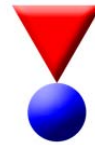


Probe Software

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Software for MicroAnalysis

Probe for EPMA

Probe Image

PictureSnapApp

Probe for EPMA Thin Film Acquisition and Analysis

Probe for EPMA provides optimized capabilities for rapid and automated acquisition and accurate quantitative analysis of thin film materials on electron opaque substrates (and unsupported films).

By utilizing Multi-Voltage-Analysis (MVA), Probe for EPMA can automatically acquire multiple data sets at optimized electron beam energies to simultaneously determine both thickness and composition in thin film materials of all compositions and thicknesses.

Save STRATAGem Output Format

Select Multiple Voltage Samples (multi-select)

Un	19	12B
Un	20	12B
Un	21	12C
Un	22	12C
Un	23	12C
Un	24	13A
Un	25	13A
Un	26	13A
Un	27	13B
Un	28	13B
Un	29	13B

Standards Unknowns

Select a group of samples that represent a single analysis position acquired at multiple voltages for thin film processing by the StrataGem thin film software. Then click the Output button. Repeat for each group of multiple voltages.

Un 26 13A
TO = 40, KeV = 16, Beam = 30, Size = 5
(MagAnal = 20000.), Mode = Analog Spot
(MagDef = 600, MagImag = 600)
Image Shift (X,Y): .00, .00

Output Options

Output All Data Points (confirm import in StrataGem)
 Output Averaged K-ratio Data Only
 Output Each Data Point To Separate File (for statistics)

Skip All K-ratios That Are Less 0.0002 (0.02%)
 Set K-ratios <= 0.0002 to a Value Of 0.0002 (0.02%)

Do Not Output Standard Compositions To Output File

Standard Conductive Coating

Include Conductive Coating On Standards

Element	Density	Thickness (A)
c	2.1	200

Sample Conductive Coating

Include Conductive Coating On Unknown

Element	Density	Thickness (A)
c	2.1	200

Sample Description

Include Sample Description For Unknown

Homogeneous Layer Model

Element (multi)	Density	Thickness (A)
se	5	100
o		
bi		
si		

Select the homogeneous or replicate layer model. If homogeneous, then select (using multi-selection) all the elements in the homogeneous layer along with the density and thickness. If Replicate, then select (in the lower section) each element to be replicated assuming a pure element and an unknown thickness.

Include Silicon In The Layer

Replicate Layer Model Use Known Thickness

Element	Density	Thickness (A)	Use
se	4.79	100	<input checked="" type="checkbox"/>
o	0.001429	100	<input checked="" type="checkbox"/>
bi	9.8	100	<input checked="" type="checkbox"/>
si	2.33	100	<input checked="" type="checkbox"/>
			<input type="checkbox"/>

Number of Replicate Layer Repeats: 10

Substrate Description

Element: si Output Substrate As An Oxide

Standard: 1 Schott Cover Slip Glass [D 263]

Based on work by Pouchou and Pichoir, this robust and flexible MVA method even allows for the accurate determination of multiple layers on substrates with excellent accuracy. Due to the superb sensitivity of EPMA, film thicknesses down to a few nanometers can be also characterized with confidence. In cases where the same element is present in both the film and substrate, e.g., Si/Ge on Si wafers, this method can be combined with x-ray reflectivity (XRR) to robustly determine the unknown composition even on complex and insulating substrates such as Dow 1737 FPD glass.

Contact: John Donovan, donovan@probesoftware.com or call (541) 343-3400 for more information.

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