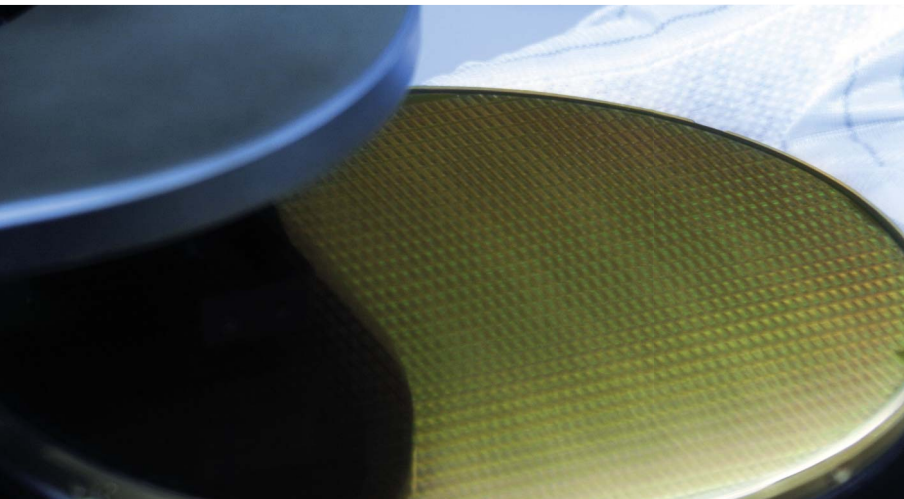# IONICON

AMC-Monitor
T-1000

Automated Airborne Molecular Contamination (AMC) Monitoring

The all-in-one analyzer for FOUP, fab and clean-room environment

The new AMC-Monitor T-1000 real-time analyzer monitors most volatile organic and several inorganic compounds with pptv-level detection limits.

The AMC-Monitor is based on the IONICON PTR-TOFMS series featuring advanced time-of-flight technology and the unique AME software package that automatically measures and quantifies target substances with push-button simplicity. In addition, the R&D mode enables the user to discover new or unknown contaminants by giving access to high-resolution real-time mass spectra.

24/7 real-time monitoring allows the detection of short-term spills and leckages to track and document AMC levels to rapidly alert for critical concentration levels. The high sampling frequency fosters monitoring multiple sampling points through optional multiplexing systems. This enables the parallel monitoring of clean-room environment, but also FOUPs or selected tools.

The AMC-Monitor T-1000 can easily be specialized to various monitoring applications by loading application specific recipes.

Contact us to challenge our team with your AMC application!

> FOUP monitoring
> Fab clean-room monitoring
> Monitoring of outside/intake air
> Filter and tool-level testing

Find out more:

www.amc-monitor.com

IONICON

THE SOLUTION FOR REAL-TIME TRACE GAS ANALYSIS

AMC-Monitor
T-1000

SEMICONDUCTOR INDUSTRY
THE AMC CHALLENGE

Airborne molecular contamination (AMC) is a concern for high-tech manufacturing processes, especially in the microelectronics industry and the production of semiconductors. Organic contamination can cause adverse effects on production tools and consequently increase costs. Contamination-free manufacturing is a viable goal and is achieved by source control and source monitoring in combination with filtration solutions in air handling systems.

AMC contamination in cleanroom environments is predominately created by internal sources such as spills or leaks of process chemicals, solvents, aromatic compounds from ambient air and return air, re-entrainment of exhaust air as well as material outgassings which is also a concern in FOUPs that are used for wafer transport. Organic contamination can cause substantial costs in terms of wafer damage or loss and tool down-time.

Permanent monitoring of the AMC level helps detecting incidents, identifies sources, stabilizes production and prevents unexpected shortfalls of the filtration units service life.

THE MONITORING SOLUTION

IONICON, with its ultra-sensitive real-time trace gas analyzers, provides powerful solutions to detect organic contamination in clean-room environments, as well as at the production tools and in FOUPs.

The unique PTR-TOFMS technology has the ability to continuously monitor for AMC in real-time with detection limits as low as 1 pptv for production-critical compounds like solvents, siloxanes, refractories and other VOCs. As an added value total VOC concentrations can be reported without increasing the short measurement time.

THE AMC-MONITOR T-1000

The AMC-Monitor is a modular and flexible platform for Airborne Molecular Contaminations (AMC) monitoring in semiconductor applications such as:

► FOUP analysis with a focus on VOCs and condensables incl. full integration with Pfeiffer Vacuum APA 302 pod analyzer and cleanroom analyzers.
► Clean-room monitoring in fabrication plants:
automated detection of AMC at multiple sampling points with an integrated multiplexing system, directly in the fab at variable locations and even at the tool-level.

► Monitoring of outside and intake air: automated fence line monitoring incl. alarm levels, up- and downstream filter testing.

THE TOF-MS ADVANTAGE

The TOF (time-of-flight) technology records complete high resolution mass spectra in a split second, which offers these exclusive advantages:

► incredible speed - enlarge substances library without increasing measurement cycle time
► highest sensitivity even for large molecules - detects refractories and SVOCs
► high-resolution - enhanced separation in complex samples
► identification of unknown AMC
► continuous monitoring of total VOC concentrations

THE AME SOFTWARE
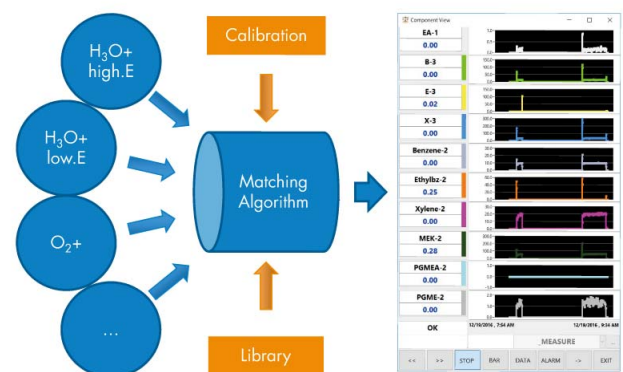
The AME software measures AMC in more than 8 different ionization modes and aggregates this data for detecting and quantifying target species. By automatically changing the pre-cursor ions and additionally modulating the energy (E/N) in the ionization process, a maximum confidence level for substance identification can be achieved. A pattern-matching algorithm combined with a compound library labels and quantifies the AMC present even in complex air samples. All this know-how by IONICON experts is packaged in pre-programmed measurement recipes that can be easily activated by the user.

The IONICON AMC-Monitor is the ideal tool for current and future challenges in the semiconductor industry.