



# Discover Chemometrics and Machine Learning methods for the process supervision

## **Objectives**

This training session on multivariate data analysis is intended for people wishing to:

- Learn the methods of Chemometrics and Machine Learning, applied to Process Monitoring (process supervision)
- Be able to set up the Chemometrics tools of MSPC (Multivariate Statistical Process Control) and BSPC (Batch Statistical Process Control)
- Learn how to use the studied data analysis software

During the training, the method principles are introduced by a geometric approach. Emphasis is placed on the practical use of the method and the interpretation of the results.

Application exercises are proposed for each method. The training can be held on various Chemometrics software: Process Pulse II<sup>®</sup> (Camo Analytics) or SIMCA-Online<sup>®</sup> (Umetrics – Sartorius Data Analytics).

# Information

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Basics of data analysis (PCA, PLS) and univariate statistics are required

R&D, quality control, product development, process optimization, ...

All data from processes



Researchers, scientists and engineers

Agriculture / food, Petrochemical, Pharmaceutical, Biotechnology, Chemistry, Environment, ...

## Program

### Data analysis for MSPC applications (continuous processes)

- Objectives and different applications of MSPC (Multivariate Statistical Process Control)
  - > Process understanding
  - > Process optimization
  - > Process monitoring and fault detection
- > Theoretical principles and methodology
  - > Projection methods on latent variables
  - > Multivariate control charts
  - > <u>Application on data set and software</u>



#### Data analysis for BSPC applications (process batchs)

- > Objectives and different applications of BSPC (Batch Statistical Process Control)
- > Specificities and challenges of BSPC data
- > Theoretical principles and methodology
  - > Different methods used
  - > Advantages and disadvantages
  - > <u>Application on data set and software</u>



In-house sessions

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