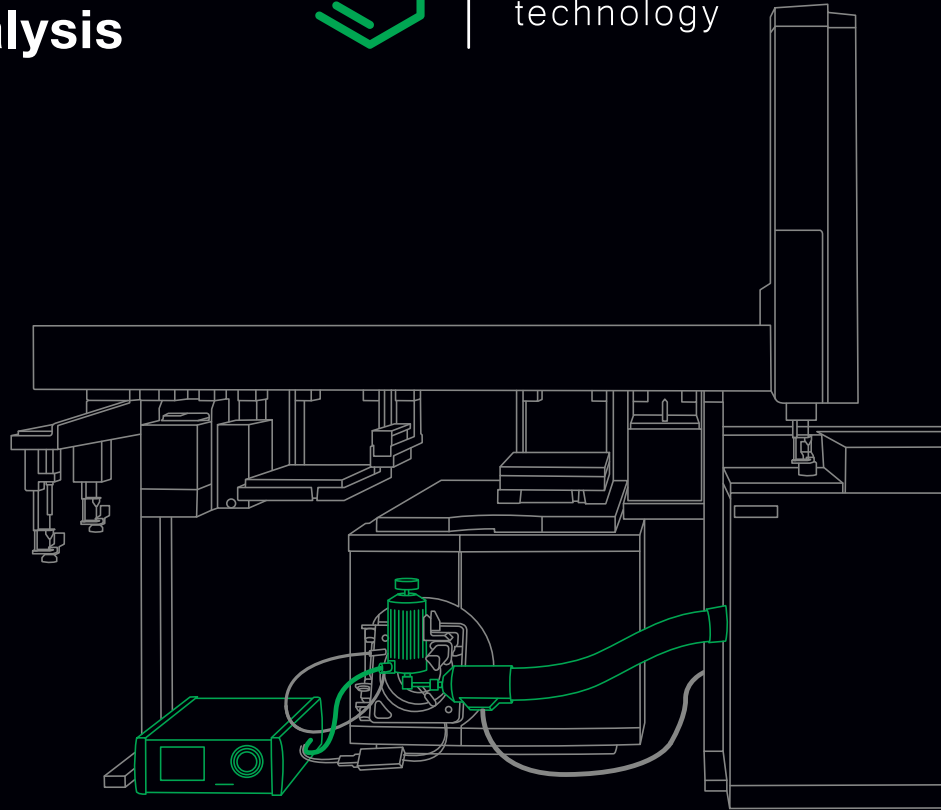


# An Integrated Solution to Speed up Routine Analysis

Maximize sample throughput while  
upholding rigor quantification



Sierit  
technology



# Integrated Rather than Separated Solution

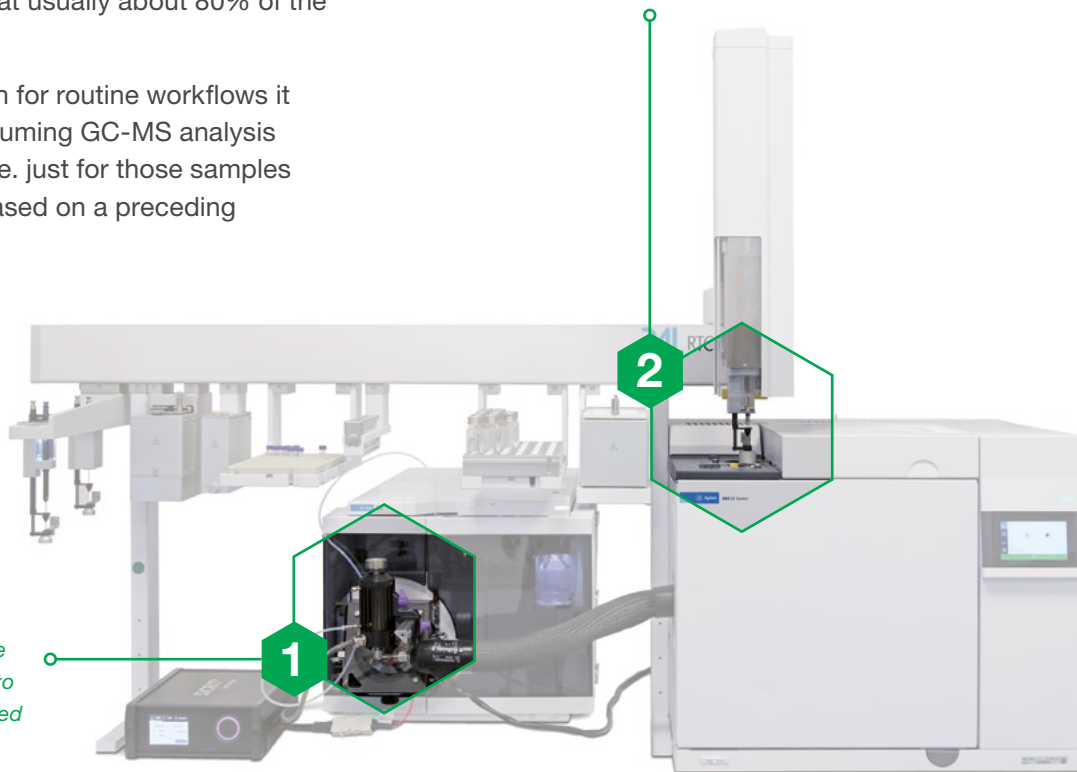
The tedious sample preparation combined with the long analysis times make it very complex to handle the increasing volume of samples in routine laboratories. This inefficiency is even reinforced by the fact, that usually about 80% of the samples are found negative.

With Plasmion's SICRIT® solution for routine workflows it is possible to perform time consuming GC-MS analysis for conspicuous samples only, i.e. just for those samples that have been found positive based on a preceding Direct-MS-Screening analysis.

This 2-step analysis workflow can be conducted fully automated in combination with a PAL autosampler and enables to increase the efficiency of routine analysis workflows by more than 50%.

*Automated injection of the sample in the SICRIT® GC/SPME/Desorption Module to screen if the sample contains a suspected compound (e.g. pesticide).*

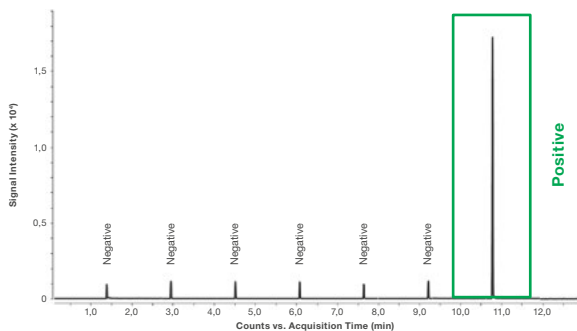
*If the sample is found positive, automated injection of the same sample into the GC for a confirmatory routine GC-MS run.*



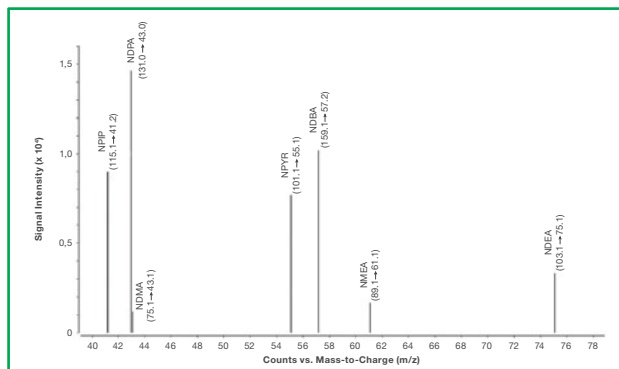
# Enabling Unique Workflows

1

Targeted screening of samples for distinct analytes via fast liquid or headspace injection.

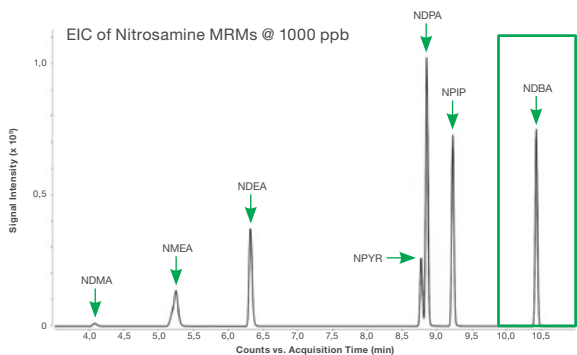


Direct quantification based on individual MRM transitions.

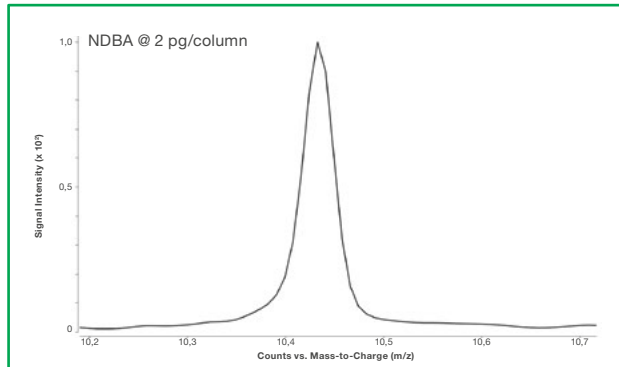


2

Confirmation and validation of positively pre-screened samples via GC coupled to LC-MS system.



Sensitive GC-MS/MS quantification down to ppt levels.



# A Solution Based on Superior Technology (SICRIT®)



## Increased Sensitivity

The flow-through ion source ensures loss-free detection of only one dominant precursor species, leading to outstanding sensitivity.

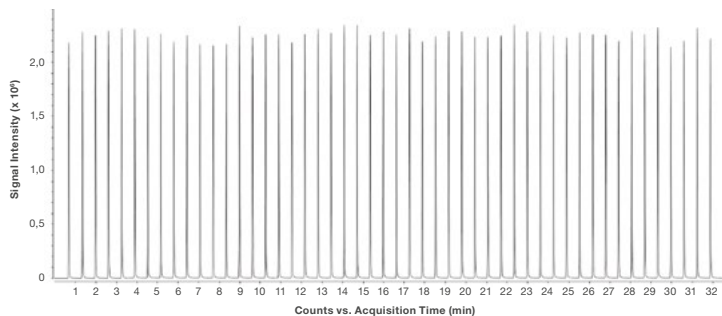


## High Reproducibility

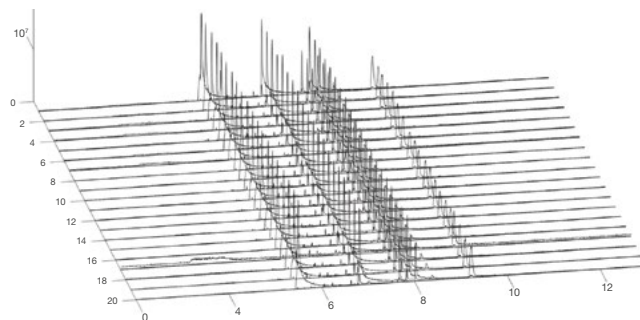
Automated workflows by use of PAL auto-sampler systems ensures high reproducibility, even for direct injections.



*Reproducible direct liquid injection*



*Reproducible GC-MS runs*





## No Fragmentation

The unique shape of the cold plasma enables a soft ionization of analytes and avoids fragmentation.

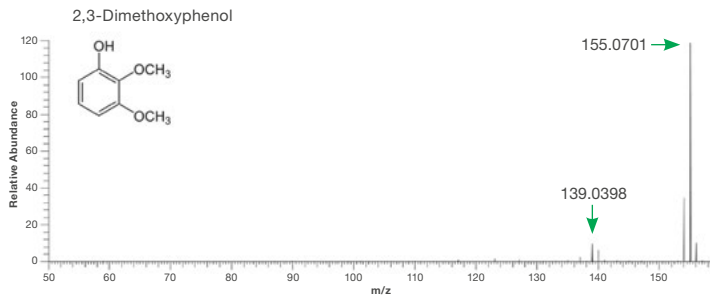


## Enhanced Range of Analytes

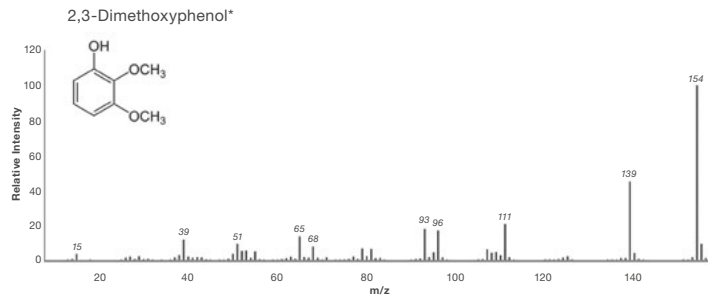
Three simultaneous ionization mechanisms expand the range of detectable analytes, covering polar and non-polar components.



*Spectrum of SICRIT® - Almost No Fragmentation*



*Fragmented Spectrum of EI Ionization*



\*NIST Chemistry Webbook: <https://webbook.nist.gov/chemistry>

# Delivering Significant Economical Advantages



**Plasmion's integrated SICRIT® solution for routine workflows leads to a significant increase in sample throughput**

Time consuming GC analysis (~15 minutes) is only performed for conspicuous samples while vast majority of inconspicuous samples are only analyzed with fast pre-screening (~ 15 seconds) approach.



**Plasmion's integrated SICRIT® solution for routine workflows reduces capital expenditure and required laboratory space**

The SICRIT® solution enables to perform two analysis with the same technology setup instead of requiring separate systems – this saves acquisition costs and prevents the need for additional laboratory space.



**Plasmion's integrated SICRIT® solution for routine workflows meets highest demands in terms of performance**

Direct-MS-Screening with SICRIT® GC/SPME/Desorption Module is quantitative and the flow-through geometry of the ion source additionally increases the analyte transfer into the respective LC-MS system.



# Provided by a Single Trusted Partner

Plasmion provides an integrated solution based on its plug & play SICRIT® ionization technology. All required instrumentation, also 3rd party instruments (e.g. GC and PAL systems), can be directly ordered via Plasmion.



You have: Mass spectrometer (MS) with atmospheric pressure inlet to be used as detection technology

We have: required and optional\* equipment for GC coupling to LC-MS systems (orderable via Plasmion)



**Gas Chromatograph (GC)** to be used as separation technology



\***CTC PAL Autosampler** to enable automated sample introduction



**SICRIT® Ion Source** to ionize polar and non-polar compounds



**SICRIT® SC-30 Control Unit** to control the ionization source and the connection modules



**SICRIT® MS Interface** to establish electrical and mechanical connection to the MS



**SICRIT® GC/SPME-Module** to interface the Ion Source with the GC



**SICRIT® Heated Transfer Line** to connect the GC to the GC/SPME-Module

# Plasmion 3rd Party Products

## Gas Chromatographs e.g. Agilent GC 8860

The 8860 Gas Chromatograph (GC) is dedicated for routine GC analysis convincing with reliability and robustness. The system features a touchscreen display, a microchannel based EPC, and an Instrument Intelligence Functionality (IFF) for diagnostics and maintenance.

Together with Plasmion's GC coupling solution, the GC 8860 enables new workflows in combination with LC-MS instruments.



## PAL RTC Autosampler

The PAL RTC is developed to maximize productivity in the laboratory. Its Robotic Tool Change (RTC) allows to switch between different syringes and SP(M)E tools and thus brings sample preparation to a higher level.

In combination with Plasmion's product portfolio, highly automated sampling and sample analysis can be realized. Furthermore, workflows with and without GC can be implemented by one instrumental setup.



# Plasmion Products

## Ion Source

The SICRIT® Ion Source can be operated with any carrier gas (even room air) and thus enables direct MS screening. Moreover, it enables a gas-tight measurement of sensitive processes or fully quantitative connection to classical GC/LC methods.

The cold plasma ionization based on a dielectric barrier discharge enables fragment-free measurement of multiple analytes.



## SC-30 Control Unit

The SICRIT® SC-30 Control Unit enables to control the cold plasma in the SICRIT® Ion Source as well as the required parameters of all connection modules (GC-SPME/LC/IR desorption). All parameters can also be controlled via a respective software. An integration with software of other vendors is not required to operate the system.

# Plasmion Products



## MS Interfaces

The SICRIT® MS Interfaces are dedicated for specific MS instruments to establish an electronic and mechanical connection. There are interfaces available for almost all common MS instruments of Thermo Fisher, Agilent, SCIEX, Bruker, Waters, Shimadzu, and Jeol. Interfaces to other instruments are available upon request.

## GC/SPME Module

The SICRIT® GC/SPME Module combines ionization technology with state-of-the-art sample separation and/or enrichment techniques.

- It enables a direct SICRIT®-MS connection from a GC or microbalance via a heated transfer line.
- It enables direct SPME-SICRIT®-MS measurements with automated injections featuring a PAL automation system.
- It enables fully quantitative direct measurements (manual or automated) of liquids and headspace samples.



## Heated Transfer Line

The flexible SICRIT® Heated Transfer Line enables the connection between the GC and the GC/SPME Module. It is powered and controlled via an external controller or directly by most GCs as integrated solution. The flexible and fully heated design enables loss-free sample transport and avoids cold spots.



Plasmion

simple smart sensitive

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