

## Registration fees

	Until June 15 <sup>th</sup> , 2018	After June 15 <sup>th</sup> , 2018
Student	480 €	600 €
Academic	900 €	1.080 €
Industrial	900 €	1.080 €

All tax included (20% VAT)

In order to ensure and encourage Interactions, the number of attendees is limited to 30.

### Registration fees includes

Admission, participation to courses  
& Coffee breaks, lunches, reception  
& conferences dinner

**To register or if you have any  
other questions about the training,  
please contact us**

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[eric.berthier@thermofisher.com](mailto:eric.berthier@thermofisher.com)

*Attendees are required to make  
their own accommodation and travel  
arrangements. A list of hotels and an  
access map are available on request*

## General information

### Venue

The workshop will take place in  
Caen, France in the  
IUT, UCBN, CRISMAT ENSICAEN  
facilities

### Access

Caen is located in Normandy at  
250 km west of Paris. More details  
are available in the registration form.

### Organizers



**ThermoFisher**  
SCIENTIFIC

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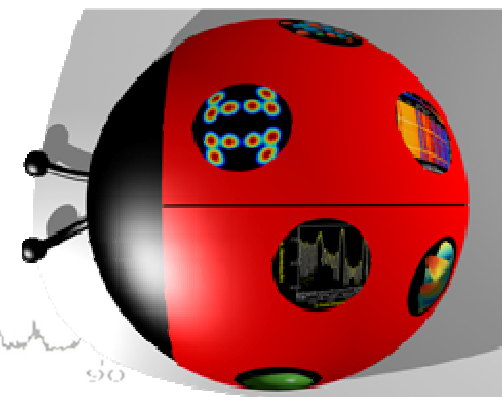
**INEL BRAND**

# WORKSHOP

**Combined Analysis  
Using X-ray and  
Neutron Scattering**

**July 2<sup>nd</sup> – 6<sup>th</sup>, 2018  
Caen (France)**

5 days training on the aspect of  
Combined Analysis by X-ray and  
Neutron Scattering and introduction  
to MAUD software



## Objectives

This international school will cover many aspects of the "Combined Analysis" by X-Ray, neutron and electron scattering and X-ray fluorescence applied to material science, ranging from fundamental requirements to technically relevant industrial and academic applications.

The combined analysis method has been developed over the years starting from the Rietveld method, extending it to most of the powder diffraction analyses and more recently incorporating, on the same idea, other techniques such as reflectivity, X-ray fluorescence and electron diffraction.

The aim is to give students as well as academic and non-academic researchers the necessary information and tools to be able to characterize their own materials and samples using the combined analysis method and the software MAUD. The characterization involves obtaining information on the structure, microstructure, phase and elemental content, texture, stress in different kinds of samples and structures including: thin films, bulk materials, anisotropic materials, poly-phased materials, nano-materials, etc.

The objective is to bring together participants from various fields and to provide an opportunity to discuss individual interests and experience.

## Topics

Each type of analysis will be considered individually for the proper technique and then integrated into a combined analysis program. Some specific examples will be studied using X-Ray, electron and neutron experimental data.

- Diffraction technique, an overview
- Crystallography Texture Analysis
  - Residual Stress Analysis
    - Rietveld analysis
    - Reflectivity analysis
    - Phase analysis
  - Line broadening analysis
  - The combined solution
- XRD & XRF combined analysis
  - Electron microscopy
  - The MAUD software

## Registrations

You are interested in this workshop  
Please email TFS INEL with subject  
« MAUD workshop » at  
[eric.berthier@thermofisher.com](mailto:eric.berthier@thermofisher.com)

## Registration deadline

June, 29<sup>th</sup>, 2018

## Pre-requisites

### Necessary pre-requisites

- Basic knowledge of crystallography and diffraction techniques
- Good practice in the use of computers
- If possible, bring your laptop for the practical sessions

### MAUD

Materials Analysis Using Diffraction  
<http://maud.radiographema.eu/>

## Speakers

Daniel Chateigner, Caen (France)  
Luca Lutterotti, Trento (Italia)  
Henry Pillière, Artenay (France)  
Giancarlo Pepponi, Trento (Italia)

