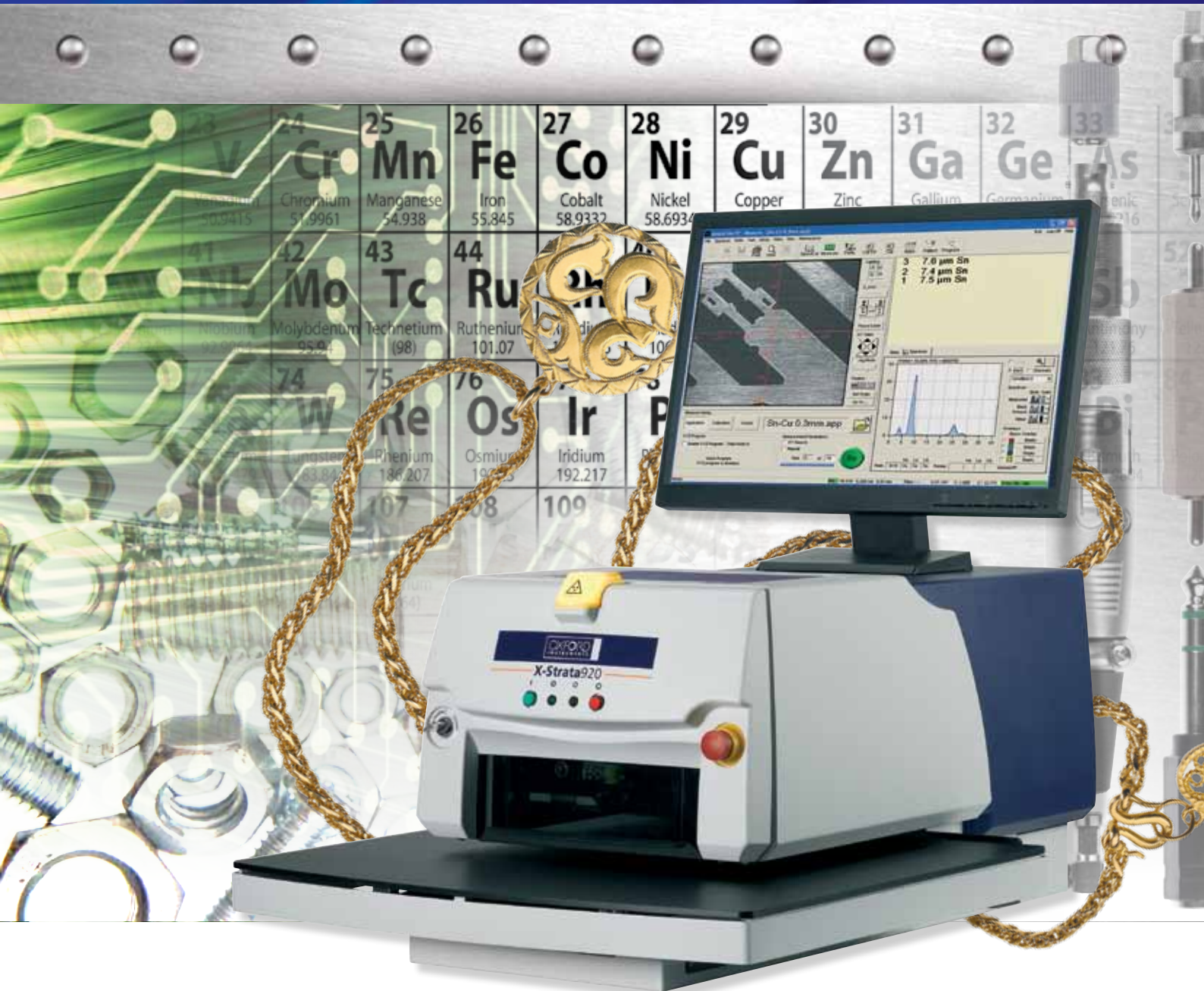


COATINGS

X-Strata920

Cost-effective, rapid and reliable XRF for coating thickness measurement and materials analysis



OXFORD
INSTRUMENTS

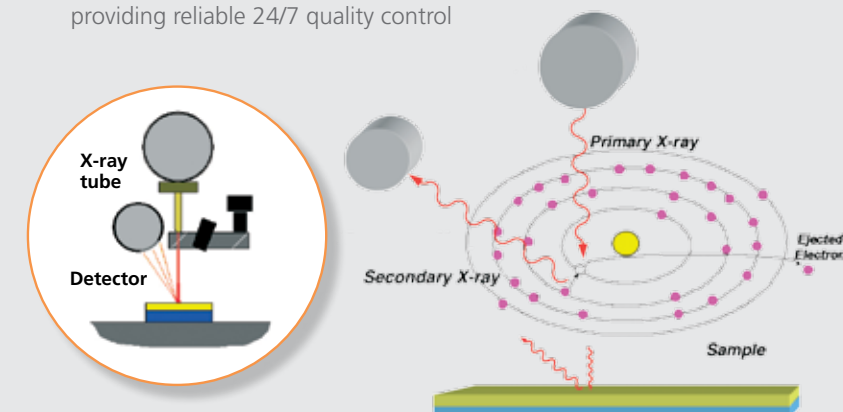
The Business of Science®

X-Strata920

Powerful, reliable and easy to use EDXRF spectrometer guaranteeing quality and reducing costs

Oxford Instruments – A brand you can trust

- Oxford Instruments has over 20 years experience in designing, manufacturing, selling and supporting reliable, cost-effective solutions for coatings thickness and composition analysis
- Thousands of XRF benchtop coatings analysers have been supplied globally providing reliable 24/7 quality control



X-ray fluorescence (XRF) method

X-ray Fluorescence (XRF) instruments work by exposing a sample to be measured to a beam of primary X-rays. The atoms of the sample absorb energy from the X-rays, become temporarily excited and then emit secondary X-rays. Each chemical element emits X-rays at a unique energy. By measuring the intensity and characteristic energy of the emitted X-rays, an XRF analyser can provide qualitative and quantitative analysis regarding the thickness and composition of the material being tested.

Benefits of analysis by X-ray fluorescence

- Minimal or no sample preparation
- Non-destructive analysis
- Wide range of element determination, Ti^{22} to U^{92}
- Analysis of solids and solutions
- Rapid analysis: results in seconds
- Qualitative, semi-quantitative and full quantitative analysis
- Easy to use with only minimal training
- Standard test methods, specifications and guides using XRF technique are used internationally to improve product quality, safety, facilitate market access and trade, and build consumer confidence. For example, **X-Strata920** complies with:
 - ASTM B568: Standard test method for measurement of coating thickness by X-ray spectrometry
 - ISO 3497: Metallic coatings – Measurement of coating thickness – X-ray spectrometric methods

Electronics

Au	SnPb	Sn	
Ni	Ni	Ni	Ag
Cu	Cu	Ag	Cu
Epoxy	Epoxy	Ceramic	Epoxy

Solderability

Au		
Pd	Au	
Ni	Ni	Ni
Cu	Cu-alloy	Cu

Electrical Contact

NiP
Al

Surface Finish

Electrical and electronic components

Increase productivity with better process control

- Component reliability assurance
 - Solder alloy composition and thickness measurement
 - Lifetime product assurance through optimised quality control
- For example:
- Analysis of gold and palladium thickness of electrical contacts
 - Coating thickness of NiP layer on computer hard discs

Metal Finishing

	Cr	
ZnFe	Zn	NiP
Fe	Fe	Fe

Corrosion Resistance

TiN	TiAlN	Cr
Tool-steel	W-carbide	Fe

Wear/Heat Resistance

	Cr	
	Ni	AuCuCd
ZrCN	Cu	Ni
Brass	Al or ABS	Cu

Cosmetic Finish

Metal Finishing

Minimise production cost of the plating process and maximise production output

- Speed and simplicity of analysis
 - Single or multi elements coating thickness analysis and coating composition
 - Analysis of up to 4 layers
 - Plating bath analysis

Metal Alloy

% Au	% Cr	% Au
% Ni	% Fe	% Ag
% Cu	% Ni	% Cu
% Zn	% Mo	% Zn

Assay and ID

Metal alloy composition and identification

Rapid, non-destructive analysis of jewellery and other alloys

- Precious metal alloy assay
- Karat analysis
- Material identification



Au
Pd
Ni
Cu

Top layer:
Au (gold) coating thickness

Second layer:
Pd (palladium) coating thickness

Third layer:
Ni (nickel) coating thickness

Fourth layer:
Substrate

Coating Thickness Analysis As easy as...

X-Strata920

Three configuration options

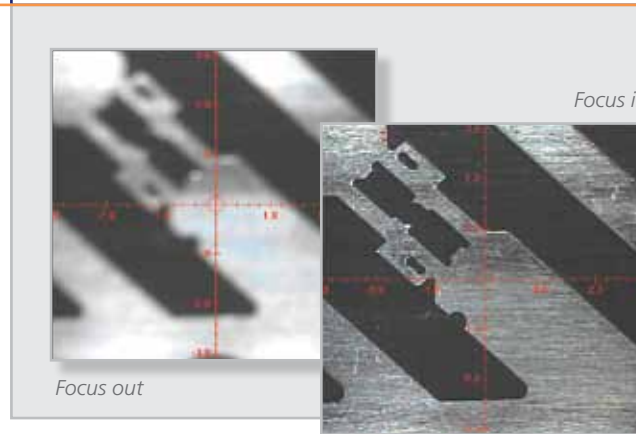
To suit your analysis needs

1 Place samples on analysis table



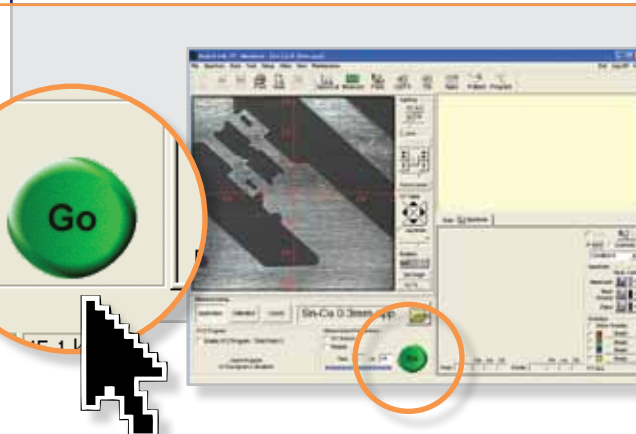
- Non-destructive analysis: no sample preparation
- Easy sample introduction/presentation: slotted chamber
- Large analysis table enables the measurement of large flat samples

2 Optimise camera focus at the click of a button

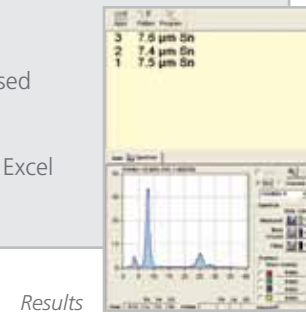


- No operator-to-operator results variability: point-and-click laser focus
- Clear, pin-point analysis: high-resolution colour video camera with high magnification
- Unattended operation: single or multiple analysis using the programmable XY stage (optional) and Z axis
- Simple and quick multi-point analysis: customer pre-defined analysis patterns

3 Press Go



- Results displayed within seconds
- Save, print or send results
- Create pre-defined or customised reports in very few steps
- Export results into Microsoft™ Excel at the push of a button



Results

High performance XRF spectrometer

- **Fast and precise analysis:** the combination of a large-area proportional counter detector and Oxford Instruments' 50-watt micro-focus X-ray tube (providing a high-intensity, small-spot X-ray beam for superior sample excitation) delivers optimum sensitivity
- **Simple element differentiation:** secondary beam filters enable the spectral separation of overlapping elements
- **Optimised performance across a wide range of elements**

X-Strata920 is supplied with over 800 pre-loaded, easy-to-select application parameters/methods

- **Excellent long-term stability:**
 - Automatic thermal compensation measures the instrument temperature and corrects for changes, giving stable results
 - Simple and rapid Spectrum Calibration routine checks the instrument performance (such as sensitivity) and applies necessary corrections

Rugged and robust design

- Operation in a laboratory or by the production line
- Sturdy, industrial design

Simple calibration setup

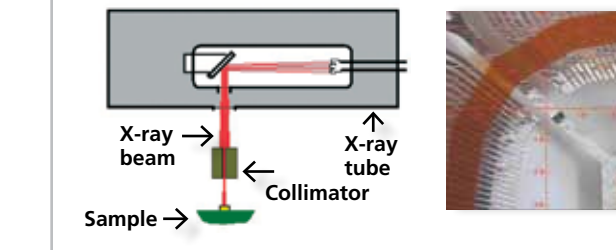
- Fundamental Parameters (FP) methods provides simplicity and reliable quantitative results when no calibration standards are available
- Empirical calibrations provide best accuracy and results traceability, and use only a few standards
- Methods are created in minutes
- Oxford Instruments supply certified standards for best accuracy (AZLA and ISO/IEC 17025 accredited)

Remove results variability between operations

Integrated laser

- Simple 'point and click' operation to bring sample into focus
- Fixed focal distance: 0.5" (12.7 mm)

Analysis of variety of sample shapes and sizes



Multi primary beam collimators

- Optimal performance results through flexible collimator selection
- Best sensitivity and speed of analysis
- Up to 6 collimators for additional application capability

Advanced system security

- Simple user interface with limited features for the routine operator
- Manager level access for system maintenance
- System usage logged by operator
- Autolock function prevents unauthorised use of the instrument

Standard base

- A 'Slotted chamber' allows the measurement of a wide range of samples from small components to very large flat samples e.g. printed circuit board. The size of the sample can exceed the width of the instrument.
- Motorised and software controlled analysis head for speed and ease of use.
- Economical and practical.
- For the analysis of samples up to 33mm (1.3") in height.



Mini-Well base

- The 'Mini-well' chamber design allows the measurement of a wide range of parts/components from small to large, i.e. up to 160mm (6.3") in height.
- Sample tray which can be positioned in one of four positions in the 'Mini-Well' to hold samples of differing height, ensuring a range of parts/components can be measured with ease.
- 'Slotted chamber' allows the measurement of large flat samples, e.g. printed circuit boards whose size can exceed the width of the instrument.



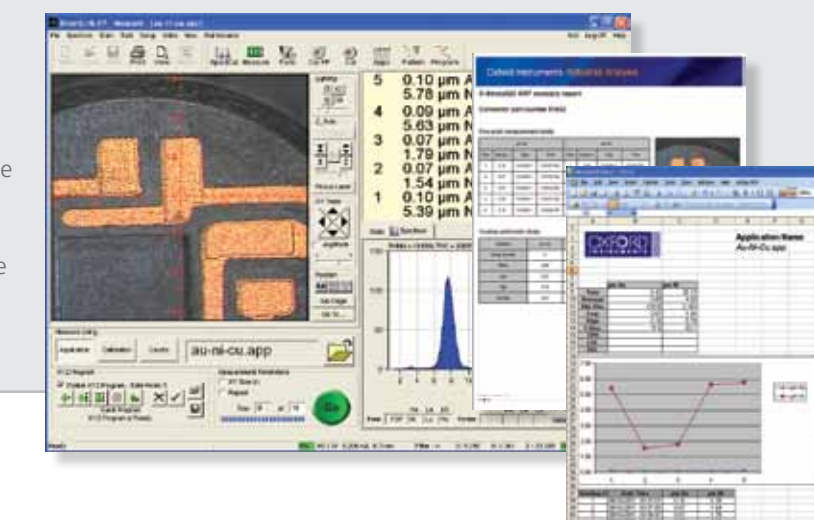
Programmable base

- A motorised and programmable table allows automatic measurements for highest sample throughput and unattended operation.
- Mouse control enables easy positioning of the parts/components being analyzed to the precise points for analysis.
- The 'Slotted chamber' allows large flat samples to be measured, e.g. printed circuit boards.
- Table size: 56mm (2.2") D x 61mm (2.4") W



Results export

- Export results into Microsoft™ Excel or create custom reports
- Apply custom statistical analysis formats
- Include statistical data analysis
- Capture the sample image in reports



SUPPORT

©iService® Worldwide Service and Support

Support delivering confidence and protecting your investment

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- Technical help desk support
- Genuine approved Oxford Instruments spare parts
- Consumable products
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