

# CSMS Conference - MICROSCOPY 2024

**20 - 22 May 2024, Nový Smokovec, Vysoké Tatry**  
*Hotel Atrium / Nový Smokovec, Vysoké Tatry*

## Conference programme

### Monday 20<sup>th</sup> May 2024

8:00	<b>Trip to the mountains</b> ( <i>expected arrival time 13:00</i> )
15:00	<b>Registration of participants</b> ( <i>until 19:00</i> )
15:30	<b>Member meeting of CSMS</b>
17:00	<b>Conference opening</b>
17:10	<b>Announcement of the winners of scholarship competition by Thermo Fisher / CSMS</b>
17:15	Jan Hajduček: Comprehensive magnetic analysis from electron diffraction patterns in Transmission Electron Microscopy
17:30	<b>Announcement of the winners of scholarship competition by CSMS</b>
17:35	Tomáš Hrbek: Electrochemical atomic force microscopy as a tool for the study of degradation of iridium-ruthenium catalyst for the anode of a proton exchange membrane water electrolyzer
17:50	<b>Announcement of the winner of the best CSMS dissertation sponsored by ZEISS</b>
17:55	Jakub Pospíšil: Development of biomimetic surfaces for studying of cellular interactions
18:10	<b>Announcement of CSMS award for merit in microscopy</b>
18:15	Miroslav Šlouf: Lecture of the laureate
19:00	<b>Welcome party</b>

### Tuesday 21<sup>st</sup> May 2024

9:00	<b>Plenary lecture</b> Jiří Materna: Where artificial intelligence is heading: applications in microscopy
9:45	<b>Session I - Material sciences</b> (chairs: Eliška Materna Mikmeková and Miroslav Šlouf)
9:45	<b>Invited talk</b> Tamás Csanádi: Strength enhancement and plasticity of high-entropy carbide grains at the micro-scale
10:15	Ivo Kuběna: Microstructural Damage Mechanisms in Additively Manufactured Ni-Based Superalloy
10:30	Mariana Klementová: Eveslogite - nanotubular silicate mineral
10:45	Lukáš Průcha: Transfer of graphene onto different substrates for specific applications
11:00	Saffana Kouka: Thermoplastic starch: Relations among processing conditions, morphology, rheology, and properties
11:15	<b>Poster session + coffee break</b>
11:45	<b>Technology news I</b> (chairs: Jana Nebesářová and Josef Lazar)
11:45	Thermo Fisher Scientific (Lukáš Kejík): Hydra PFIB platform for advanced material and life science applications
12:15	AdvaScope (Pavel Stejskal): Advancing Diffraction in SEM: Using Hybrid-Pixel Detectors for Ultrafast 4D STEM
12:30	Pragolab (Jan Vysloužil): Electron and holographic microscopes in practice
12:45	Specion (Andreas Nowak): Leica Microsystems is proud to present the next generation ultramicrotome for electron microscopy sample preparation
13:00	<b>Lunch</b>

14:00	<b>Technology news II</b> (chairs: Jana Nebesářová and Josef Lazar)
14:00	JEOL (Laurent Vassé): FIB Solutions from JEOL
14:30	TESCAN (Hana Tesařová): Empowering Innovation in Science with TESCAN Solutions
14:45	Altium International (Kateřina Lónová): Cellular Secrets Unveiled: Ever wondered what your cells are up to at night?
15:00	ZEISS (Pavel Krist): Easy and Perfect Scanning of Microscopy Slides
15:30	<b>Poster session + coffee break</b>
16:30	<b>Session II - Optics and Instrumentation</b> (chairs: Kamila Hrubanová and Dušan Chorvát)
16:30	<b>Invited talk</b> Ilya Belevich: Bridging the gap: AI-based segmentation tools for quantitative microscopy and the following analysis pathways
17:00	Radim Skoupý: Sixteen pixel electron ptychography
17:15	Pavčina Sikorová: 4D-STEM/PNBD: Powder electron diffraction in SEM microscopes
17:30	Michal Horák: Metal-insulator transition in vanadium dioxide studied by analytical transmission electron microscopy
17:45	Tereza Motlová: Production of polymer optical elements and their analysis by electron microscopy
18:00	<b>Break</b>
19:00	<b>Social evening with banquet (+ yCSMS activities)</b>

### Wednesday 22<sup>nd</sup> May 2024

9:00	<b>Workshops</b> Viktor Sykora: Electron Microscopy and Artificial Intelligence (in Czech) Ilya Belevich: Deep Learning for Image Segmentation: A Comprehensive Workflow from Raw Images to Complete Models
10:00	<b>News in microscopy community</b> (chairs: Vladislav Krzyžánek)
10:00	Martin Strnad: The Young Czechoslovak Microscopy Society: Mapping out future endeavors
10:10	Radka Martinková: Brno region microscopy
10:20	Martina Wernerová: Czech-BioImaging: Infrastructure dedicated to users
10:30	Jiri Novacek: Czech Infrastructure for Integrative Structural Biology
10:40	Petr Mikulík: New study program "Mikroskopie" at the Masaryk University
10:50	Petr Prikryl: Building the Czech optical ecosystem
11:00	<b>Poster session + coffee break</b>
11:30	<b>Session III - Biomedical sciences</b> (chairs: Veronika Huntošová and Jiří Týč)
11:30	<b>Invited talk</b> Martin Kundrát: Microscopy and X-ray Imaging in Paleontology: Slovak Integrative Paleobiology Lab
12:00	Josef Lazar: Novel genetically encoded biosensors for imaging molecular processes of cell signaling
12:15	Aleš Benda: Enhancing FLIM Data Analysis Through Deep Learning
12:30	Dominik Pinkas: The utility of EDS in biological transmission electron microscopy
12:45	Veronika Huntošová: Multimodal metal-organic framework nanoparticles for bioimaging and targeted treatment
13:00	<b>Conclusion</b>
13:10	<b>Lunch</b>