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, 31 May 2024 - Friday, 31 May 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