

Vibrational Spectroscopy and Chemometric course

The CRA-W proposes a **Vibrational Spectroscopy and Chemometric** course and related topics. This course is available directly at the **CRA-W commodities**.



PRICE

2300€ per participant (Students benefit of a 50% discount)

The registration fee includes attendance at the 5 days training, the training book with all courses, coffee breaks and lunches (if located at the CRA-W).

REGISTRATION

<https://tinyurl.com/chemometrics2023>

COURSE MATERIAL

The course material will be made available in form of a USB key containing all the slides and datasets used as examples during the training.

Please visit the website



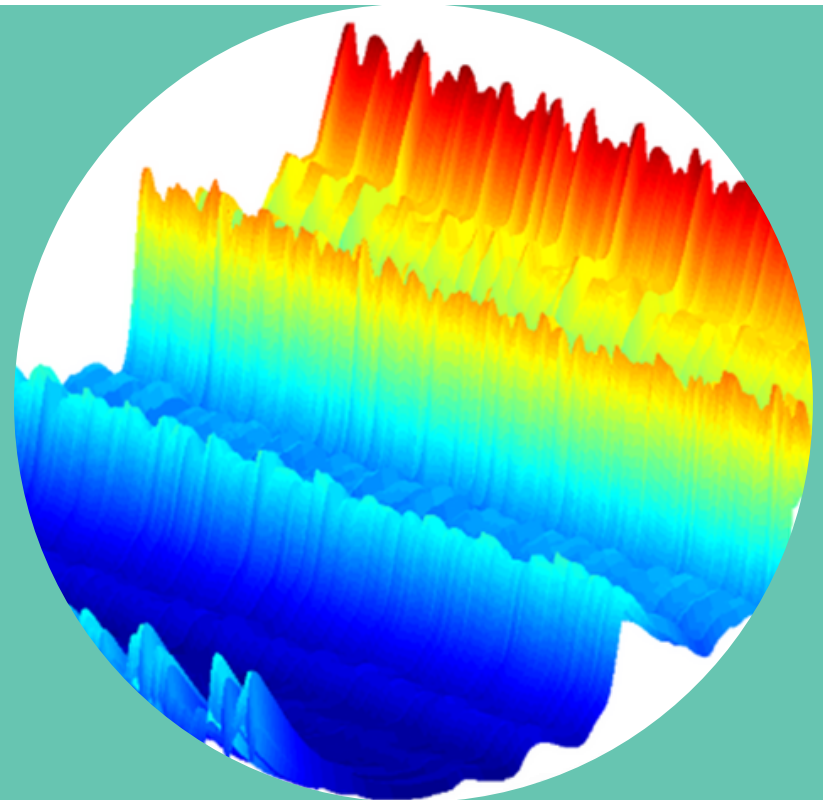
For more information



CRA-W
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CRA-W

Established in 1872, the Walloon Agricultural Research Centre (CRA-W) is a leading scientific institution, under the Walloon Ministry of Agriculture. CRA-W employs some 430 people including 120 scientists. The Knowledge and valorisation of agricultural products Department of the CRA-W has internationally renowned expertise in spectroscopy and chemometric analysis applied to the qualitative management of agro-food products, among others. The Quality and authentication of products Unit has recognized experience in chemometrics with the development of rapid, multi-analytes and untargeted methods based on vibrational spectroscopy and optical microscopy, and possesses a large number of optical instruments.

Target audience

The training is both theoretical and practical and dedicated to participants with none or little knowledge in vibrational spectroscopy and chemometrics. During and between the training you will have the possibility to discuss with experts on all techniques and methods covered during the training.

Prerequisites

Knowledge of basic concepts of mathematics (in particular linear algebra) and statistics is required. Some notions of analytical chemistry and multivariate statistics are a plus.



Outline

The goal of the course is to teach participants about Near Infrared (NIR), Mid-Infrared (MIR) and Raman technologies and how to perform basic multivariate analysis/ Chemometrics.

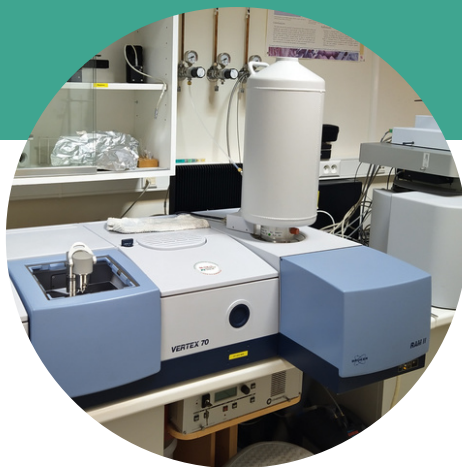
Participants will become familiar with the vibrational spectroscopic technology and statistical concepts used in Chemometric applications.

Most attention will be given to the ideas underlying the different techniques and methods and their application mainly in the agronomical sector. Theoretical considerations and equations will be limited to what is needed to have sufficient insight to properly use the techniques. Most of the examples will be related to application in the food and feed sectors, but the scope is broader.

NIR, MIR and Raman techniques include the use of classical benchtop instrumentation as well as more advanced systems, as systems combined with microscopy and Hyperspectral Imaging, or the most recent handheld devices.

Chemometrics methods include exploratory tools such as Principal Component Analysis (PCA), calibration based methods as Partial Least Squares (PLS) and discriminant techniques such as Support Vector Machines (SVM) among others as well as the figures of merit within the quantitative/qualitative calibration model, topics related to advanced pre-processing, calibration transfer and how to validate/judge model quality.

CRA-W expertise covers all kind of vibrational spectroscopic methods, namely NIR, MIR, Raman, NIR microscopy, hyperspectral Imaging and fluorescence; as well as the more advanced Chemometric methods.



Speakers

- ▶ Vincent BAETEN, Head of the Quality and authentication of agricultural products Unit; expertise: vibrational spectroscopy
- ▶ Juan Antonio FERNANDEZ PIERNA, Responsible of the DRIM laboratory; expertise: Chemometrics
- ▶ Audrey PISSARD, Responsible of the NIR laboratory; expertise: vibrational spectroscopy
- ▶ Philippe VERMEULEN, Responsible of the FIELDPRO laboratory; expertise: Imaging
- ▶ Corentin DEMOITIE, FIELDPRO laboratory; expertise: Imaging
- ▶ Antoine DERYCK, DRIM laboratory; expertise: data treatment
- ▶ Louis PATERNOSTRE, NIR laboratory; expertise: vibrational spectroscopy
- ▶ François STEVENS, DRIM laboratory; expertise: data treatment
- ▶ Damien VINCKE, FIELDPRO laboratory; expertise: Imaging

Invited Speakers



Beatriz CARRASCO
(Mining4Quality)



Tom FEARN
(University College
London)



Wouter SAEYS
(KU Leuven)

