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

Vibrational Spectroscopy and Chemometric course

This course is available at the CRA-W commodities (Gembloux, Belgium).

In the event that it is not possible to organize the training in person due to the restrictions imposed by the COVID situation, there will be a three-day online training (17-19 October) related to the theoretical part of the program. The practical part will be carried out once the pandemic situation allows it.

PRICE

2000€ 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/chemometrics2022

Please visit the website

For more information

CRA-W
Knowledge and valorization of agricultural products Department

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**17-21 OCTOBER 2022
GEMBLOUX BELGIUM**

150 ANS
Wallonie recherche CRA-W
1872-2022
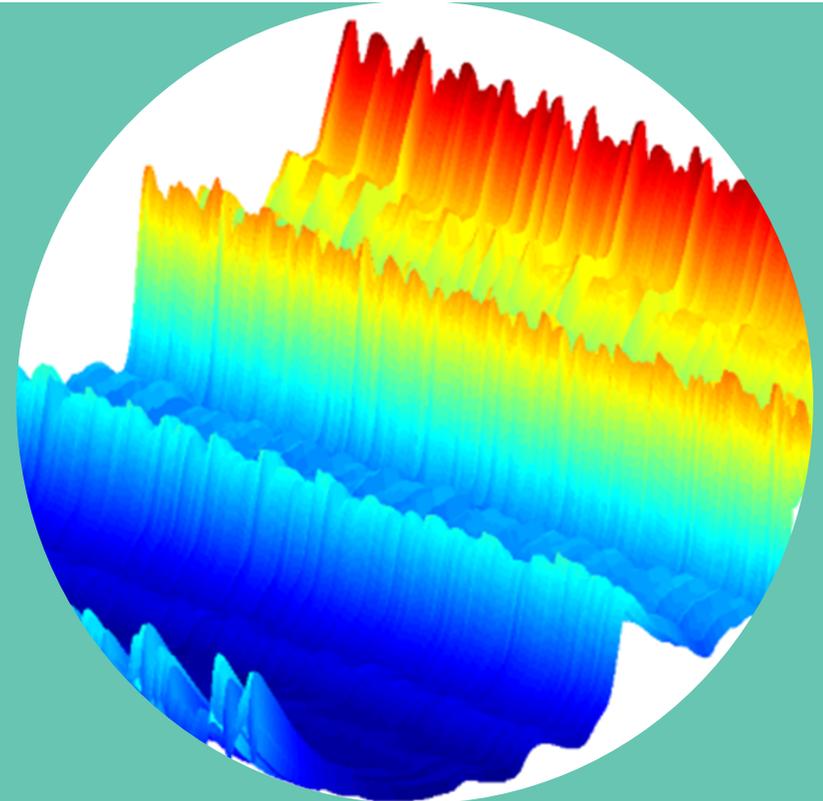
CRA-W

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 possess more than 30 instruments.

Target audience

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

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 spectroscopy and chemometrics applied 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 as Principal Component Analysis (PCA), calibration based methods as Partial Least Squares (PLS) and discriminant techniques 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.
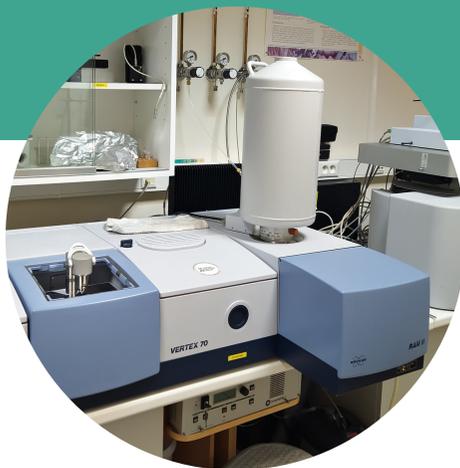
Speakers

Vincent BAETEN

Damien VINCKE

François STEVENS

Audrey PISSARD

Juan Antonio FERNANDEZ PIERNA

Philippe VERMEULEN

Invited speakers

Tom FEARN (University College London)

Wouter SAEYS (KU Leuven)

Pierre DARDENNE

Course materials

The course material will be made available in form of a USB key with all the material used in the training (slides from lectures, datasets used as examples, etc.

150 ANS

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