# UHV Science Applications

## The Hiden 3F/PIC Series of Triple Filter Quadrupole Mass Spectrometers for UHV Gas Studies.

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The HAL 3F/PIC Series triple filter mass spectrometers for precision analysis in UHV Science Applications.

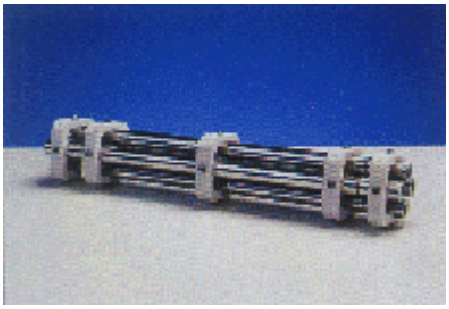
- PIC for fast event UHV gas studies.
- EPIC for radicals analysis and time resolved measurement
- IDP for electron/photon/laser stimulated desorption studies and mass analysis of low energy ions.

- Thermal Desorption Studies
- Electron/Photon Stimulated Desorption
- Laser Ablation Studies
- Neutrals/Radicals Analysis
- Molecular Beam Experiments
- UHV High Sensitivity Studies

Hiden 3F/PIC Series Mass Spectrometers are state-of-the-art Triple Filter Mass Spectrometers designed for the most demanding analytical environments.

3F/PIC Series systems include a triple-stage high precision quadrupole mass filter assembly, integral electron impact ioniser, electron multiplier detector and advanced Windows based PC software for system control, data acquisition and review.
The 3F/PIC Series offers a choice of mass range and ion optical configurations to precisely match your application requirements.
Hiden 3F/PIC Triple Filter systems benefit from:-

> Long term stability
> Enhanced high mass sensitivity
> High abundance sensitivity
> 7 decade continuous dynamic range
> Fast response
> Direct control of mass resolution
> Molybdenum triple-stage mass filter



For the most demanding analytical requirements in research or process applications the triple filter mass spectrometer is an essential tool.
The introduction of short RF-only filter sections which precede and follow the primary mass filter provide two key benefits:-
> Strict control of electrostatic fringe fields for optimum high mass transmission efficiency
> Enhanced long term stability with first order contamination depositing harmlessly on the RF-only pre-filter stage.
For fast event UHV gas studies and thermal desorption applications the PIC is the instrument of choice. With full control of all ion source parameters and mass range options upto 1000 amu it is ideally suited to both neutral and radicals analysis.
The EPIC benefits from mid-axis (pole bias) potential, scanning +/- 100V, for retarding grid ion energy analysis and optimised ion beam detection. Positive and negative ions can be monitored as well as neutrals and radicals. EPIC is also designed for time resolved measurements.
With all the features of PIC and EPIC Hiden's IDP system provides for mass analysis of low energy ions with it's integral 4 lens ion optics assembly. The IDP is particularly suited to electron, photon and laser stimulated desorption studies.
Both the EPIC and IDP instruments have upgrade paths to SIMS specification.