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**Provider of High-Precision,
Highly Sensitive, and
Highly Reliable Trace
Element Analysis Solutions**

E-lite Family

High-Performance Trace Element Analyzer

—— Monochromatic Excitation X-ray Fluorescence (XRF)

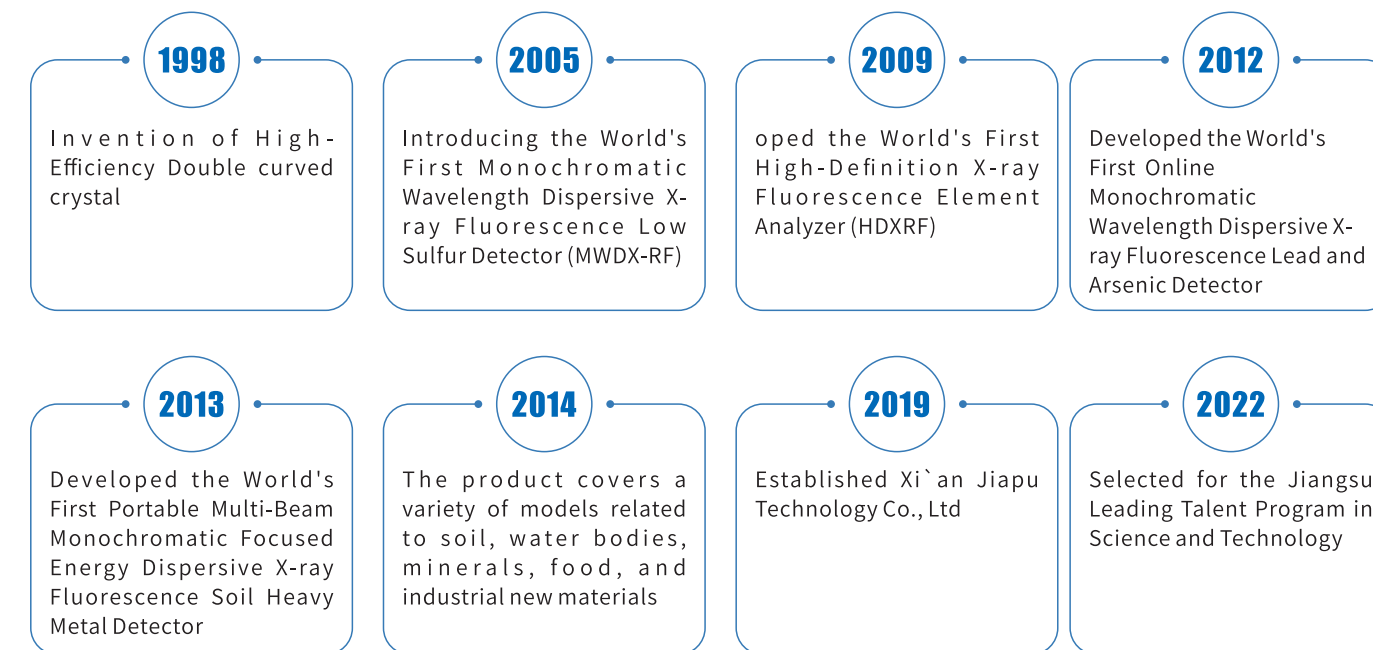


ABOUT US

Suzhou Jiapu Technology Co., Ltd. is located in the Suzhou Industrial Park of the China (Jiangsu) Free Trade Zone. We position ourselves as a leader in global trace element analysis, specializing in the research, development, production, sales, and service of monochromatic Excitation X-ray fluorescence element detection technology. Our mission is to provide advanced, high-precision, high-sensitivity, and highly reliable trace element analysis solutions for clients across various industries. We offer four product technology platforms: handheld, portable, laboratory, and online systems, which can be widely applied in fields such as petroleum and petrochemicals, soil investigation, water quality monitoring, agricultural product processing screening, food safety monitoring, geological mining, and industrial online monitoring.

Suzhou Jiapu Technology Co., Ltd. was founded by Dr. Zewu Chen, who invented the high-efficiency double curved crystal in 1998. He has obtained invention patents in countries including China, the United States, Japan, and the European Union. Under Dr. Chen's leadership, his team pioneered and led the widespread application of hyperbolic curved crystals in X-ray fluorescence (XRF) spectrometers, developing two XRF technology pathways, MWDXRF and HDXRF, along with their corresponding product lines. Jiapu Technology's high-performance X-ray fluorescence element detectors utilize hyperbolic curved crystal monochromatic light focusing technology (HDXRF), enabling precise analysis of elements in X-ray fluorescence spectrometry.

Product development



E-lite 500

High-Performance Trace Element Analyzer



**Fundamental
Parameter**



**Empirical coefficient
calibration method**

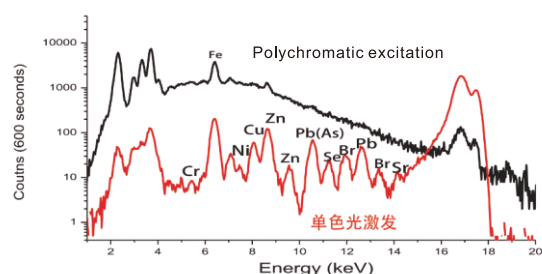


**Double curved crystal
monochromator**

Patented Technology and Principles

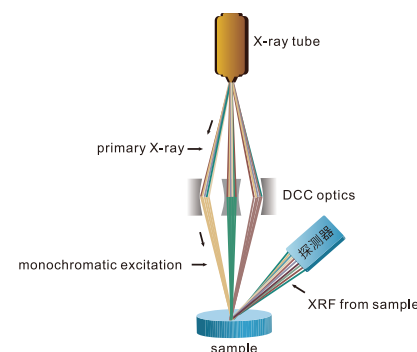
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Comparison of X-ray Fluorescence Response Signals Generated by Monochromatic and Polymeric Wavelength Excitation Under the Same Sample Conditions.



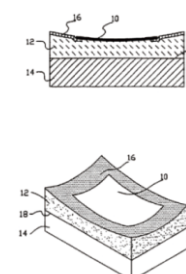
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The Optical Path for High-Performance X-ray Fluorescence Spectrometer.



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Double curved crystal.



The High-Performance X-ray Fluorescence Element Analyzer (HPXRF) is a Monochromatic Focused X-ray Fluorescence Spectrometer

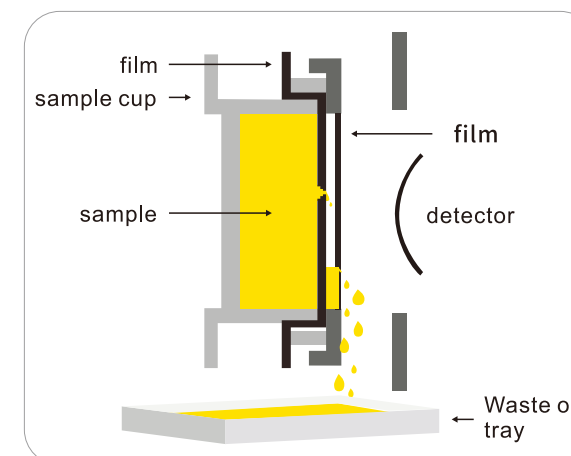
Principle: The X-ray tube emits X-rays, which are monochromatized and focused onto the sample by passing through a double curved crystal (DCC). The sample then emits secondary characteristic X-ray fluorescence. Due to the enhanced energy of the monochromatic focused X-ray fluorescence and the absence of interference from stray light, the characteristic X-ray fluorescence of each element in the sample is detected. The detector calculates the signal response, resulting in superior detection limits and highly accurate quantitative results.

For different sample matrices, the quantitative analysis can be conducted using either the Fundamental Parameter (FP) method or the empirical coefficient method.

Reliability

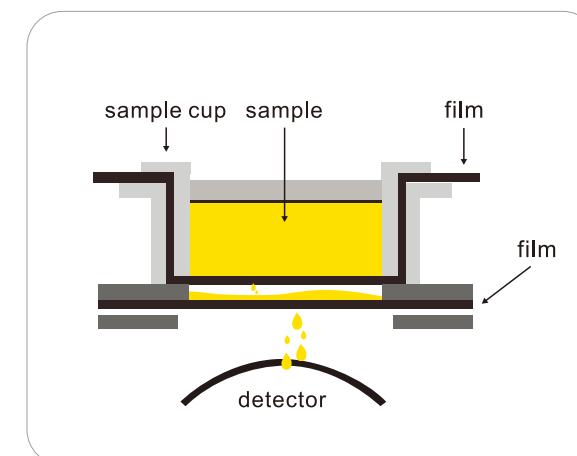
Modern laboratories rely on reliable and stable analytical solutions to meet diverse usage scenarios. The E-lite 500 is specifically designed to fulfill these requirements. It features an innovative sample introduction system that directs accidental sample spills into a collection tray, preventing the leaked substances from contacting valuable components.

E-lite Sample Chamber with Collection Tray



The sample is injected into the unique AccuCell sample cup. Once the cup is inserted into the instrument from the side, this innovative design ensures that any accidental spills are directed into the collection tray for easy cleanup and disposal.

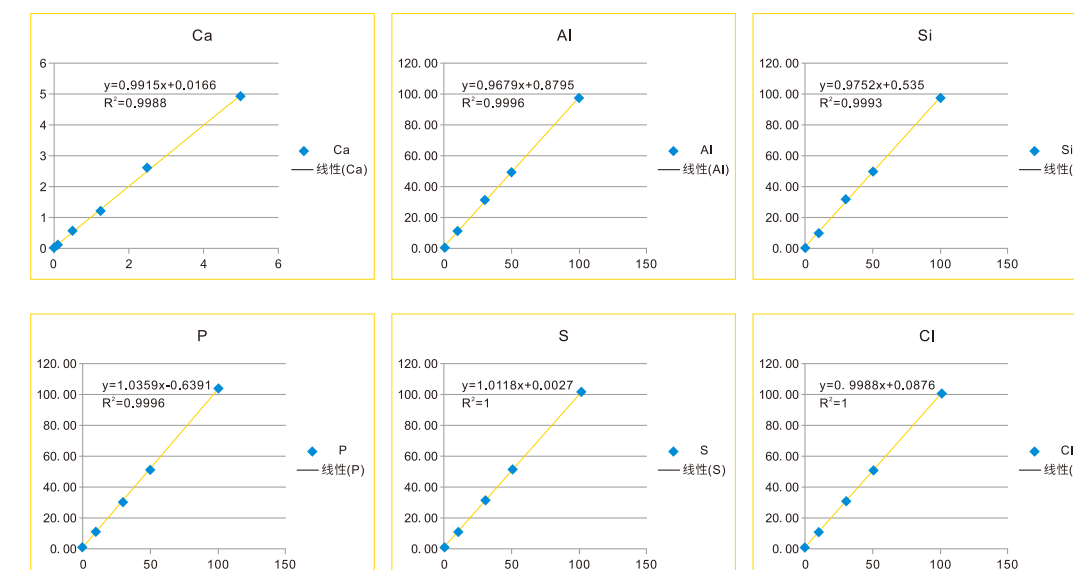
Sample Chamber of Traditional Products



Traditional product sample chamber designs typically use a thin film to cover the unit's window, preventing accidental sample spills from reaching the detector and X-ray tube. However, if this film becomes damaged, the sample can leak into the detector and X-ray tube, resulting in extremely high repair costs.

Accuracy

The E-lite series leverages patented high-efficiency DCC double curved crystals and the latest Fundamental Parameter (FP) algorithm to achieve high-precision and accurate analysis across a wide linear range for complex and varied matrices.



Relevant Standards

Sulfur Element Analysis:

ASTM D7039
ASTM D7220
NB/SH/T 0842
ASTM D2622
ASTM D4294
GB/T 17040
GB/T 11140

Chlorine Element Analysis:

ASTM D7536
NB/SH/T 0977

Precision

The results of repeatability test for Typical elements in oil									
Sample	Si	P	S	Cl	Ca	Fe	Mn	Pb	Zn
1	11.67	10	10.4	9.91	9.94	1.10	0.96	0.99	0.98
2	10.46	10.3	10.5	10.03	10.03	1.09	0.91	1.04	0.99
3	10.84	9.5	10.3	10.11	10.02	1.06	1.00	1.03	1.03
4	11.85	9.62	10.3	9.92	10.15	0.87	0.89	1.03	1.01
5	12.35	10.27	10.2	10.06	9.89	1.18	1.06	0.99	0.97
6	12.07	9.78	10.4	9.83	10.11	1.05	1.06	1.00	1.00
7	10.78	10.3	10.5	10.13	9.93	1.06	1.03	1.00	1.01
Average value	11.43	9.95	10.37	10	10.01	0.97	1.01	1.01	1.00
Reference value	10	10	10	10	10	1.00	1.00	1.00	1.00
Standard Deviation	0.73	0.36	0.11	0.11	0.1	0.09	0.07	0.02	0.02
Relative Standard Deviation	6.38%	3.58%	1.07%	1.13%	0.96%	9%	7%	2%	2.04%
						0.28	0.20	0.06	0.14

Limit of Detection

Typical Element Detection Limits of the E-lite Series									
Element	Si	P	S	Cl	Ca	Fe	Mn	Pb	Zn
LOD	1	0.3	0.2	0.15	0.1	0.1	0.1	0.1	0.1

* Note: The detection limit experiments were conducted using n-hexane as the matrix, and the equipment model is E-lite 500.

Technical Specifications

Equipment Model	Elite-Eco	Elite-Port	Elite-S	Elite-MS	Elite-MH	Elite-H
National Standard	GB2760-2014					
Measurement Time	100-300					
Test Element Range	S	Mg-Ca	Mg-Ti	P-Zn	Fe-Zr	Zr-Cs
Storage and Output	Print Output、Ethernet、USB、Internal Memory、USB Flash Drive					
Power Supply	110-240 VAC±10%， 50-60Hz					
Introduction Method	Side Sample Introduction					
Sample Types	Liquit					
Operating Temperature	5°C-40°C					
Operating Humidity	20-85%					
Excitation Source	Maximum Operating Voltage 50KV, Maximum Power 50W		Maximum Operating Voltage 50KV, Maximum Power 50W			
Detector	Si-Pin	High-Resolution Silicon Drift Detector				
Diffraction Crystal	X-RAY TUBE	Double Curved Crystal （DCC）				
Weight	7.5kg			10.8kg		
Dimensions	W30.0 xL 30.0 xH 22.0 cm			W35.1 X L27.1 X H27.6 cm		
Remarks		Built-in Battery				

Application

Sulfur, Chlorine, Silicon, and Phosphorus Analysis in Naphtha, Finished Gasoline, Gasoline Fractions, Diesel, Aviation Kerosene, Biodiesel, Biojet Fuel, Fatty Acid Methyl Ester, and Marine Fuel Oil.

Sulfur and Chlorine Analysis in Heat Transfer Oil (Liquid) and Solvent Oil.

Trace Sulfur and Chlorine Analysis in Reforming Feed, Reforming Products, Aromatic Extracts, Mixed Dimethyl Toluene, and Para-Xylene (PX).

Sulfur, Phosphorus, Chlorine, and Silicon Analysis in Wastewater and Recycled Water.

Sulfur and Chlorine Analysis in Crude Oil, Residuum, Wax Oil, Asphalt, and Petroleum Coke.

Sulfur, Chlorine, and Silicon Analysis in C5, C9, MTBE, Alcohols, Lipids, and Fine Chemicals.

Analysis of Major Elements such as Calcium, Zinc, and Phosphorus in Lubricating Oils, Greases, and Additives.

Analysis of Wear Metals including Iron, Copper, Zinc, Nickel, Aluminum, Manganese, Lead, Silver, and Chromium in Used Lubricating Oils.

Analysis of Trace Elements Iron, Manganese, and Lead in Gasoline.

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