



*Vocus* PTR-TOF

Online Trace Gas Analysis  
with Market Leading Performance



TOFWERK

With sub-ppt limits of detection and mass resolving power up to 15000, the Vocus PTR-TOF is taking laboratory and field analysis of VOCs in exciting new directions.

## Market Leading PTR-MS Performance

### Sub-ppt Limits of Detection in Seconds

- Quantify trace organic compounds with high sensitivity
- Increase measurement throughput with high speed analysis
- Profile dynamic gas-phase processes with extreme precision

### Highest Available PTR-MS Mass Resolving Power

- Resolve isobaric compounds in complex mixtures
- Identify analytes based on exact mass and isotope patterns

### Select a Vocus Model to Meet Your Needs

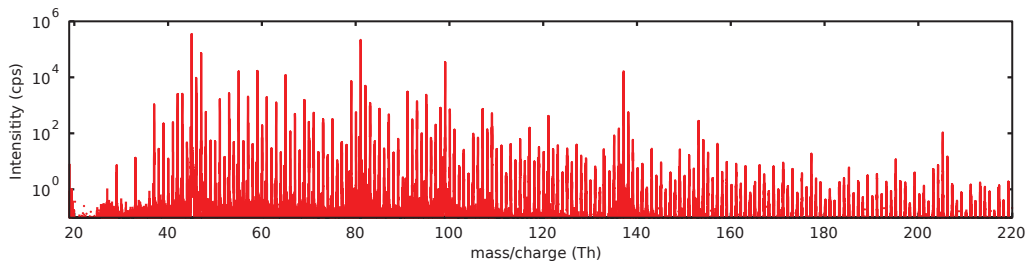
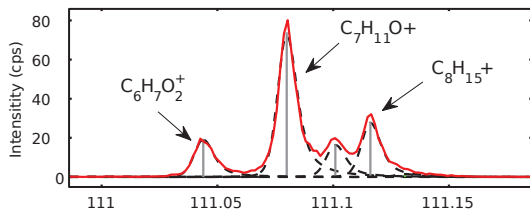
	<b>Sensitivity</b> cps/ppb xylene	<b>Limit of Detection (LOD)</b> 1 min, BTX	<b>Resolving Power at Specified Sensitivity<sup>a</sup></b> M/ $\Delta$ M	<b>Maximum Resolving Power<sup>a</sup></b> M/ $\Delta$ M
<b>2R</b>	30001	1 ppt	10000	15000
<b>S</b>	30001	1 ppt	5000	7000
<b>Scout</b>	4000	5 ppt	3500	4000
<b>Elf</b>	500	20 ppt	500	750

a. Each model can be operated with higher resolving power at reduced sensitivity.

# Complex Mixtures

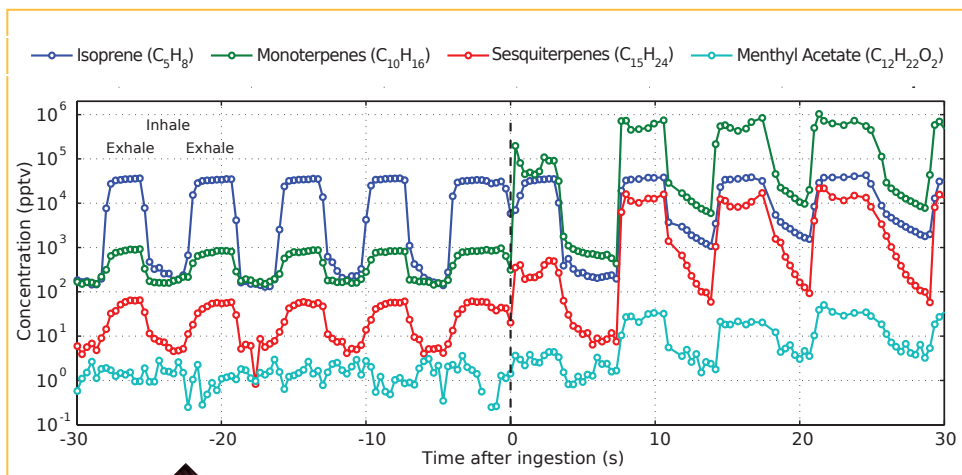
**High mass resolving power enables confident analysis of individual compounds within complex mixtures.**

This mass spectrum shows the diverse collection of biogenic VOCs that was emitted when a single pine needle was cut in lab air in front of the inlet of the Vocus 2R PTR-TOF. The inset demonstrates the capability of the 2R to separate and identify isobars.



# Fast Measurements

The Vocus PTR-TOF can quantify dynamic changes in even ultra-low concentration compounds.

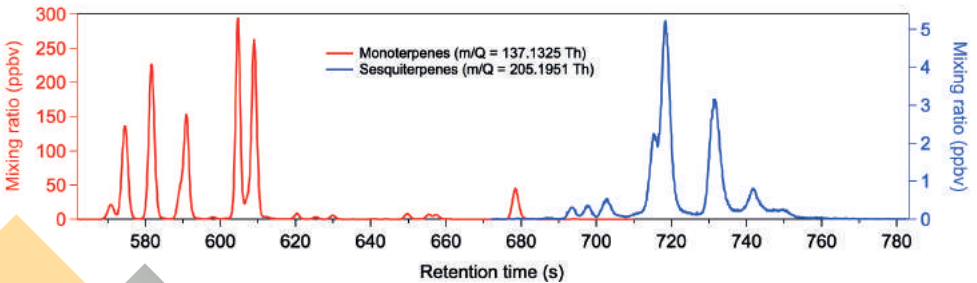


Human breath was monitored in real time at 3 Hz before and after the ingestion of a Ricola™ herb cough drop. Hundreds of compounds were present in the post-ingestion data, including monoterpenes, sesquiterpenes, and other compounds of herbal origin. A subset of detected compounds is shown in order to demonstrate the fast time response and broad dynamic range of the Vocus PTR-TOF.



# Isomers

The combination of fast gas chromatography (GC) and the Vocus PTR-TOF provides a rapid, two-dimensional method to characterize isomers.



The headspace of a beer sample was analyzed by fast GC coupled to a Vocus 2R PTR-TOF. The chromatographic separation ahead of the PTR-MS isolates compounds of interest from the high concentration ethanol that typically complicates PTR-MS analysis of alcoholic beverages. The numerous chromatographic peaks in the figure above are isomeric terpenes. Such isomers, which have identical mass/charge but different structure, are not distinguishable by PTR-MS alone, but can be identified and quantified via this fast two-dimensional approach. The overall analysis time was approximately 15 min.





## Vocus PTR-TOF

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Talk to Our Team  
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