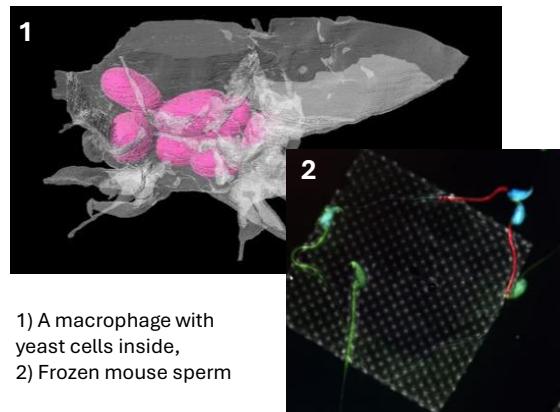


## 3D-CLEM course

[report] The main event of November was the organization of the 3D-CLEM: Imaging Function and Ultrastructure course. This intensive course covered the theory in one day full of lectures and then continued with demo and hands-on session in sample prep., imaging, and data analysis. During the demo sessions, we went through two 3D-CLEM workflows: **1)** spinning disc confocal microscopy/chemical fixation/RT SEM, FIB-SEM, and serial ET on macrophage cells phagocytosis of yeast and **2)** plunge freezing/cryo confocal microscopy/cryo TEM tomography of mouse sperm. The next 3D-CLEM course will take place in 2027.



1) A macrophage with yeast cells inside,  
2) Frozen mouse sperm

## PAPI course

[report] The course Python for Analysis and Processing of Images took place at IMCF in October under the lead of our data analysis expert Zuzana Čočková. The course was divided into two two-day sessions of different difficulty. The participants learnt how to use and implement Python in data analysis and processing, and should now be skilled enough to continue on their own. Prior knowledge of digital imaging was not necessary. If you think this course could be for you, we have bad news. The 2026 date is fully booked. But we recommend checking our website and social media for 2027 dates!



## Reconstruction works almost finished

[update] The optical part of the IMCF facility has gone through some changes. Three rooms are gone, and we have a new, bigger room adjusted to the needs of our super-resolution microscopes. The Abberior Instruments STED, STED-INFINITY, and Nikon N-STORM microscopes will be moved to the room when the works are finished. We expect full operation by the end of February.

## Halloween at IMCF



[lab life] No tricks, just great microscopes and experts in the field! (Sometimes we look weird, but don't worry, the level of our services does not change even during Halloween.) We also thank IBT for organizing a great thematic party at BIOCEV!



**Did you know?**  
We are part of the Czech-BioImaging and Euro-BioImaging infrastructures. Check their web pages for updates on funding and events!



### Follow us online:

- @IMCF\_BIOCEV
- @IMCF Imaging Methods Core Facility at Biocev



### Join the PICTURE OF THE MONTH competition now!

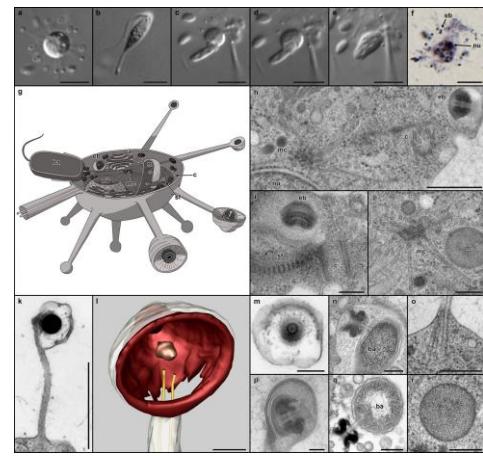
It is open for the users of Prague Eu-Bi node facilities and **valuable prizes** are waiting for the authors of the most popular images! More info at our website <https://imcf.natur.cuni.cz/>



# IMCF in publications: *Nature!*

A research team from the Faculty of Science, Charles University in Prague has discovered *Solarion arienae*, an extremely rare and morphologically unique unicellular eukaryote that sheds new light on early eukaryotic evolution. The study, published in *Nature*, reveals that *Solarion* represents a newly defined phylum and, together with a few enigmatic protist lineages, forms an entirely new eukaryotic supergroup (kingdom) named Disparia. Remarkably, *Solarion* preserves ancestral mitochondrial features previously thought to have long disappeared, offering an unprecedented insight into the biology of early eukaryotic cells. (taken from <https://natur.cuni.cz/>)

IMCF participated in this study by performing electron tomography on our TEM microscope and building a 3D ultrastructural model of the *celestiosome* used by *Solarion* to capture bacterial prey.



Valt, M., Pánek, T., Mirzoyan, S., Tice, A. K., Jones, R. E., Dohnálek, V., Doležal, P., Mikšátko, J., Rotterová, J., Hrubá, P., Brown, M. W., & Čepička, I. (2025). Rare microbial relict sheds light on an ancient eukaryotic supergroup. *Nature*.

## UPCOMING EVENTS:

### → Course: Python for Analysis and Processing of Images

February 12-13 + 16-17, 2026

A popular course on a popular tool in data analysis. You can learn the basics of Python (Napari included) in two sessions, introductory and advanced, both lead by our data analysis expert.

Registration closed, check the next newsletter for the next year's date!!

**Python for Analysis and Processing of Images course**

Napari included

Learn to code for image analysis and data processing!

Introductory Session February 12-13, 2026

Advanced Session February 16-17, 2026

imef.natur.cuni.cz/PAPI

Apply before 29.1.

IMCF BIOCEV



### EM-SPS 2026

Sample Preparation Series for Electron Microscopy

Practical course at IMCF, BIOCEV

Apr 13-16, 2026

Register now: [imcf.natur.cuni.cz/IMCF/Courses](https://imcf.natur.cuni.cz/IMCF/Courses)

Deadline 13th March



### → Other courses planned for 2026:

- FRET by all means, May/June
- FLIM not only for biologists, Nov. 10-13

### → Course: EM Sample Preparation Series, April 13-16, 2026

This course is for everyone who wants to learn the methods of routine biological sample preparation for electron microscopy. One day of lectures and three days of demo and hands-on session.

Registration open until 13th March!

Check the IMCF web for more information about the upcoming courses and other events: <https://imcf.natur.cuni.cz>



Join us at conferences:

**Vision for Life** (Innovation Days in Bioscience Imaging organized by Specion), 21-23 April, IMG, Prague)

**MICROSCOPY** (Annual CSMS conference), 1-3 June, Rožnov pod Radhoštěm)

MEET US!

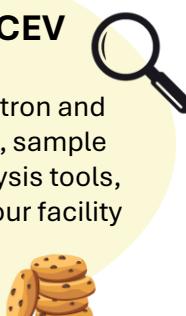
A new event:

### Imaging Day at IMCF BIOCEV 18<sup>th</sup> March 2026 at IMCF

Choose from demo sessions on electron and optical microscopes, flow cytometry, sample preparation instruments, or data analysis tools, and explore the full range of services our facility offers for your research.



Refreshments included!



We are a part of:



FACULTY OF SCIENCE  
Charles University



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