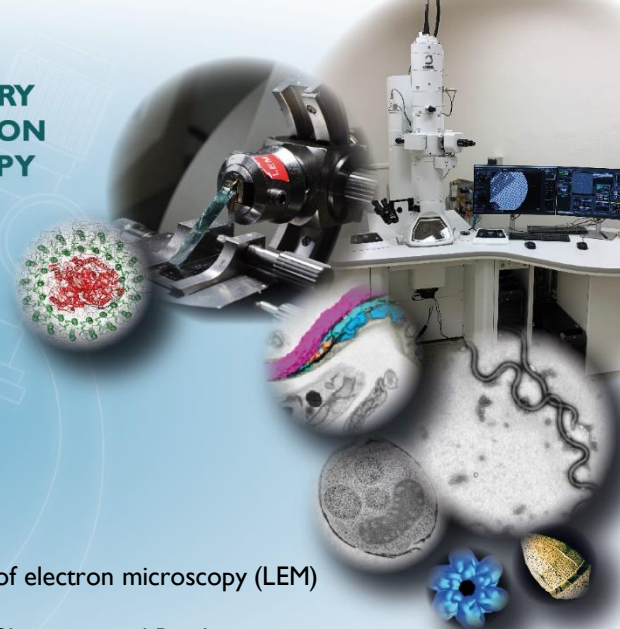




**LABORATORY  
OF ELECTRON  
MICROSCOPY**  
České Budějovice



Biology Centre CAS – Institute of Parasitology – Laboratory of electron microscopy (LEM)  
and  
University of South Bohemia – Faculty of Science – Inst. of Chemistry and Biochemistry,  
České Budějovice, Czech Republic

# Advanced TEM imaging: from cells to proteins

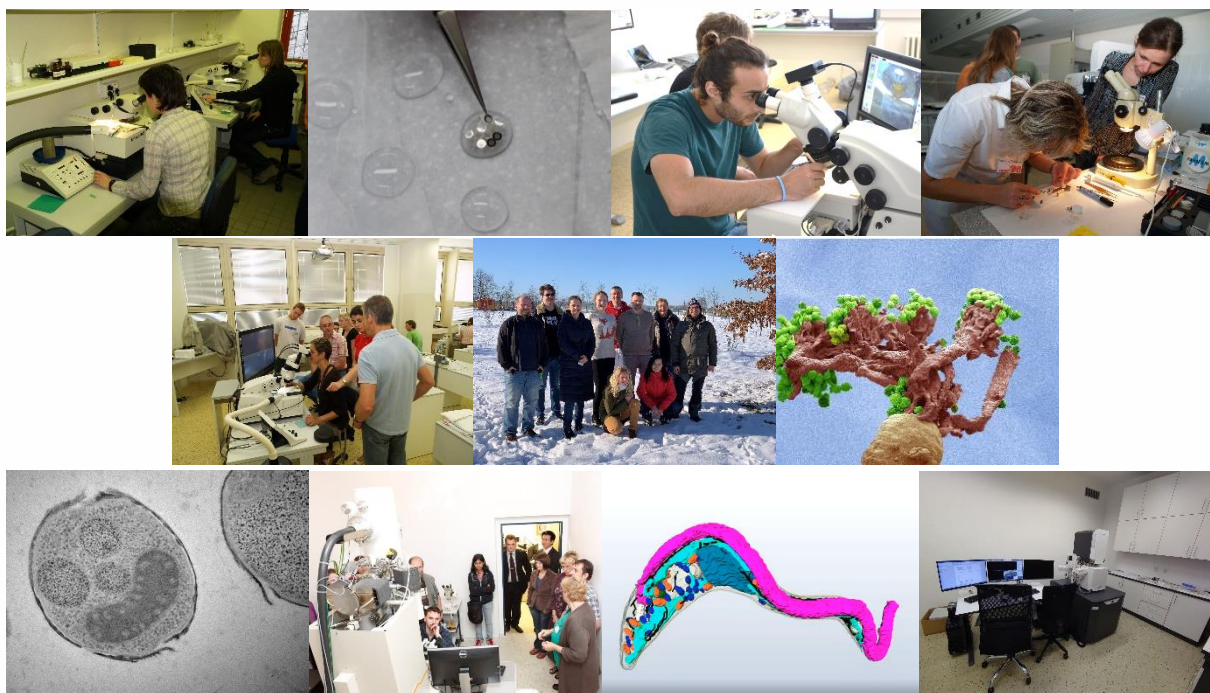
13.–14. 6. 2022 České Budějovice

Information

Programme

Registration and contact

Venue and accommodation



## Description

This two-day workshop is intended for students/postdocs/staff who want to learn about TEM principles, advanced TEM operation including electron tomography (ET), advanced control software capabilities of CMOS camera XAROSA, image processing, cryo-single particle analysis (SPA), including whole workflow (sample preparation, screening, data acquisition and processing) and negative staining method. The course is limited to about 15 participants per each day.

This course is supported by the program for large research infrastructures of the Ministry of Education, Youth and Sports within the project National Infrastructure for Biological and Medical Imaging (**Czech-Biolmaging** –LM2018129).

## Organisers and speakers:



**[Marie Vancová](#)** (LEM, Biology Centre CAS, České Budějovice)

Since 2021, the head of the LEM. The LEM provides state-of-art support for users to address different biological questions and access EM technology, including cryo-techniques. Her scientific interests focus on EM investigation of the structure of tissues and cells using various methods/techniques, including cryo techniques, 3D reconstructions, and immunolocalization of molecules. She participated as a speaker and/or instructor in EMBO Practical Courses (Electron Microscopy and Stereology in Cell and Molecular Biology), workshops, lectures and practical exercises at USB.



**[Tomáš Bílý](#)** (Macrocomplex group, University of South Bohemia & Biology Centre of the CAS, České Budějovice)

His research interests are electron tomography, image processing, 3D visualisation of cells, purified organelles, and viruses.



**[Martin Bartels](#)** - EMSIS Application specialist Electron Microscopy and Radius camera control software developer.



**Zdenko Gardian** (Macrocomplex group, University of South Bohemia & Biology Centre of the CAS, České Budějovice)

His research interests are single-particle and image analysis, structural studies of photosynthetic reaction centres and light-harvesting complexes.



**Eva Ďurinová** (Ph.D. student, University of South Bohemia & Biology Centre of the CAS, České Budějovice)

Her research interests are studies of proteins and viral particles by electron microscopy, fluorescence microscopy (FRET, FRAP), live cell imaging.



**Alastair T. Gardiner** (Centre Algatech, Institute of Microbiology, CAS, Třeboň)

He is a research biochemist with an interest in the structural biology of membrane proteins. His particular interest focuses on understanding the structure and function of the proteins responsible for light reactions of microbial photosynthesis.

**Instructors:** Mgr. František Kitzberger, Mgr. Martina Tesařová, Petra Masařová, Jiří Vaněček

# Programme

## Monday 13.6.

09:20	Welcome and workshop overview	M. Vancová
09:30	Basics of TEM–Theory: basic principles, TEM construction, resolution, alignment, imaging & ET	T. Bílý
11:30	Lunch	
12:30	JEOL 1400 flash equipped with XAROSA CMOS camera (EMSIS) – Practical session	T. Bílý M. Bartels
14:45	RADIUS EM imaging software (EMSIS) – Practical lecture	M. Bartels
15:45	Snack break	
16:00	Electron tomography & automated imaging – Practical demonstration on JEOL 1400 controlled with SerialEM	T. Bílý

## Tuesday 14.6.

09:00	Introduction to Cryo-EM single particle analysis	Z. Gardian, E. Ďurinová
10:00	How to prepare samples for SPA	A. T. Gardiner
11:30	Practical session – Negative stain	E. Ďurinová
12:00	Lunch	
12:45	Practical session – Cryo sample fixation and Cryo-EM visualization of proteins	Z. Gardian
14:45	Snack Break	
15:00	Practical session – Single-particle image analysis	Z. Gardian

# Registration

## Registration Fees

Registration for one-day: 500 CZK  
Registration for both days: 1000 CZK

**For registration, fill the form:**

<https://forms.gle/aQZytdgNVsVizdT69>

(if the hyperlink is not working, copy/paste the link into a browser)

**You will receive the payment details after the registration**

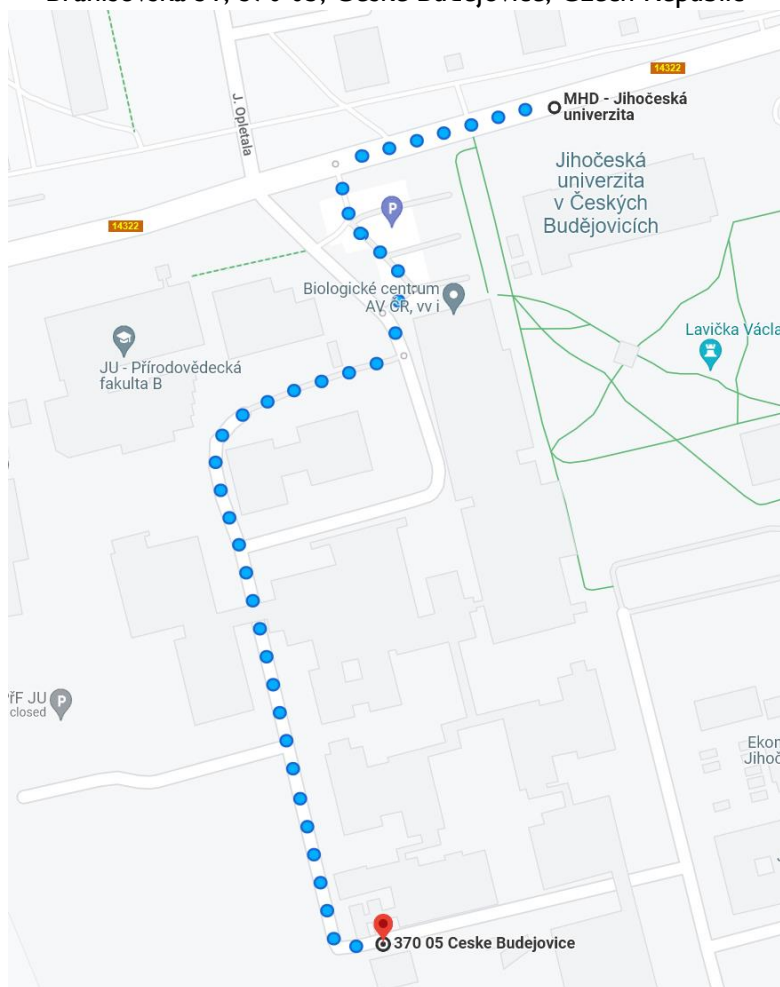
**Contact: [Marie Vancová \(vancova@paru.cas.cz\)](mailto:vancova@paru.cas.cz)**

# Venue and Accommodation

## Venue

Laboratory of Electron Microscopy, Biology Centre ASCR - Institute of Parasitology

Branisovska 31, 370 05, Ceske Budejovice, Czech Republic



(Click on the map to open in the browser)

GPS

Loc.: 48.97609487481923, 14.447112729646566

## **How to get to the venue**

By public transport:

From the train station of the bus station, go the bus stop located under the Mercury shopping centre and take bus No. 3 in direction Máj – Antonína Barcala and get off at the bus stop Jihočeská Univerzita. Then cross the street to the university campus and from go to the building of the laboratory.

By car:

In case you plan to get here by the car, go to the address: Branisovska 31, 370 05, České Budejovice. You can park your car on the parking lot at the Biology Centre (ring at the gate and tell that you participate on this course if asked). Other parking possibility is at the recommended accommodation site.

### **Accommodation**

Accommodation has to be booked separately and on your own. In case of any problems, please contact:

**[Martina Tesařová \(holland@paru.cas.cz\)](mailto:holland@paru.cas.cz)**