0.392(0.028)	0.439
15.659(0.004)	5.6544(0.0029)	15.608	1388(24)	20905(471)	80.1	2.253p	0.689	0.253(0.005)	0.301
11.846(0.008)	7.4644(0.0097)	11.842	372(19)	10759(356)	41.2	0.919p	0.081	0.198(0.016)	0.578
21.393(0.009)	4.1520(0.0042)	20.921	68(3)	1517(482)	59.2	0.900p	0.633	1.722(0.230)	4.463

Crystallinity



Grain size

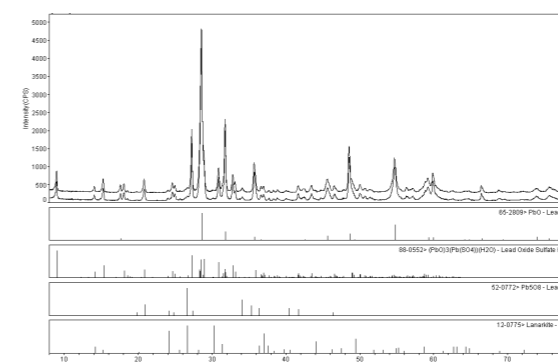
Battery

Battery: Lithium, lead, NI-MH battery, other types of battery;

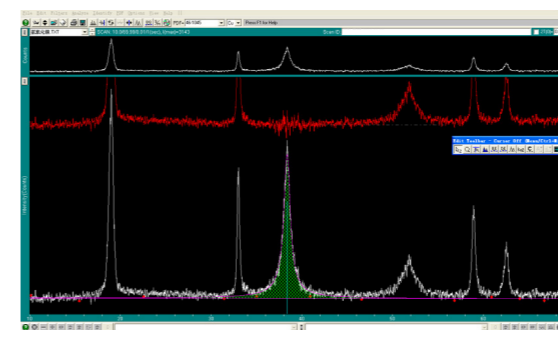
Battery material: e.g. graphite.

1. Qualitative & Quantitative phase Analysis.
2. Graphitization degree.

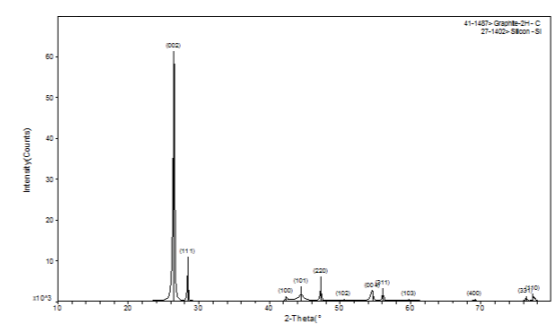
Data Analysis



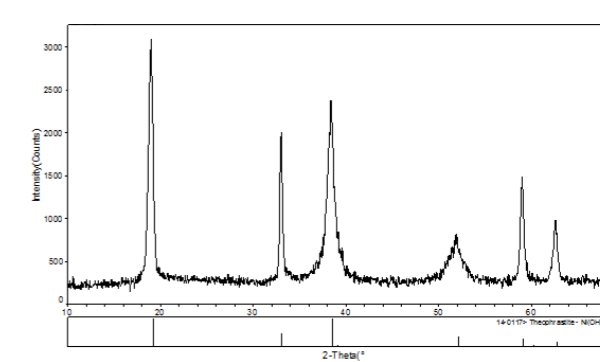
Qualitative analysis (lead battery)



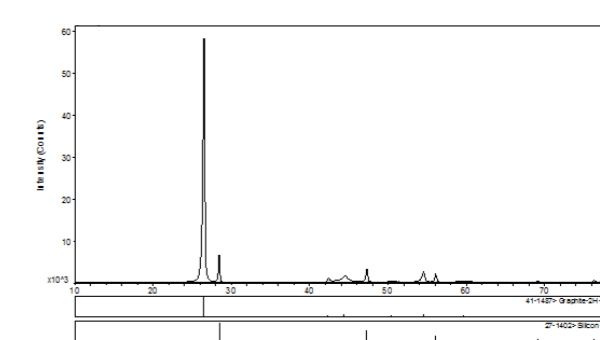
FWHM (lead battery)



Graphitization degree



Qualitative analysis (NI-MH battery)



Qualitative analysis (graphite)

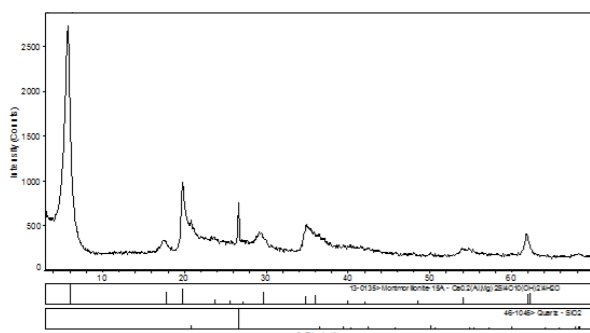
Pharmaceuticals

1. Qualitative analysis of pharmaceutical raw materials.
2. Identification of impurities.
3. Determine the grain size, crystal form, and crystallinity etc.

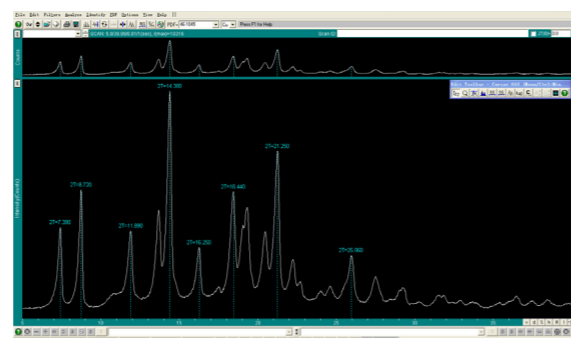
Titanium dioxide

1. Qualitative & Quantitative phase Analysis.
2. The ratio of all kinds of compounds could be determined.
3. Determine the grain size, crystal form, and cell parameters etc.

Data Analysis

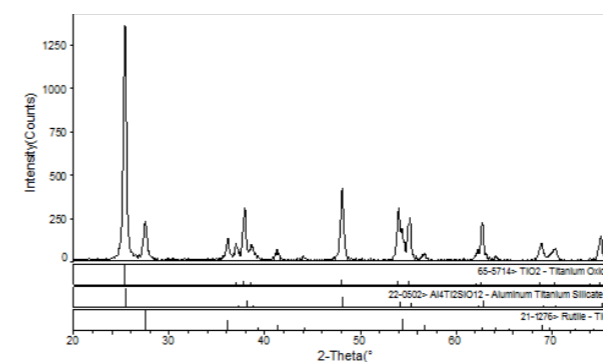


Qualitative analysis (Montmorillonite Powder)

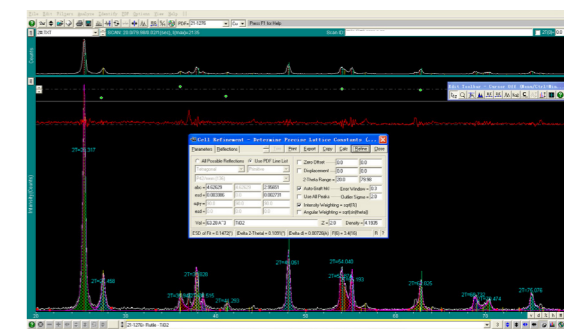


Peak search

Data Analysis



Qualitative analysis

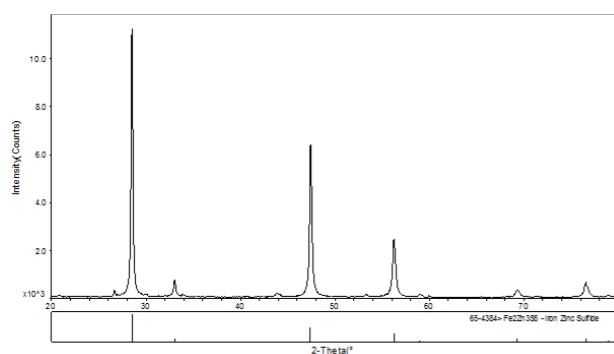


Cell parameters

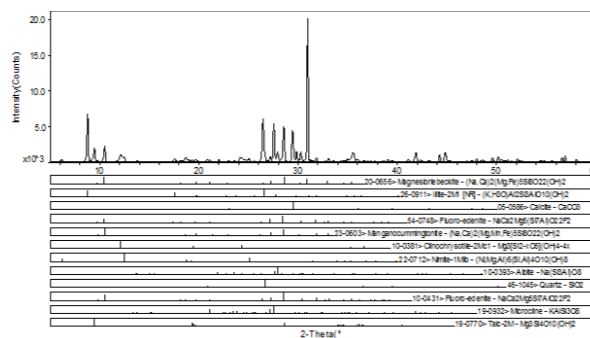
Mineral

1. Qualitative & Quantitative phase Analysis.

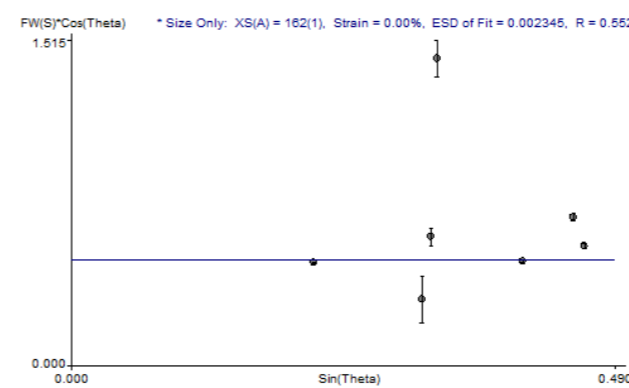
Data Analysis



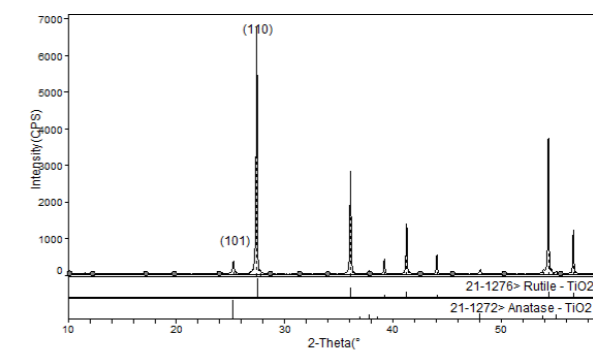
Qualitative analysis (zinc concentrate)



Qualitative analysis (amphibole)



Grain size



Qualitative analysis

Specifications

XD series x-ray powder diffractometer main unit

Item	XD-2	XD-3	XD-6
X-ray Tube			
Type	Cu Target,NF Model		
Focus Dimensions	1.0×10mm ²		
Maximum Power	2 KW		
X-ray Generator			
Maximum Power	3 KW		4 KW
X-ray Tube Voltage	15kV ~ 60kV		
Tube Voltage Step Width	1kV		
X-ray Tube Current	6mA ~ 50mA		6mA ~ 80mA
Tube Current Step Width	1mA		
Tube Voltage,Tube Current Stability	≤0.01% (Supply Voltage Fluctuations 10%)		
Alarm Device	kV Low, kV Over Top, mA Overload, Water Discharge, Temperature		
Ray Power Protection	0.35kW, 0.7kW, 1.0kW, 1.5kW, 2.0kW, 2.7kW Six Grade		
Goniometer			
Goniometer Type	Vertical(θ-2θ)	Vertical(θ-θ)	
Scanning Radius	180mm	150mm ~ 285mm Continuously Adjustable	
Scanning Mode	θ-2θ Linkage Or θ,2θ Single Move	θ _s -θ _d Linkage Or θ _s ,θ _d Single Move	
Measurement Range	-182° ~ 182°(θ) -30° ~ 160°(2θ)	-30° ~ 80°(θ _s) -30° ~ 160°(θ _d)	
Maximum Speed	120°/min	1800°/min	
Operation Mode	Continuous Scanning ,Timing Step Scanning, Constant Step Scanning		
Continuous Scanning Speed	0.125°/min ~ 120°/min		
Angle Repeatability	≤0.0006°	≤0.0005°	
Measurement Accuracy	0.001°	≤0.001°	
Minimum Step Size	0.00025°	0.0001°	
Divergence Slit(DS)	1/6°, 0.5°, 1°, 2°		
Anti-scattering Slit(SS)	0.5°, 1°, 2°		
Receiving Slit(RS)	0.1mm, 0.15mm, 0.3mm, 0.45mm, 0.6mm, 1mm, 2 mm		
Zero Dedicated Slit	0.02mm		
Detector Counter			
The Type Of Detector	Scintillator Counter		
Crystal Type	NaI		
Pulse-height Analyzer(PHA)	Output High Voltage 0V ~ 1000V Stability ≤0.01%(8h)		
Machine Cabinet			
Cabinet Size(mm)	1200(L)×800(W)×1850(H)		
Machine Weight(kg)	500		
Observation Window	600(L)×400(W)×10(T) Lead Glass		
X-ray Leakage	≤0.1μ Sv/h (Non Deduction Natural Background)		
Safety Precautions	Door Interlock Protection(The door to a designated location, light gates open only to produce X-ray)		
Filter			
Ni Filter	Corresponding Cu Target		
Integrated Whole Stability	≤0.3%		

Automatic temperature control of circulating water cooling device (indoor unit +outdoor unit)

Model	CW-2F
Cooling Power(W)	4000
Power Supply	220V,50Hz
Input Power(W)	1800
The Largest Dimensions(mm)	Indoor Unit Outdoor Unit 600(L)×400(W)×960(H)
Weight(kg)	Indoor Unit Outdoor Unit 50
Noise(dB)	Indoor Unit Outdoor Unit ≤55 ≤65
Cooling Water Pressure(Mpa)	0 ~ 0.7
Coolling Water Flow(L/min)	≥3.5
Ambient Temperature	5℃ ~ 40℃
Temperature Control Range	-49℃ ~ 50℃
Temperature Control Accuracy	±1℃
Warning Device	Temperature, Water Shortage

Company Overview



Beijing Purkinje General Instrument is a world-leading manufacturer of analytical instrumentation. We develop and manufacture innovative products for laboratories in industry, science and governmental institutions. With our customer-oriented strategy and our high-quality service, we strive to be a World market leader.

Our technology is aimed at customer needs; it serves the well-being of people and is in accordance with ethical values, environment and nature. Our products lines include analytical systems for spectroscopy (UV/Vis, AAS and AFS), Chromatography(HPLC, GC and GCMS), X-Ray Powder Diffractometer, X-Ray Fluorescence Spectrometer.

Beijing Purkinje General Instrument has organically grown as a company since its conception in 1991 and its technical know-how is based on a rich historic development and a worldwide network, which is strong advantage for each of our customers. Our main offices are in China, UK and USA. Our distribution offices in 76 countries with a total of 1100 employees guarantee that we are within close reach of our customers.