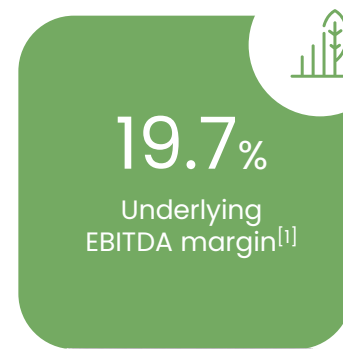


Spectroscopie proche infrarouge (NIR) : Outils et perspectives pour la recherche et l'innovation

4 Juin 2026



Top-tier specialty player



Global and close to our customers^[1]



AMERICAS

1

41% net sales

-0.2% YoY^[2]

29 industrial sites

4 major R&I centers



ASIA-PACIFIC & REST OF THE WORLD

2

34% net sales

-6.2% YoY^[2]

11 industrial sites

3 major R&I centers



EUROPE

3

25% net sales

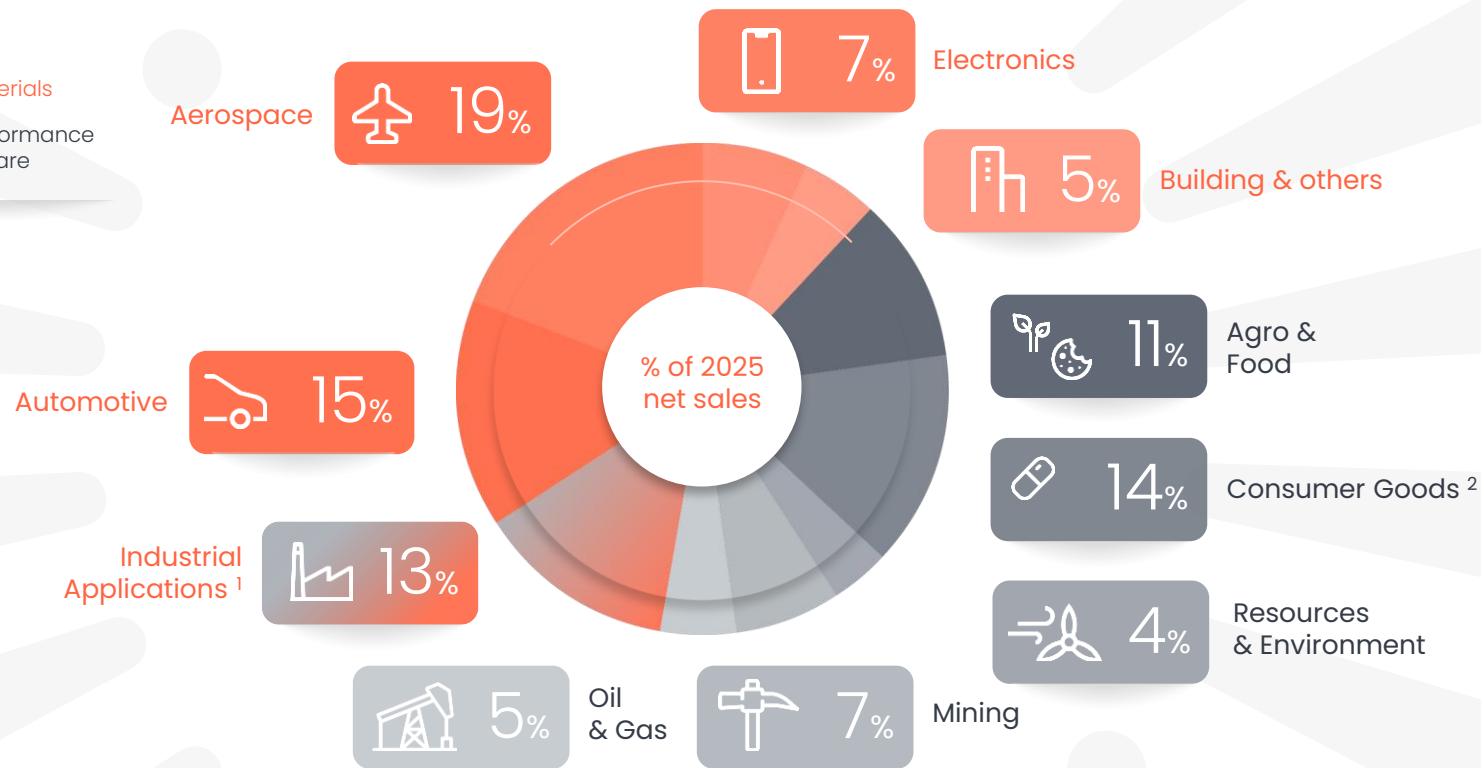
-4.2% YoY^[2]

14 industrial sites

5 major R&I centers

Leadership in growth markets

- Materials
- Performance & Care



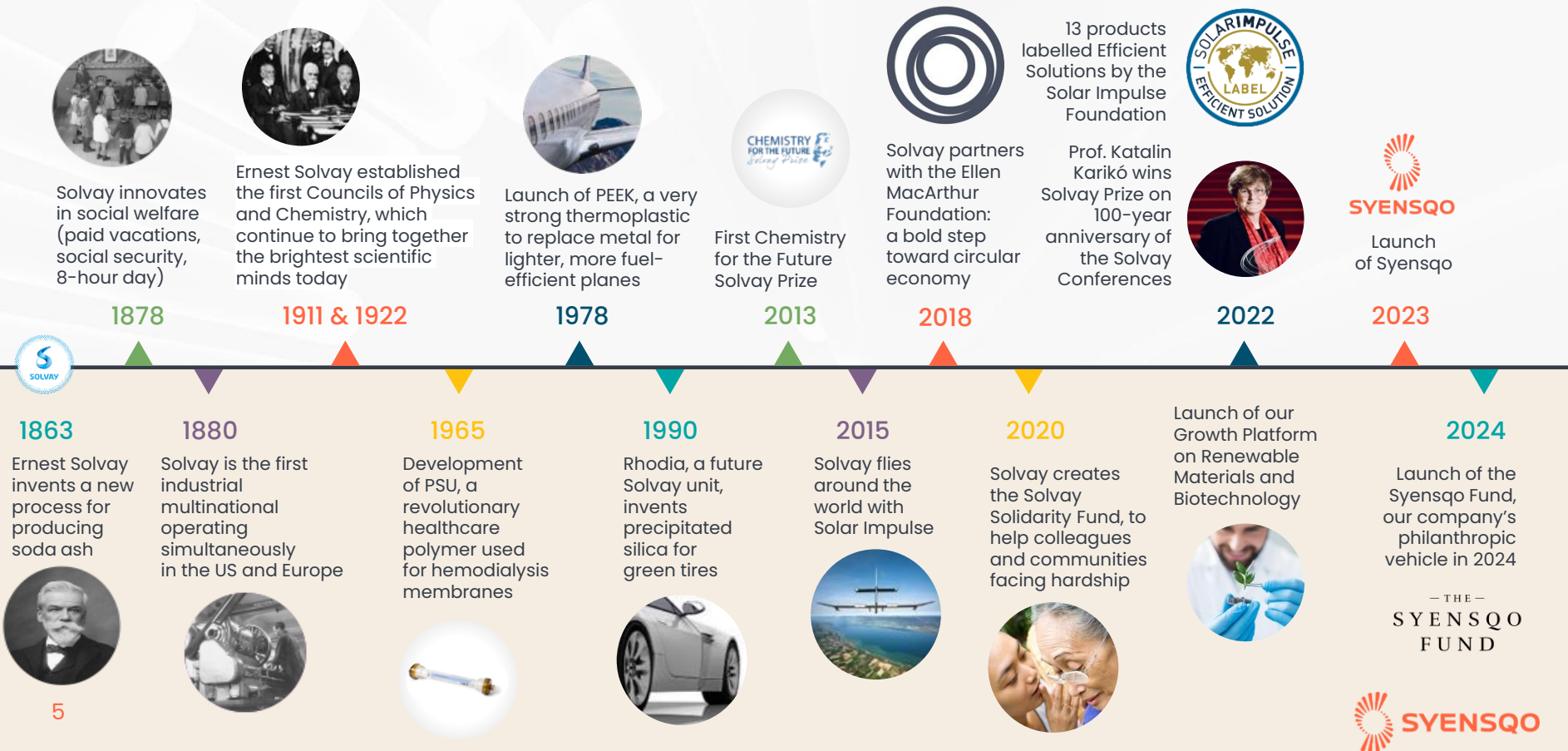
Source: Management reports

¹ Includes: Chemical Industry

² Includes: Home, Personal & Health Care

*in ~90% of today's portfolio based on net sales

A strong legacy and a passion for science



Solvay innovates in social welfare (paid vacations, social security, 8-hour day)



Ernest Solvay established the first Councils of Physics and Chemistry, which continue to bring together the brightest scientific minds today



Launch of PEEK, a very strong thermoplastic to replace metal for lighter, more fuel-efficient planes



First Chemistry for the Future Solvay Prize



Solvay partners with the Ellen MacArthur Foundation: a bold step toward circular economy

13 products labelled Efficient Solutions by the Solar Impulse Foundation



Prof. Katalin Karikó wins Solvay Prize on 100-year anniversary of the Solvay Conferences



Launch of Syensqo



1863

Ernest Solvay invents a new process for producing soda ash

1880

Solvay is the first industrial multinational operating simultaneously in the US and Europe

1965

Development of PSU, a revolutionary healthcare polymer used for hemodialysis membranes

1990

Rhodia, a future Solvay unit, invents precipitated silica for green tires

2015

Solvay flies around the world with Solar Impulse

2020

Solvay creates the Solvay Solidarity Fund, to help colleagues and communities facing hardship

Launch of our Growth Platform on Renewable Materials and Biotechnology

2024

Launch of the Syensqo Fund, our company's philanthropic vehicle in 2024

— THE —
SYENSQO
FUND





Products & Online Data Analysis Department

Focus on Industrial & Online Analysis

June, 2025



Products & On-line Data Analysis team

MISSION

Provide reliable methods and data for products, materials and online analysis

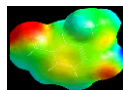
- Any kind of chemicals (organics, polymers, materials, solutions, gases) for **new product/process** in development or **existing industrial streams**
- Support from **Laboratory**, Pilot to Plant
- R&I projects, plant/QC/product stewardship support and External customers



Separation & Coupling
(traces, organics, polymers)



Structural
(traces, organics, polymers)



Digital tools
(automation, data & picture analysis, AI)

EXPERTISE



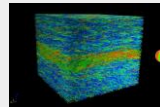
Trace analysis
(nature / quantification)



Sustainable materials / Naturality
(certification ISCC+, ..)



Structural characterization of advanced modified polymers and monomers



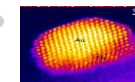
Material analysis to support the structure



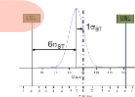
Online analysis for samplings and methods development



Elemental & Functional
(traces, organics, polymers, materials)



Morphology
(organics, polymers, materials)



Online (sensors) analysis
(R&I and industrial TS / CAPEX)

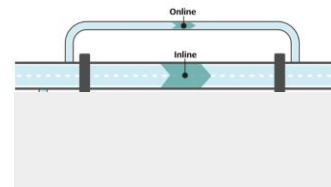
The Online & Industrial Analysis Team

What is "online" Analysis ?

- In situ (an eye in the reactor)
- In the main line
- Online (on a circulation loop or process bypass)
- **Advantages:** continuous and real time, HSE (no sample handling and preparation), automated, remote location and remote control, early drift detection and correction, *retroaction, self optimization*

Our missions:

- to develop and provide **sampling** set-up and **qualitative** or **quantitative analysis**
 - for your product and process monitoring
 - on liquid, slurry, gas, solid
 - on any kind of unit operation
- to provide **real time** and **automated** analysis to accelerate innovation projects
- From lab/pilot scale to industrialization
 - Choice of the best analytical method, techniques screening
 - Monitoring of **R&I feasibility phase in the lab**
 - Monitoring of **scale up phase on your pilot**
 - Monitoring in the plant for campaign
 - **Industrialization** from design to start up



From the lab



To pilot scale & industrialization

A wide range of analytical skills and analyzers

Skills in a wide range of analytical techniques

- Infrared Spectroscopy (gas and liquid), NIR, Raman, UV/vis, NMR
- Gas chromatography (mobile μ GC, GC/MS, Process GC)
- Online UHPLC (with on line dilution)
- Physicochemical analysis (density, refraction index, conductivity, viscosity, pH, etc.)
- Elementary analysis: LIBS
- Analytical engineering (sampling, integration,...)
- Chemometrics (Grams, Unscrambler, Vision, IC/IR ..)
- Other analytical techniques incl

A large panel of analyzers to monitor your processes

Equipements
5 μ GC equip with 4 columns
3 IRFT Thermo with gas cells
μ GC Mass portable Hapsite
1 GC agilent with gas injection
2 IR/ATR from Mettler + 1 HT ATR probe (250°C)
3 Raman Kaiser 785/532 nm
1 NIR system from Metrohm
3 UV/vis (transmission/ATR probe)
UHPLC on-line, 1 HPLC lab
1 GC agilent with liquid injection
LIBS gun (elementary analysis)
1 NIR for powder / solide



FTIR
With gas cells



μ GC-MS



Handheld (HH) LIBS Z-903
from Quantum
Ideal for rapid self-check on
solid or liquid



IR-ATR
Probe & optical fibre



μ -GC



Raman
Probe & optical fiber



NIR
Probes & optical
fiber for liquid &
solid



U-HPLC

Equipe Analyse en ligne – Centre de recherche de Lyon

Retour d'expérience :
Spectroscopie en ligne en support
pour la recherche



Multi instrumented conic reactor for techniques screening and selection



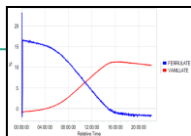
Un œil sur votre procédé

Sondes in situ pour le suivi en phase liquide

La spectroscopie est idéale pour un suivi in situ en temps réel grâce à des sondes et des fibres optiques.

Raman, IR-ATR, NIR, ... et d'autres encore à notre disposition (via des fournisseurs, AxelOne Analysis...)

pour suivre les principaux constituants, les tendances de conversion...



Suivi en phase gaz (ciel du réacteur, après le condenseur...)

Analyse des gaz en ligne (CO_2 , O_2 , CH_4 , H_2S ...) par $\mu\text{-GC}$ (micro-GC), FTIR (IRTF), ...

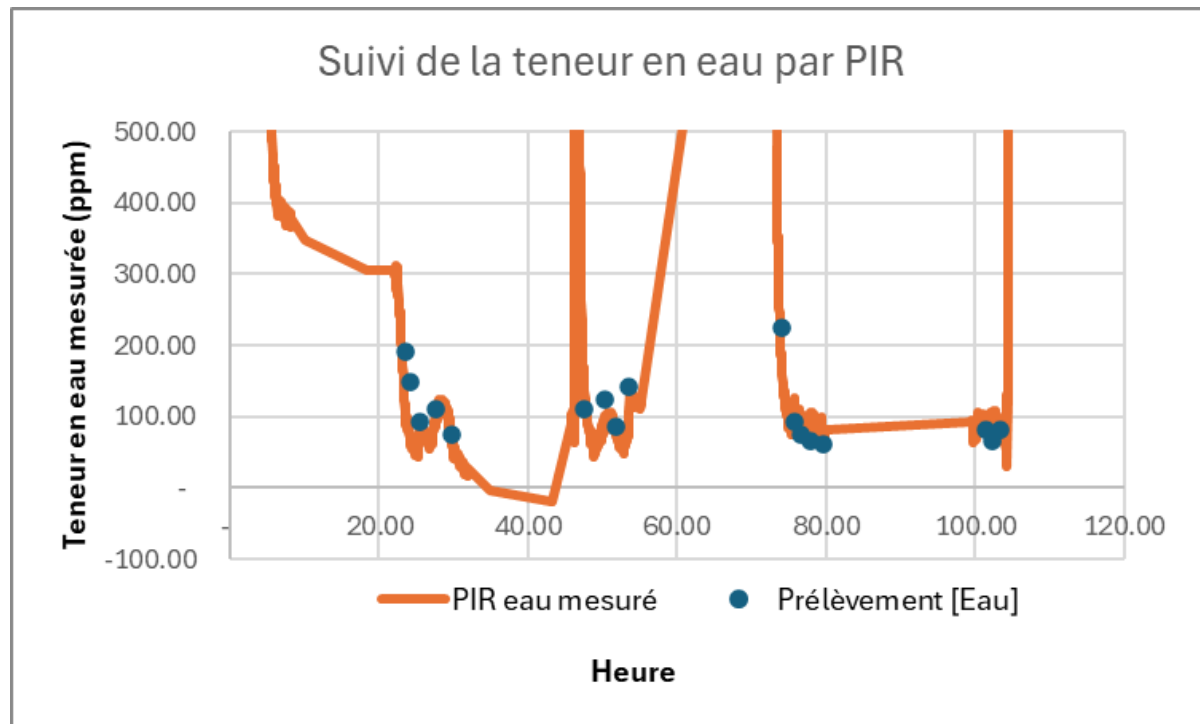
Les produits mineurs, s'ils ne sont pas mesurés in situ, peuvent être suivis par HPLC/GC en ligne, avec un système automatisé d'échantillonnage/filtration/dilution.



Application quantitative

Contexte : Suivi en continu de la teneur en eau.

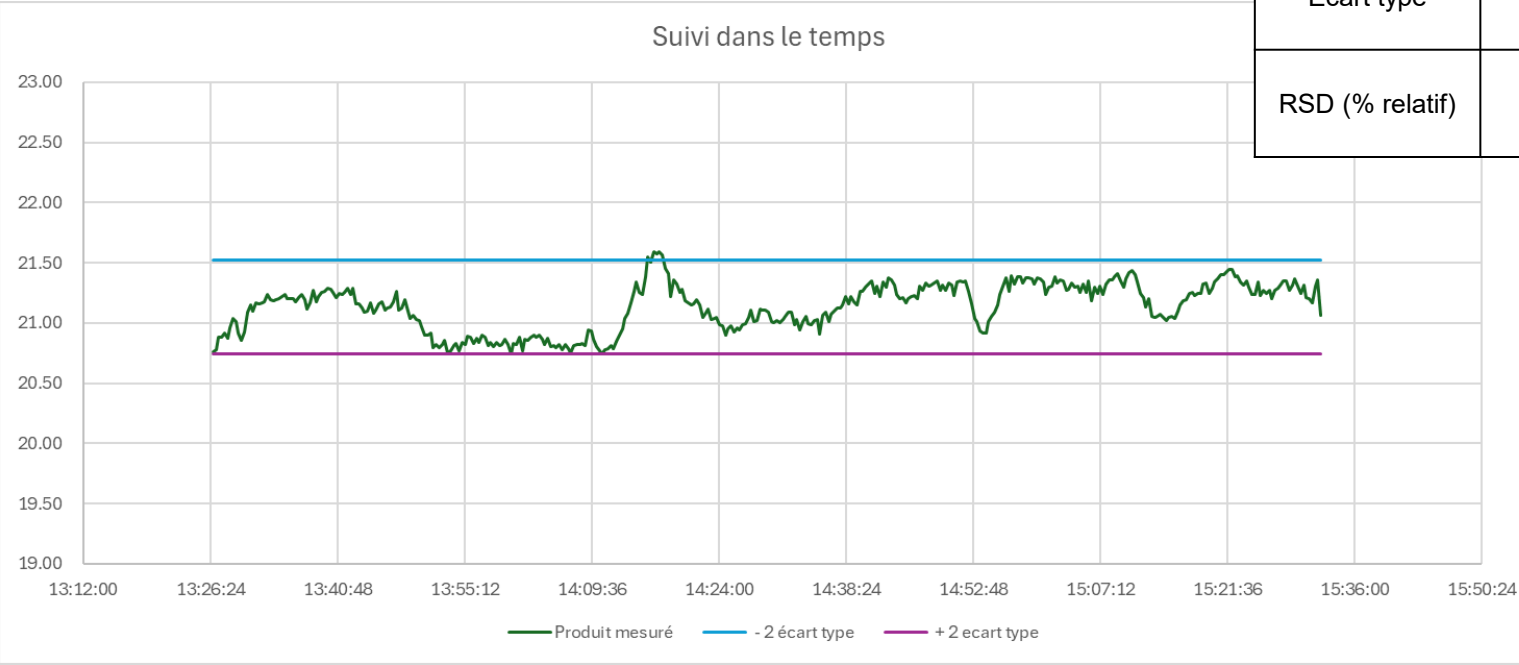
Comparaison avec les prélèvements et mesure offline.



Application quantitative

Contexte : Suivi en continu d'un produit dans le cadre d'un mélange biphasique solide liquide

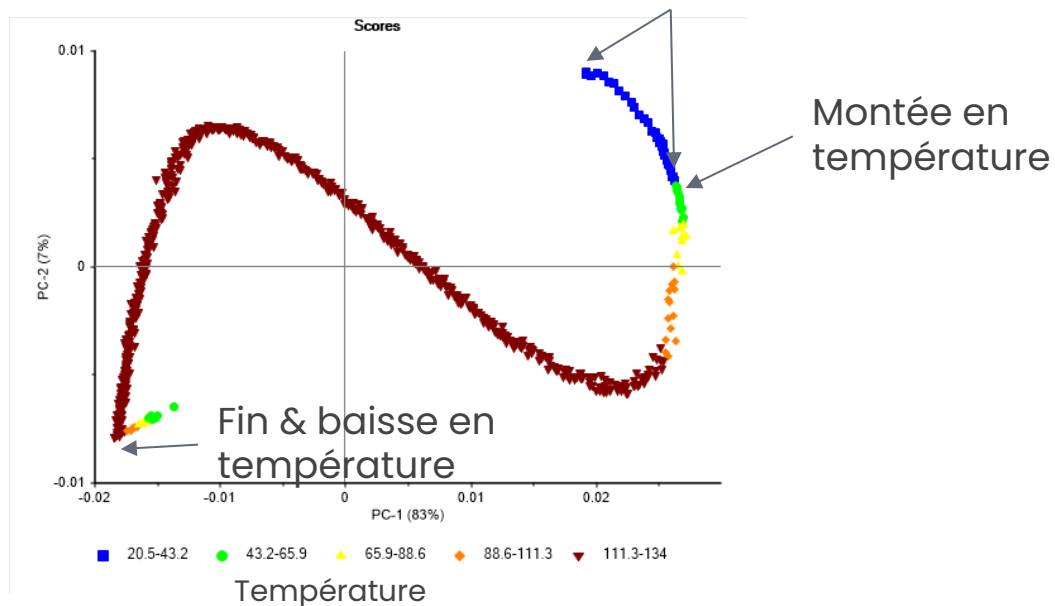
Moyenne	21.13
Ecart type	0.20
RSD (% relatif)	0.93



Applications en non supervisée

Contexte : Une synthèse longue (2jours) produit des sous produit non désiré. Il faut identifier la cause et limiter les sous produits.

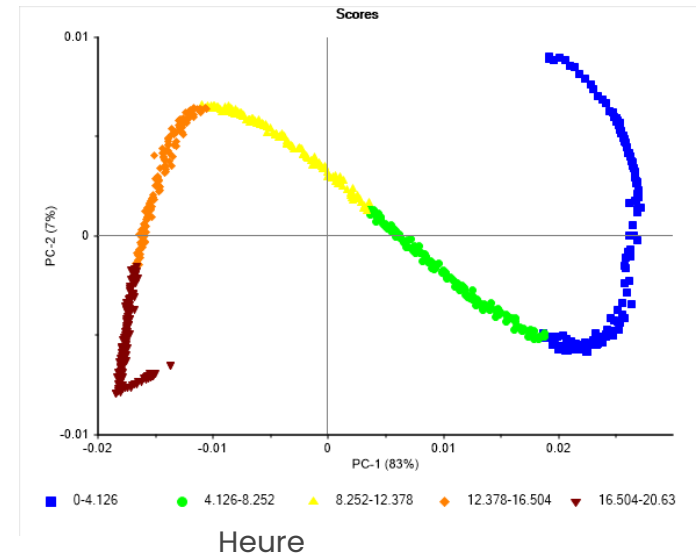
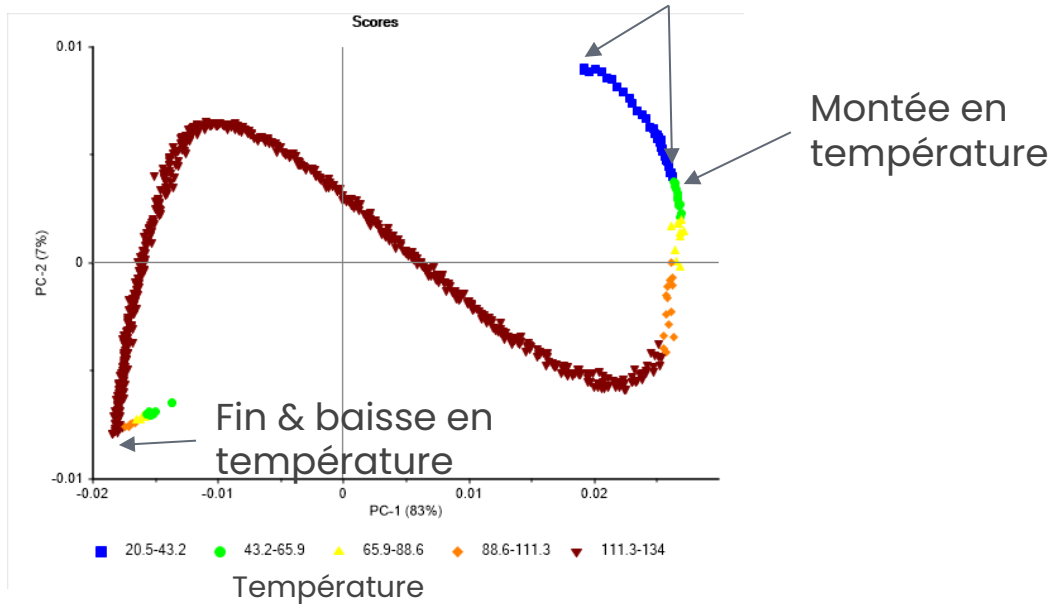
Mélange des 2 réactifs



Applications en non supervisée

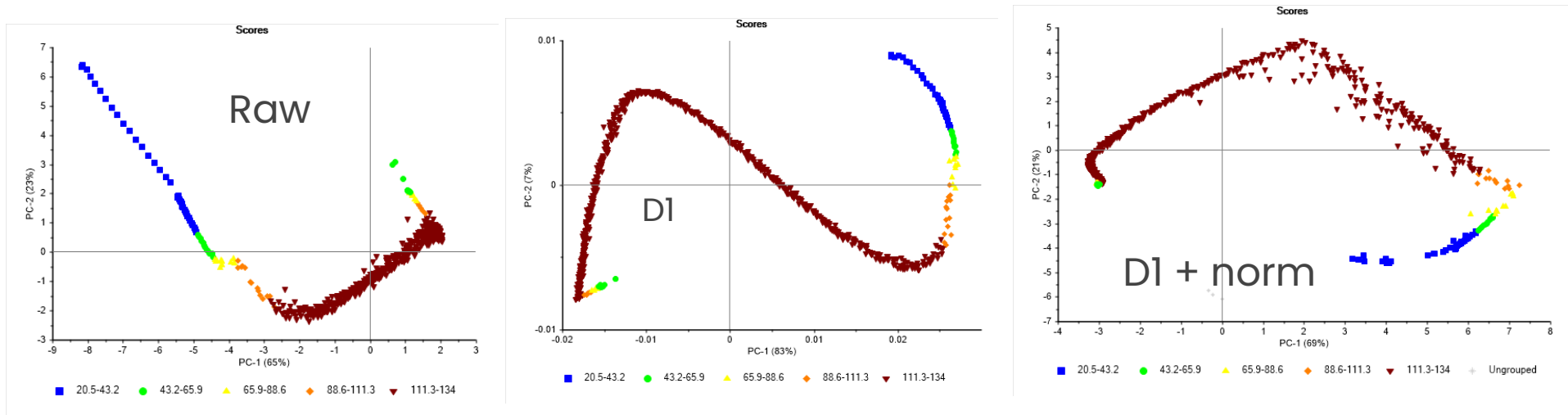
Contexte : Une synthèse longue (2jours) produit des sous produit non désiré. Il faut identifier la cause et limiter les sous produits.

Mélange des 2 réactifs



Applications en non supervisée

Attention aux choix du bon pré-traitement du spectre



→ Bien choisir son pré-traitement de spectre!

La spectroscopie en ligne pour la R&D

- Un œil direct sur le procédé et la chimie
- Informations qualitatives
- Informations quantitatives
- Aide à la prise de décision en live
- Acquisition des premières données cinétiques
- Une aide à la prise d'échantillon représentatif

Merci

