



The Autoconcept GD90 is a high resolution glow discharge mass spectrometer designed specifically to perform very high precision analysis of elements. The glow discharge MS provides direct analysis of the solid metal and insulators. It has a very broad range of elemental coverage giving usable data for over 70 elements with high sensitivity for both light elements as well as heavy elements.

With GDMS, measurement of trace impurities at ppb-ppt level can be performed with ease as the technique utilizes a separation of atomization and ionization.

This method therefore has minimal matrix effect and the need of specific reference material is no longer required. It has benefits of full scan analysis of metals and alloys, bulk survey analysis of semiconductor and depth profiling of layers and coatings. It is an ideal tool for production and quality control of high purity materials, including metals, alloys, semiconductor and with the addition of RF source, insulators.etc

The primary features of AutoConcept GD90 include:

- Very high resolution important for determination of interference found in matrices.
- Broad elemental coverage as the software has interference data for 70 elements.
- Negligible matrix effect as the atomization and ionization takes place at different location.
- Quantitative Data to sub-ppb levels
- Isotope Ratio Analysis Depth Profiling Capability
- Minimum sample preparation

Applications



Semiconductor Industry

Very high purity semiconductors are required for production of virtually all electronic optical and electro optical devices. The electrical properties of these semiconductors are dependent on the impurities present in them. Only extreme low levels of impurities are permitted in these metals to guarantee the performance of the end product such as microprocessors and micro devices.

GDMS helps in bulk survey analysis of these semiconductors to identify the amount of impurities even at the trace and ultra trace levels

Nuclear Sector

In Nuclear technology and generally in nuclear research, the precise and accurate measurement of isotopes ratio is of great interest. The widely accepted method for this is TIMS. In this method sample must be dissolved and chemical separation of the analyte of interest is required before the analysis.

GDMS has also been exploited for determination of the isotopic composition in samples with nuclear contents. By comparison GDMs has turned out to be competitive technique for determination of isotopic abundance of B, Li as well as U in terms of precision and accuracy. GDMS has the advantage of reducing handling of the sample before the analysis

**Pure Metal Industry**

In Large Scale production of Metals and Alloys the total trace impurity is not well controlled. However in order to control its mechanical, chemical, electrical and other advanced properties, controlled doping with trace elements and purification to reduce presence of unwanted materials is very much required.

GDMS helps in identifying the impurities if at all present in the finished product hence ensuring the quality and performance of the system where these metals are used.

Alloys Industry

Alloys and Super Alloys are the key materials for manufacturing of high performance machinery like turbines. As these machinery work under very high temperature and pressure, even a slight change in composition of the trace elements can give disastrous results.

GDMS is idea in identifying these elemental compositions in the product to ensure the best performance of the system.

