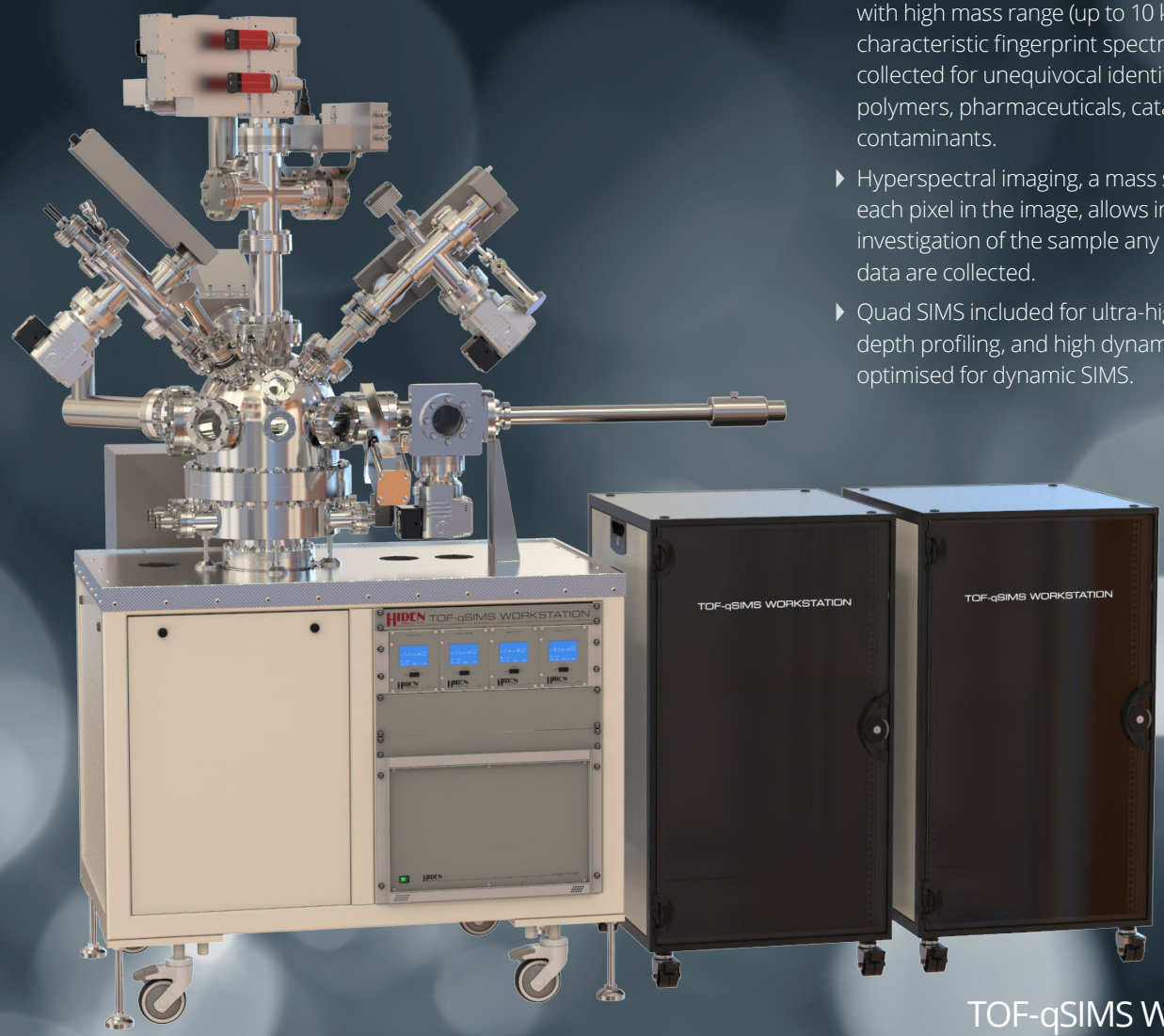
The **NEW** ToF - qSIMS Workstation

INNOVATIVE TIME OF FLIGHT - QUADRUPOLE SIMS SYSTEM

Key Features

- Time of Flight analyser provides parallel detection of secondary ion species for highly surface specific measurements.
- High mass resolution (>1500 M/ΔM) combined with high mass range (up to 10 ku) allows characteristic fingerprint spectra to be collected for unequivocal identification of polymers, pharmaceuticals, catalysts and contaminants.
- Hyperspectral imaging, a mass spectrum for each pixel in the image, allows interactive investigation of the sample any time after data are collected.
- Quad SIMS included for ultra-high-resolution depth profiling, and high dynamic range, optimised for dynamic SIMS.



TOF-qSIMS Workstation

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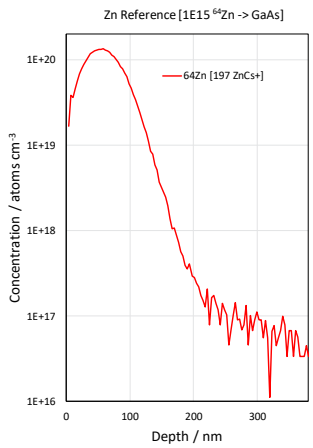
High mass fragments from PTFE film

HIDEN ANALYTICAL

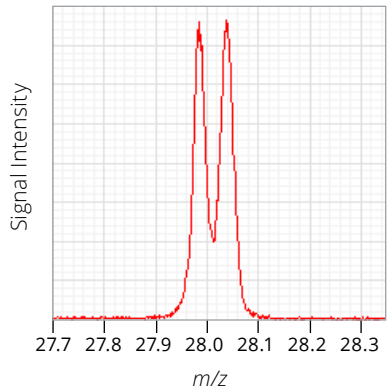
Time of Flight - perfect for Static SIMS analysis

The sample is bombarded by a low dose of primary ions (less than 10^{12} ions per square cm is considered the maximum dose limit for static SIMS) that cause emission of the top monolayers. The low dose means that individual primary ions impact virgin regions and sputter large characteristic fragments that can be used to identify the material. The parallel detection ability of the ToF means that the entire spectrum is collected before the static limit is exceeded and the sensitivity at high mass provides spectra rich in high mass fragments. The excellent mass resolution, and isotopic detection, allows unequivocal identification of these species.



Retaining the proven MAXIM Quadrupole analyser gives the ToF-qSIMS a no compromise performance in high depth resolution, high sensitivity depth profiling – depth profile with quadrupole or ToF detection.

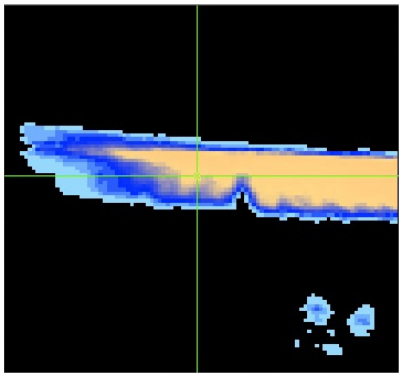
MCs$^+$ analysis of Zn implant in GaAs semiconductor



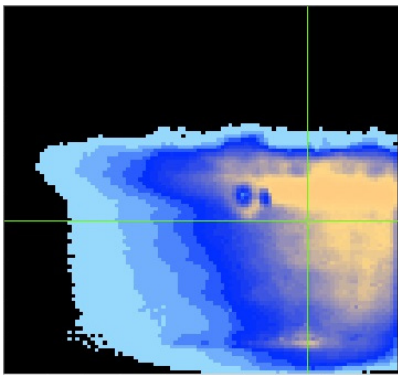
Mass resolution is typically M/ΔM 1500.

Easily separates ^{28}Si (27.977u) from C_2H_4 (28.031u)

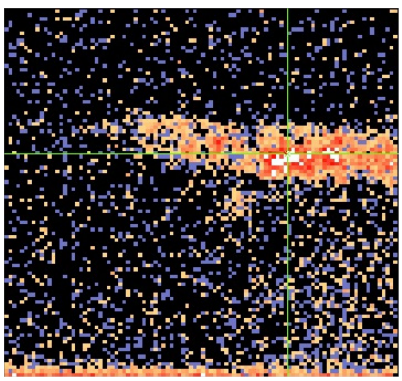
Razor blade (field of view 2mm square)



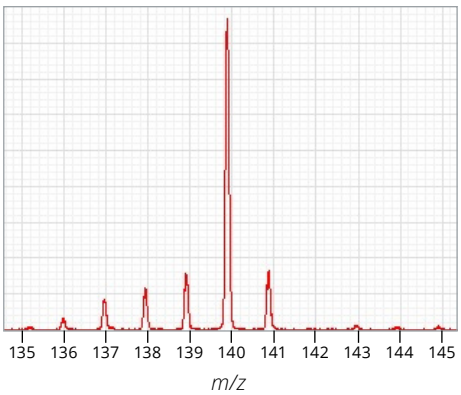
^{31}CF from Lubrication

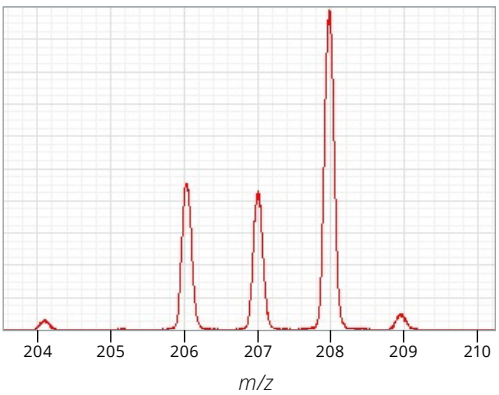


^{23}Na from heat treatment



^{194}Pt corrosion prevention on cutting edge





Gunshot residue – lanthanide species and lead from the cartridge primer are isotopically detected on paper placed near to a discharging firearm.

TDS 211/1