



Press release – Innsbruck – 29. November 2016

IONICON launches new high-resolution PTR-TOF 4000 trace gas analyzer

The world's smallest, commercial high-resolution PTR-TOFMS instrument for VOC monitoring

IONICON Analytik, the Austrian based leading manufacturer of real-time trace VOC analyzers, introduces a new compact high-resolution instrument. For the first time IONICON combines high-sensitivity with a high mass resolving power in a small and lightweight PTR-TOFMS.

The [PTR-TOF 4000](#) has already been successfully deployed aboard NASA flying laboratories for air quality monitoring.

The development

In 2014 the PTR-TOF 1000 was launched. A new platform developed by IONICON with the aim to create a compact and affordable PTR-TOFMS allowing customers from all over the world in various application areas to benefit from the company's advanced time-of-flight technology.

Inspired by this achievement and rewarded with immediate success in the market of more than 30 PTR-TOF 1000 systems sold since its introduction, the IONICON took this concept one step further.

The new instrument

"We decided to develop the 'no-compromise' trace VOC analyzer. A high-resolution PTR-TOFMS but small, lightweight, extremely sensitive and also competitively priced", IONICON CEO Lukas MÄRK explains the challenges.

These efforts lead to the new PTR-TOF 4000 featuring the new Hexapole "[ION-GUIDE](#)" technology and a novel high-resolution TOF. The results are an impressive mass resolution of up to 4000 m/ Δ m and a sensitivity of 200 cps/ppbv with a low detection limit of below 5 pptv.

The PTR-TOF 4000 complements IONICON's PTR-TOFMS series ideally, being positioned in between the PTR-TOF 1000 system and the company's current flagship instrument, the PTR-QiTOF.

Proven aboard NASA's flying laboratories

Prototypes of the new PTR-TOF 4000 have been extensively tested in the field. A long-standing cooperation between the University of Innsbruck and IONICON made it possible to participate in airborne campaigns aboard NASA's atmospheric research aircrafts for measuring air pollution in the atmosphere (e.g. [KORUSAQ](#)). Mr. Märk comments on this mutually beneficial collaboration: „We were able to test the PTR-TOF 4000 prototypes under the most demanding conditions and could also benefit from the scientists' experience when optimizing the performance of our novel trace VOC analyzers.“

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These research and development activities received support from the Austrian Space Applications Programme (ASAP) of the Austrian Research Promotion Agency (Österreichische Forschungsförderungsgesellschaft, FFG).

About IONICON

IONICON is the world's leading manufacturer of real-time trace gas analyzers for low concentration volatile organic compounds (VOCs) monitoring, based on the unique Proton Transfer Reaction – Mass Spectrometry (PTR-MS) technology, since 1998.

The main scientific application areas include atmospheric chemistry, environmental research, exhaust analysis, food and flavor science, illicit substances detection and breath gas analysis.

In addition to laboratory instruments, IONICON also produces specialized VOC monitoring systems for industrial applications such as the semiconductor industry or for field deployment. A strong technical background allows the company to build its own time-of-flight mass spectrometers, sampling and calibration systems for its analyzers, fast gas-chromatography and auto-sampling modules incl. various multiplexing set-ups.

IONICON hosts an application lab at its headquarters in Innsbruck, Austria offering analytical services to its customers, from initial sample tests to long-term studies.

In 2016, the company celebrated its 300th sold PTR-MS instrument.

Learn more about IONICON [here](#).

Resources

The new IONICON PTR-TOF 4000 Compact high-resolution PTR-TOF-MS - Trace VOC Analyzer.
(Picture: IONICON)



High resolution: http://www.ionicon.com/sites/default/files/uploads/images/PTR-TOF_4000.png

More about missions aboard NASA's research aircraft:

<http://blog.ionicon.com/tag/nasa/>



The IONICON PTR-TOFMS installed aboard the NASA research aircraft. (Picture: NASA)

High resolution: https://www.uibk.ac.at/public-relations/presse/archiv/2016/749/bilder/pic_20160616134219_6808e327dc.jpg

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