

GD PROFILER 2

Specifications

Ultra Fast Elemental
Depth Profiling

Key Features

- Analysis of solid materials
- Thin and thick films
- Conductive and non conductive
- All elements measured
- Quantitative
- Sub Nanometer depth resolution

The Profiler 2 combines a Glow Discharge Source powered by Pulsed Radio Frequency to sputter «layer by layer» a representative area of the material investigated, with a high resolution and high sensitivity emission spectrometer that will measure in real time all elements of interest as a function of depth.



GD Profiler 2 Specifications

Sample	
Type of sample	Conductive or non, fragile or heat sensitive
Sample handling	Easy sample handling (no UHV)
Sample diameter	Direct mounting of samples up to 40 cm in diameter
Elements determined	Possible measurement of all elements – up to 47 with the polychromator, unlimited number with the monochromator. (Note: F and He are requiring the use of Ne gas instead of standard Ar). Molecular bands are also measurable.
Source	
UFS*	Ultra Fast Sputtering (UFS) Operation Mode for fast sputtering of polymeric layers
Double pumping	Double differential vacuum system with 2 pumps offering enhanced depth resolution, deeper craters and the use of the plasma for sample preparation for EBSD and SEM.
Anode diameters	4, 2, 7, 8 etc available
RF Plasma	
Function	Erosion of the material by sputtering and simultaneous excitation of the sputtered species for observation with the spectrometer
Frequency	13,56 MHz RF generator
Modes	RF, Pulsed RF and Vdc operation with automatic matching* in all modes
Optical system	
Interface	Optimum direct view to the plasma (no fibers, no beam splitters).
Polychromator focal length	50 cm focal with Polyscan* function offering scanning facility around the poly lines.
Spectral range	Double polychromator with extended spectral range coverage from the VUV (120 nm for H and D) to the near IR (K at 766 nm) with 2 gratings – first for the VUV/UV/visible range and second one using the zero order light of the main grating for the alkali.
Polychromator gratings	Dedicated gratings, 2400gr/mm triple order for optimum light throughput and resolution in the VUV/UV and 1200gr/mm for the alkali.
Monochromator	High resolution Monochromator (64 cm, Czerny Turner – choice of grating 2400 or 3600 gr/mm) with direct observation for simultaneous measurement of any n+1 element in depth profile and with Image function built in (full spectrum record).
Purge	Overpressure of the optics for Long Life Time and absence of contamination assured by neutral gas purge.
Detection	
HDD*	High Dynamic Detectors offering a dynamic of the measurement of at least 5×10^9 for all lines without any preadjustment of the sensitivity of the detectors
Software	
Operating system	Windows 7
Language	Multilanguage Software
Display	Real Time Display of the recorded profiles.
Analytical support	Time Plus and Plasma Cleaning functions built in. Quantification algorithms built in DBs of spectral lines, possible interferences, Relative Sputtering Rates Software that can be installed on multiple locations with easy Export/Import of analytical information.
Reports	Flexible report generation
Control software	Full control of all operating parameters and remote control capability for on line customer support
Accessories - Options	
Optical configuration	Flexible design offering the possibility to extend/change on site the optical configuration or add the monochromator without any impact to the light transmission towards the previous lines.
Odd samples	Various accessories for handling air sensitive, small or non flat samples.
RF coupler*	Possible addition of magnetic fields
Environment	
Size	Compact instrument: WxHxD 86 x 125 x 150 cm
Weight	350kg

* indicates a patented device