

# LC

## Principle

**LC** is a common technique used to separate non-volatile compounds from complex mixtures. This separation is based on the interactions of the molecules with the mobile and stationary phases.

It is frequently coupled to a wide variety of detectors, such as Ultraviolet-Visible (LC-UV/Vis) and mass spectrometer (LC-MS, LC-MS/MS and LC-IT/MS), that cover a broad range of sensitivity, specificity and selectivity, providing both qualitative and quantitative information.

High Resolution Mass Spectrometry (HRMS) is used for identification of new and unknown PFAS, including potential transformation and reaction-intermediate products in both polymeric and environmental samples. HRMS provides more information about sample composition, useful for material characterization and process manufacturing, and allows prioritization of substances for further target analysis.

## Capabilities

- (Ultra) trace analysis of PFAS and fluorosurfactants in polymeric materials.
- Determination of PFAS residues in environmental samples (water, air) during monitoring and control procedures.
- Qualitative and quantitative analysis of intermediate products.
- Identification of unknown compounds during the development and production of new materials
- Identification of fluorosurfactants chemical structure or isotopic composition
- Rapid quantitative and conformational screening for unknown structures

## Assets

|                                                                                     | Asset                        | Details                                                                                |
|-------------------------------------------------------------------------------------|------------------------------|----------------------------------------------------------------------------------------|
|    | Thermo LCQ Fleet             | Ion Trap LC-MS (LC-IT/MS)                                                              |
|  | Agilent 6470                 | Triple Quadrupole mass spectrometer (Qq Q MS)<br><br>Sensibility range from ppb to ppt |
|  | Agilent 6495 (x2)            |                                                                                        |
|  | Agilent 1100                 | Ultraviolet-Visible Liquid Chromatography ( LC-UV/Vis) (x2)                            |
|  | Orbitrap Exploris 120        | High Resolution Mass Spectrometry (HRMAS)                                              |
|                                                                                     | Automation Asset             |                                                                                        |
|  | LC-Tech GmbH – FREESTYLE SPE | Automated Solid Phase Extraction (SPE)                                                 |

|                                                                                   |                                               |                                                      |
|-----------------------------------------------------------------------------------|-----------------------------------------------|------------------------------------------------------|
|  | <b>Gerstel MultiPurpose (MPS) RoboticPRO</b>  | Automated sample preparation and sample introduction |
|  | <b>Automated Solid Phase Extraction (SPE)</b> | Thermo Scientific Dionex AutoTrace 280 SPE PFAS      |

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