



LAB SERVICE ANALYTICA: ODORPREP® TECHNOLOGY AND OTHER RENOWNED BRANDS



A CURA DELLA REDAZIONE

LAB SERVICE ANALYTICA SRL WAS FOUNDED IN 1984: HIS MISSION WAS TO PROVIDE SOLUTIONS FOR SEPARATION SCIENCES IN FOOD SAFETY, ENVIRONMENTAL AND LIFE CHEMISTRY, KEEPING THE CUTTING EDGE IN INNOVATIVE TECHNOLOGIES. LAB SERVICE ANALYTICA SRL BECAME ALSO THE "REFERENCE COMPANY" FOR THE REFERENCE MATERIALS IN ITALY DISTRIBUTING THE MOST RENOWNED BRANDS. THE COMPANY IS LOCATED NEAR BOLOGNA (ITALY).

Our more than thirty years' commercial experience in analytical sectors account for our ability to introduce innovative techniques and instruments (e.g. Sample preparation – GPC for pesticide extraction and Power-Prep for dioxine extraction and purification): we have a technical and commercial staff able to identify solutions and provide customized instruments.

The high technical level reached by Lab Service Analytica 's team was recognized by the European program Horizon 2020; in 2016 the company was awarded and financed of about 1 million euro for developing the proprietary OdorPrep® technology, a real-time unattended air and odor sampling and monitoring system (www.odorprep-eu).

The sources of unpleasant odours are of great concern for authorities, due to the pressure of the public opinion, independently from any possible health impact. Industrial facilities and agricultural areas are often surrounded by human settlements; accidental and, or, systematic losses of



unpleasant smelling substances from industrial and agricultural facilities have to be clearly documented and recorded. There is a clear need for an automatic device, able to take investigative samples, when such problems arise: since 2013

OdorPrep® technology was developed by Lab Service Analytica srl.

This innovative system is composed by an air sampling device activated through a network of human sensors communicating via a web platform.

The network has to be representative of the population surrounding the target area

under monitoring. Once nuisances are perceived by the network, OdorPrep® is activated and starts to collect air samples for standard olfactometric analysis.

Additional sampling accessories can be added to enable chemical investigation integrated by sensory instruments.

In conclusion, OdorPrep® has the unique

feature of capturing air in real time without delays, immediately at the time of perception of the annoyance. At the beginning of 2018, Lab Service Analytica srl will launch a large-scale validation of OdorPrep® located in relevant areas, countries and in selected overseas markets.

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Lab Service Analytica srl continues to identify innovative partners for serving the Italian market at the best; in this regards in 2018 the company finalized a distribution agreement with G.A.S. (Gesellschaft für analytische Sensorsysteme mbH) (Dortmund, Germany).

G.A.S. is a German high-tech company founded in 1997 that is specialized in the field of gas analytical solutions for specific assignments. The range of applications is typically related to the measurement of traces of Volatile Compounds (VCs).

The interdisciplinary team of chemists, physicists, electrical and software engineers stands out due to its competence and experience related to the coupling of Ion-Mobility-Spectrometry (IMS) to Gas Chromatography (GC).

In contrast to other IMS manufacturers, G.A.S. applies its instrumentation to civilian applications where it further adapts and optimizes its technology platform to the individual customers' analytical assignments and requested workflows.

During the 20 years of its existence G.A.S. not only built-up fundamental know-how in the field of IMS as it develops and manufactures its sensors, electronics, same as software in-house but also on coupling gas chromatography (GC) to the IMS, which is key to make optimal use of the IMS outstanding sensitivity.

Using IMS detectors means obtaining qualitative information due to its intrinsic physical separation same as quantitative analysis by evaluation of the substance specific signal. However, when it comes to rather complex matrices like in food & flavor, process, environmental same as human breath related applications the coupling of gas chromatography is a MUST.

By this coupling G.A.S. realizes an enhanced 2-dimensional separation (full orthogonality) so that co-elution problems can be overcome and a reliable substance identification at extremely low concentrations

(typically ppb-/sub ppb) can be assured.

FlavourSpec® is a dedicated GC IMS instrument for measurement of flavor inducing traces of volatiles, coupled with an automatic static headspace sampling of liquids and solids (no sample pre-treatment). Due to the 2-dimensional separation characteristics GC-IMS technology stands out with a unique performance in several quality control related applications. In combination with an automated sampling system fast and efficient workflow can be realized.

The sensitivity (low-/sub ppb) for volatile organic compounds (VOCs) lies in the range of the human nose for many applications so that impartial results can be provided to e.g. support sensory panels and avoid time and labor-intensive analysis.

GC-IMS: is the generic GC IMS instrument, with an integrated pump and 6-port-valve for active sample introduction; the instrument can be portable and suitable for on-site applications (it can also be equipped with an operation gas recycling unit).

The GC-IMS can be adopted to various environmental and process control related applications by adjusting sampling, operating mode as well as data analysis.

Robustness, self-check functions and easiness of operation are key premises for industrial solutions. A straightforward menu, without the need of an analytical background, completes G.A.S. on-site focused approach. By that it becomes feasible to transfer the analytical lab to the place where instant and reliable results are needed.

It is also available with a single-click menu/closed firmware for several applications, such as detection of siloxanes, control of odorants in natural gas and monitoring of toxic industrial compounds.

BreathSpec®: is a dedicated GC IMS instrument for breath analysis which represents a diagnostic technique providing information beyond conventional analysis of blood and urine.

Advantages of breath tests are the noninvasive and painless testing procedures. Furthermore, no specially trained personnel are required for sampling. Hundreds of different substances are found in human breath depending on nutrition, metabolic state, diseases, medication, microbial infections and personal oral hygiene. The appearance or absence of specific metabolites can be used for early diagnosis and their presence for therapy control.

Beyond that, breath analysis can be used to analyze poisoning of humans after exposure to toxic chemicals. Medical research also addresses the detection of diseases via specific markers from the metabolism found in breath; G.A.S. developed a user friendly low-cost set-up to sample breath in standard disposable syringes to introduce the sample via a Luer-adaptor into the measurement device.

The instrument can be equipped with operation gas recycling unit, making it transportable for sampling at site.

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