



## Micro- and Nano-Scale Chemical Analysis using Raman Spectroscopy [SP-15] NEU

### Goal

This Raman course will provide fundamental knowledge about the linear, non-linear, and near-field Raman spectroscopy methods. Specifically, the following techniques will be covered: confocal Raman spectroscopy, resonance Raman spectroscopy, stimulated Raman spectroscopy, and tip-enhanced Raman spectroscopy. The focus of this course will be on the fundamental principles of these major Raman spectroscopy techniques and their applications in non-destructive and label-free chemical analysis at the micro- and nano-scales.

### Target Group

Laboratory technicians, chemists, laboratory and group leaders, PhD students in chemical, biological and material sciences

No special prior knowledge of Raman spectroscopy is necessary.

### Contents

The following topics will be covered:

– Principle of Raman spectroscopy

- Raman spectroscopy techniques: Principles and instrumentation

Linear Raman: Spontaneous Raman spectroscopy and Resonance Raman spectroscopy

Non-linear Raman: Stimulated Raman spectroscopy

Near-field Raman: Tip-enhanced Raman spectroscopy

- Practical applications and examples from academic research and industry

- Laboratory demonstration of micro- and nano-scale Raman measurements

- Analysis and interpretation of hyperspectral Raman data

### Implementation / method of working

Morning session: Interactive classroom lectures covering principles, instrumentation, and applications of Raman spectroscopy techniques. Lecture notes will be provided.

Afternoon session: Laboratory demonstration of micro and nano-scale Raman measurements, Raman data analysis exercises

## Event Properties

**Event Date**

Friday, 25 October 2024 - Friday, 25 October 2024

**Registration Start Date**

Monday, 30 November -0001

**Cut off date** Monday, 30 November -0001  
**Individual Price** Mitglied CHF 600.00, Nichtmitglied CHF 750.00,  
Studierende/Doktorierende/AHV CHF 320.00  
**Course language** English  
**Location** [ETH Zürich, Zürich](#)