

ADVANCED MICROSCOPIC AND SPECTROSCOPIC TECHNIQUES 2025

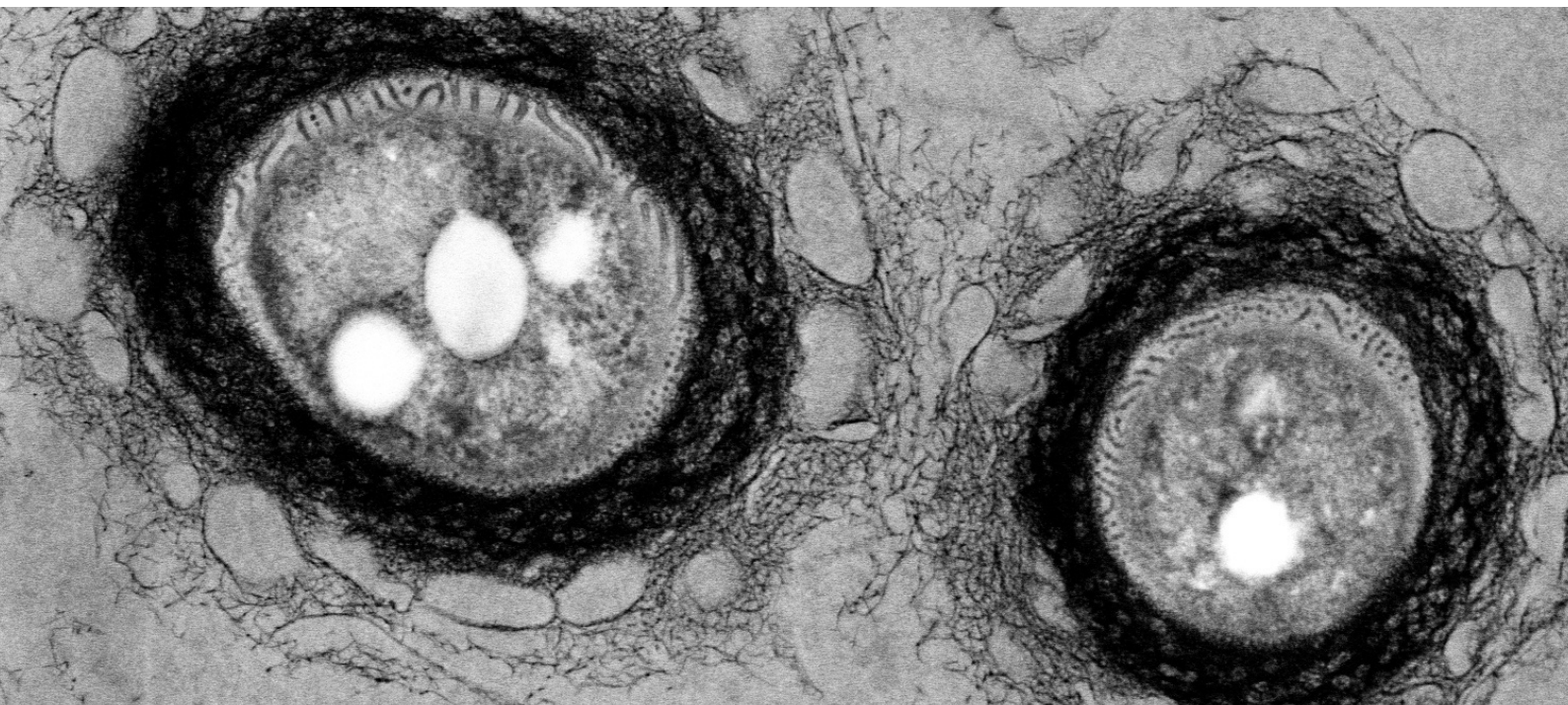


2-4 DECEMBER
START FROM 9:00



INSTITUTE OF SCIENTIFIC INSTRUMENTS OF THE CAS
KRÁLOVOPOLSKÁ 147, BRNO, CZECH REPUBLIC

Learn principles of Electron microscopy and Raman spectroscopy in three days and try operating microscopes and preparing biological specimens. The course is aimed at university students and young scientists in the life sciences and soft materials who are planning to use advanced imaging and analytical methods in their research.



REGISTRATION

2.12. 9:00 - 16:00 **FREE lectures**

Hands-on in labs 1000 CZK

3.12. 9:00 - 16:00

4.12. 9:00 - 16:00

GUEST EXPERTS

- JANA NEBESÁŘOVÁ
- MARIE VANCOVÁ
- MARTIN BAČÍK

Attend the entire course and receive:

Certificate of attendance at the course



OUR PARTNERS



ADVANCED MICROSCOPIC AND SPECTROSCOPIC TECHNIQUES

2-4 DECEMBER, INSTITUTE OF SCIENTIFIC INSTRUMENTS OF THE CAS, KRÁLOVOPOLSKÁ 147, BRNO, CZ

REGISTRATION REQUIRED

HANDS-ON 1000 CZK (ACADEMIC, STUDENT), DEADLINE IS 20. 11. 2025

Kamila Hrubanová, hrubanova@isibrno.cz

Kateřina Mrázová, mrazova@isibrno.cz

Participation in the lectures on 2 December is free of charge. Hands-on training in the labs is available for 12 people.

2.12.2025 *Lecture hall*

8:30–9:00 **Registration**

9:00–9:05 **Kamila Hrubanová (ISI CAS): "Welcome"**

9:05–9:40 **Vladislav Krzyžánek (ISI CAS): "Introduction to the electron microscopy"**

9:40–10:40 **Jana Nebesářová (CUNI Prague, BC CAS): "Hydrated sample preparation for SEM and TEM"**

10:40–11:00 **FREE COMPANY SLOT**

11:00–12:00 *lunch break*

12:00–12:30 **Ota Samek (ISI CAS): "Raman spectroscopy in life science"**

12:30–12:45 **Ondřej Vaculík (ISI CAS): "Hyperspectral image analysis for life sciences"**

12:45–13:30 **Jiří Týč (BC CAS): "EM methods for volumetric analysis"**

13:30–13:45 **Tomáš Lázníčka (ISI CAS): "Microfluidics in correlative microscopy"**

13:45–14:15 *coffee break*

14:15–14:35 **Martin Bačík (Specion): "Leica microsystems solution for sample preparation"**

14:35–15:20 **Marie Vancová (BC CAS): "Correlative approaches in EM"**

15:20–15:50 **Kateřina Mrázová (ISI CAS): "Strategies for preparation and imaging of hydrogel-based samples using electron microscopy"**

15:50–16:00 *networking & refreshments*

3.12.2025 ***Hands-on experience I. (lunch & coffee included)***

9:00–10:00 **František Kitzberger (CUNI Prague, BC CAS): "Volume Electron Microscopy – image processing, segmentation and analysis"**

10:00–16:00 **STEM/TEM grids preparation, STEM analysis (Kamila Hrubanová, Vladislav Krzyžánek)**
Ultrathin Sectioning – Leica Microsystems (Kateřina Mrázová, Anna Havlíčková)
Data analysis & Image processing (František Kitzberger, Pavlína Sikorová)
SEM/EDX analysis (Filip Mika, Zuzana Pokorná, Tereza Motlová)

Q&A: Ask the experts & ISI CAS laboratories excursion

4.12.2025 ***Hands-on experience II. (lunch & coffee included)***

9:00–16:00 **cryo-SEM workflow (Anna Havlíčková, Kamila Hrubanová)**

Data analysis & Image processing II. (Martin Kizovský, Pavlína Sikorová)

Raman spectroscopy and Multispectral analysis (Martin Kizovský, Ondřej Vaculík)