

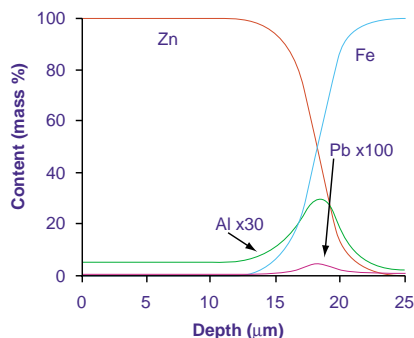
Look at the Surface and Beyond...And See a Whole New World of Information

GD-PROFILER™

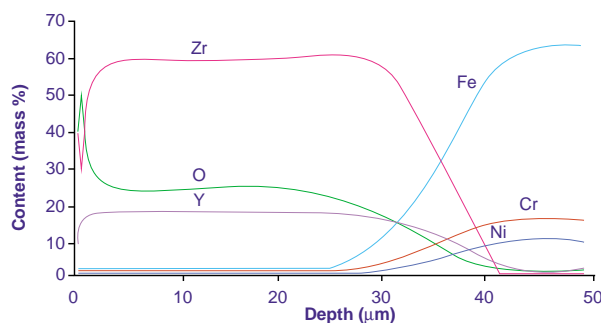
RF Glow Discharge OES Instrument
High Performance for a Wide Range of Sample Types

A World of Applications:

- Thin films
- PVD/CVD coatings
- Coated steels
- Oxidation/Corrosion/Passivation
- Surface treatments
- Semi-conductors
- Metal alloys
- Ceramics
- Powders
- Glasses



Depth profile of galvanized steel. RF-GD provides a powerful and easy tool to analyze surfaces, interfaces and bulk materials.



RF-GD depth profile of an Yttrium/Zirconium oxide coating on steel. The benefit of using RF-GD allows the analysis of any combination of non-conductive layers, conductive layers and substrates.

The GD-PROFILER is a multi-functional instrument:

- Bulk analysis
- Depth profile analysis
- Near surface analysis

With the following benefits:

- Analysis of conductors and non-conductors
- All elements analyzed including H, O, N, C, & Cl
- Full spectral coverage
- Quantitative depth profile analysis

Features of interest:

- Typical sputtering rate of 3 µm/min provides results in minutes
- Depths of over a hundred microns
- Ease of use
- Depth resolution comparable to that of more expensive surface techniques



The excellence of the GD-PROFILER
20 years of experience in Glow Discharge
The expertise of RF source technology





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RF-GD excitation source

- Class E RF generator
- 150W Max
- Optimized SINGLE source for conductors and non-conductors
- Computer control of RF parameters (Power, DC bias and RF voltages)
- Fast matching box with tunable computer control default settings
- Compliant with CE regulations

GD lamp

- 4mm anode diameter
- Optional 2mm and 7mm anodes available
- Double pumping system for optimum crater shape
- Computer control of Ar pressure inside the lamp
- Sample cooling device (optional chiller available)

Optics

- Single view optics: All optical mountings have a direct observation of the GD plasma (no fibers)
- Optics are all equipped with JY ion etched, holographic gratings
- Optics are purged with a neutral gas for VUV determination and maximum lifetime of components

Polychromator

- Paschen-Runge Mounting
- 0.5m focal length
- 2400 grooves/mm, triple order concave grating
- Spectral Range: 110nm – 620nm. This spectral range allows the analysis of gas elements (H, O, N, C & Cl) at their sensitive wavelengths in the VUV range
- Spectral resolution: 18-25pm in UV
- Metallic mask with more than 200 pre-etched secondary slits
- Up to 47 optical channels
- All channels are equipped with HDD® detectors (dynamic range 10¹⁰)
- Patented Polyscan system allows an automatic scanning around all mounted channels

Specifications subject to change without notice.

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Flat field (optional)

- Patented optical mounting installed within the frame of the primary polychromator.
- 1200 grooves/mm parabolic grating
- Extends the spectral range in the IR region to 900nm for the alkali elements (Li, K, F and Cs)

Monochromator (optional)

- Czerny-Turner optical mounting
- 0.64m focal length
- 3600 grooves/mm flat grating (80x110mm)
- Resolution: 13pm in the UV
- Direct drive scanning system, computer controlled
- The monochromator can measure **simultaneously** any "n+1" element within a depth profile analysis and any sequence of elements in a bulk program.

IMAGE: Full spectrum acquisition (optional)

- IMAGE provides a full spectrum acquisition of a sample or a thick layer in less than two minutes. Monochromator option required.
- IMAGE provides the capability to compare spectra, to identify elements, to obtain a semi-quantitative measurement of the sample composition and provides a "fingerprint" archive of a sample.

Data processing

- Ultrafast acquisition system with multi-stage integration times
- Computer, monitor and printer
- Quantum™ software including IQ™, Intelligent Quantification, for quantitative depth profile analysis

Physical Data

196cm (length) x 75cm (width) x 160cm (height), 400kg (weight)
77in (length) x 30in (width) x 63in (height), 882lbs (weight)

Options

- Chiller: closed cooling device with temperature control
- Nitrogen generator
- 2mm and 7mm anodes
- Reference books
- Argon purifier
- Small sample holder
- Remote diagnostics for on-line assistance

