

# ADVANCED METHODS OF SCANNING ELECTRON MICROSCOPY AND RAMAN SPECTROSCOPY

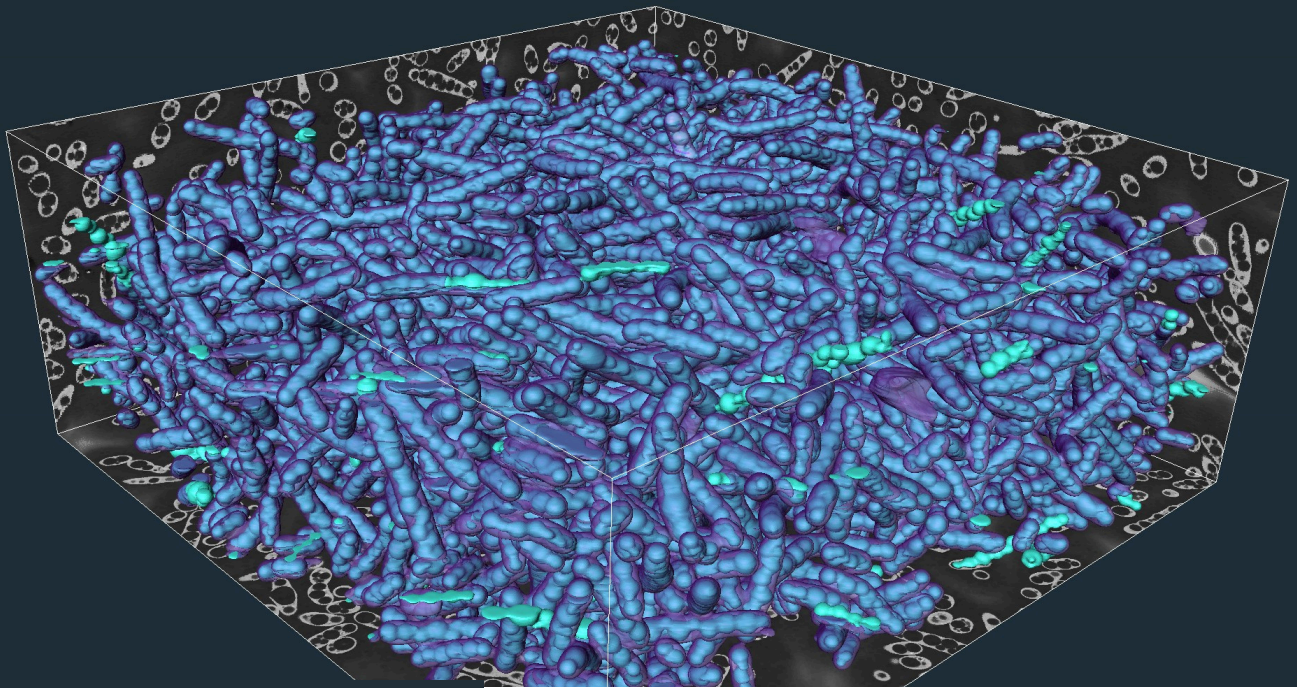


**2-4 DECEMBER**  
**START FROM 9:00**



**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 - 17:00 **FREE lectures**

**Hands-on in labs 1000 CZK**

3.12. 9:00 - 17:00

4.12. 9:00 - 16:00



Attend the entire course and receive:

- **Certificate**
- **Voucher** for the vernisage on 4.12. 17:00 (Mahenova Knihovna, Koblížná 4, Brno) exhibition „**mikrovět obrazEM**“



Czech Academy of Sciences

**STRATEGYAV21**  
Top research in the public interest

## GUEST EXPERTS

- JANA NEBESÁŘOVÁ
- MARIE VANČOVÁ
- MARTIN BAČÍK

## OUR PARTNERS



# ADVANCED METHODS OF SCANNING ELECTRON MICROSCOPY AND RAMAN SPECTROSCOPY

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. 2023

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 16 people.

2.12.2024

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

coffee break

11:00–11:45

Jiří Týč (BC CAS): "EM methods for volumetric analysis"

11:45–12:15

Martin Bačík (Specion): "Leica microsystems solution for sample preparation"

12:15–12:45

TBA (TESCAN): "TBA"

12:45–13:45

lunch break

13:45–14:15

Ota Samek (ISI CAS): "Raman spectroscopy in Life science"

14:15–14:45

Kateřina Mrázová (ISI CAS): "Staining strategies of biological samples prepared for volume microscopy"

14:45–15:45

Marie Vancová (BC CAS): "CLEM, immunolabeling and applications in biology"

15:45–17:00

networking & refreshments

3.12.2024

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"

10:00–10:30

Martin Kizovský (ISI EM): "Raman micro-spectroscopy in practice"

10:30–16:00

SEM and EDX analysis (Filip Mika, Zuzana Pokorná)

SEM / FIB-SEM DualBeam (Tereza Motlová, Kamila Hrubanová)

Amira 3D & Image processing (Pavčina Sikorová, František Kitzberger)

Raman spectroscopy (Martin Kizovský, Soňa Cabalová)

16:00–17:00

networking & refreshments

4.12.2024

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

9:00–16:00

cryo-SEM (HPF sample preparation, cryo-SEM imaging) (Anna Havlíčková, Kamila Hrubanová, Vladislav Krzyžánek)

Ultrathin Sectioning - Leica Microsystems (Kateřina Mrázová)

STEM in SEM imaging of ultrathin sections (stained and unstained samples) (Tereza Motlová, Filip Mika)