



Genius IF

EDXRF Multi-Element Spectroscopic Analyzer
With Secondary Targets Excitation Mode



Fast and non-destructive analytical method

High performance
50kV and 50W

Customized direct filters
and secondary targets
modes

SDD Light elements

Sub-ppm to 100%
concentration

Genius IF Spectrometer

Genius IF offers a cost-effective solution analysis. The EDXRF analyzer provides a non-destructive qualitative and quantitative measurements for multi-element from Na (11) - U (92), with detection limits from sub-ppm to high weight percent concentrations.

The compact spectrometer fits comfortably on a traditional laboratory bench and is compatible for high-end applications, embedded with a complicated unique engineering of adjusted set of selected direct filters and secondary targets.

Non-destructive elemental analysis

Quantitative and qualitative analysis using standards and standardless FP methods (Fundamental Parameters)

X-Ray source

Excitation of 50kV, 50W, with Rh anode, LOD from sub-ppm to 100% concentrations, providing excellent performance for complex applications

Silicon Drift Detector (SDD)

SDD with higher-count rate and resolution, down to 125eV for improved analysis, detection range from Na (11) - U (92)

Light Elements Detection

Ultra-thin detector window provides superior performance for low Z elements analysis

Secondary Targets and Tube Filters

Unique patented (WAG) geometry combines eight secondary targets and eight customizable tube filters for fast and accurate determination of trace and minor elements

Analytix advanced SW package

Powered by Analytix advanced software package suited for analysis and management of projects with fast performance, easy-to-use GUI, providing immediate action and results

Quantitative Analysis Algorithms

Multi-element regression with inter-element corrections (six models available). Gross, net, fit and digital filter intensity methods





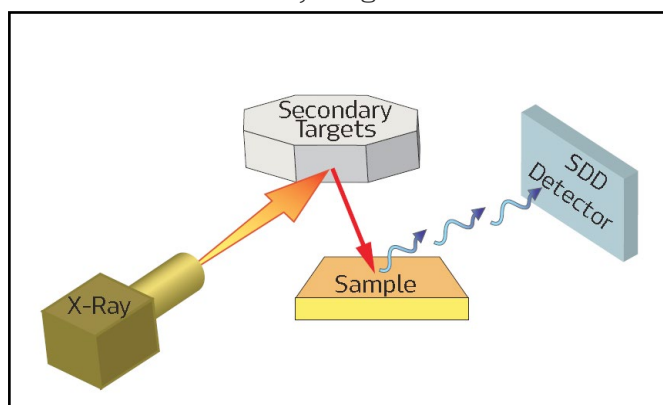
Secondary Targets

The most versatile elemental analyzer

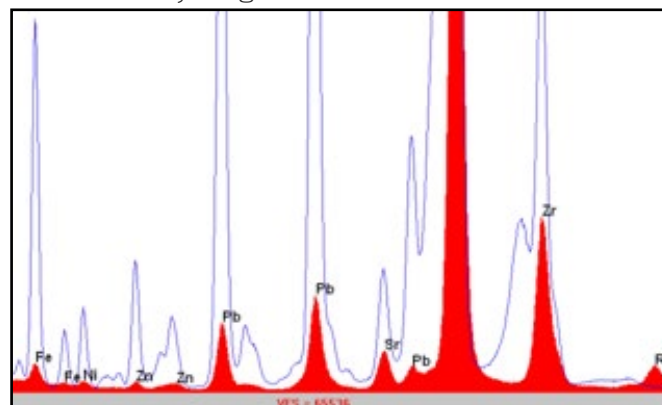
The Genius IF has a unique patented geometry combining eight secondary targets, with eight customizable tube filters used in direct excitation mode, to allow optimal excitation of all elements that can be detected using EDXRF. The WAG (Wide Angle Geometry) patented secondary target technique provides the best results for major, minor and trace element analysis.

The X-ray tube excites the characteristic K lines of a secondary target (a pure metal) which are used to excite the sample. By using secondary targets, the detection limits for certain elements can be lowered even further. These lower detection limits make the Genius IF suitable for a larger range of applications that had previously not been accessible to conventional EDXRF instruments and turn this system into the most versatile multi-element analyzer.

Secondary target schem



Secondary target vs direct excitation mode



Secondary target versus direct excitation mode:

The figure presents the significant improved peak to background ratio, when using secondary target excitation (see blue contour spectrum) versus using direct excitation mode (see main red spectrum).

Key Applications

Petrochemical



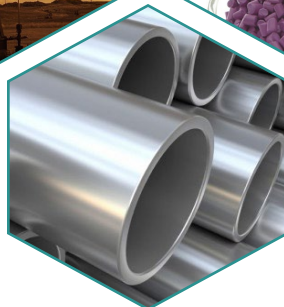
Polymers



Academic Research



Coating Thickness & Thin Films



Pharmaceutical, Food & Cosmetics



Genius IF Technical Specifications

Detectable Range	Na (11) - U (92)
Detectable Concentration	Sub ppm - 100%
X-ray Tube	Rh/Ag/Mo/W/Pd anode
X-ray Source	50kV, 50W
Excitation Type	Customized direct with filters and secondary target
Stability	Precision 0.1% at ambient temperature
Detector	Fast SDD version
Resolution (FWHM)	125eV $\pm$ 5eV
Window Type	Be
Autosampler	16/8 positions
Work Environment	Air/ Vacuum/ Helium
Customized Tube Filters	Eight software selectable
Customized Secondary Targets	Eight software selectable: Si, Ti, Fe, Zn, Ge, Zr, Mo & Sn
Customized Collimator	0.3 mm - 3 mm
Power Supply	110-230VAC 50/60Hz
Pulse Processing	Digital Pulse Processor
System Dimensions	Unpacked: 55W x 55L x 32H, Packed: 80W x 80L x 65H
System Weight	50kg (net), 90kg (gross)
Chamber Dimensions	22 x 22cm, H=5cm
Computer	Integrated PC
Operating Software	Analytix advanced package (Microsoft Windows™ OS)
Optional Software	Advanced Fundamental Parameters analysis, Standartless Software, libraries
Control	Automatic control of excitation, detection, sample handling and data processing
Spectrum Processing	Automatic escape peak and background removal, Automatic peak deconvolution, Graphical statistics
Options	SDD LE, Sample Spinner

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Xenemetrix is a leading designer, manufacturer and marketer of Energy-Dispersive X-Ray Fluorescence (ED-XRF) systems. With more than 30 years experience, Xenemetrix continues to develop highly innovative technologies and solutions suitable for today's ever-growing analytical challenges.

Xenemetrix combines the latest technological developments with innovative engineering, to provide cost-effective solutions to a wide range of industries and applications.

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