



# HSM Conference

## 5-7 May, 2022 Siófok

## Conference Program

### THURSDAY

May 5th, 2022

- 11:30 - **Registration**
- 12:30 - 14:00 **Lunch**
- 14:00 - 14:10 **Ágnes Kittel** (president of HSM, ELKH-KOKI)  
**Conference opening**
- 14:10 - 15:00 **ATTILA LOSONCZY** (Columbia Univ NYC, US)  
In vivo functional imaging of cellular and circuit dynamics supporting navigation and learning in the rodent hippocampus  
(via Zoom)

### COMPETITION OF YOUNG RESEARCHERS

Chair: **Evelyn Orsó / Tamás Kolonits**

- 15:00 - 15:10 **Erzsébet Dódony** (CER ITPMS)  
In situ TEM results in the nikkel-silicon thin film system
- 15:10 - 15:20 **Péter Szocsics** (ELKH-KOKI, HAL)  
The vulnerability of the pyramidal cells in the primary motor cortex of patients with schizophrenia - hemispheric differences

- 15:20 - 15:30 **Tímea Hegedűs** (Univ. Szeged)  
Functionalization of boron nitride nanospheres with polyelectrolytes and the investigation of their colloidal stability
- 15:30 - 15:40 **Enkhbileg-Enkhjin** (Univ. Eötvös)  
The Life of a Leaf - Plastid differentiation and photosynthetic activity in horse chestnut buds and leaves
- 15:40 - 15:50 **Henrik Bali** (Univ. Szeged)  
Designed nanocatalysts in high pressure CO<sub>2</sub> hydrogenation reaction
- 15:50 - 16:00 **Viktor Kilin** (Univ. Semmelweis)  
Possible role of dipeptidyl peptidase 4 in inflammation
- 16:00 - 16:10 **Máté Hegedűs** (Univ. Eötvös)  
Investigation of anisotropy in enamel based on scanning electron microscopy and Raman spectroscopy techniques
- 16:10 - 16:20 **Nóra Tünde Lange-Enyedi** (IGGR)  
Amorphous calcium carbonate precipitation by cave bacterial strains
- 16:20 - 16:30 **Anett Lázár** (IGGR)  
Transformations of metastable calcium carbonate modifications under controlled conditions

## Coffee Break

Chair: **Evelyn Orsó / Tamás Kolonits**

- 16: 50 - 17:00 **Zoltán Novák** (Univ. Szeged)  
Electropolymerization of multilayer poly(pyrrole) layers in different electrolyte solutions and their evaluation of morphology and electroactivity
- 17:00 - 17:10 **Cecília Szekeres-Paraczký** (IEM)  
Examination of Cannabinoid Receptor 1 Immunopositive Perisomatic Innervation of Principal Cells in Focal Cortical Dysplasia Type IIB in Human Epileptic Patients

- 17:10 - 17:20 **Lívía Vásárhelyi** (Univ. Szeged)  
Characterization of mixing of granular materials via micro-CT technique and DEM simulations
- 17:20 - 17:30 **Tamás Ferenc Polgár** (BRC)  
Assessing the inflammatory state of the nervous system using fractalgeometry-based microglia cell profile clustering
- 17:30 - 17:40 **Dániel Olasz** (ELKH-EK MFA)  
Correlations between structural and mechanical properties of AlCu microcombinatorial thin films
- 17:40 - 17:50 **Krisztina Spisák** (BRC)  
Electron microscopic evaluation of the changes in the calcium homeostasis of Schwann cells in a mouse model of Wallerian degeneration
- 17:50 - 18:00 **Klára Hajagos Nagy** (ELKH-CER)  
Combinatorial mapping of microstructure and morphology in Cu-Mn solid solution films
- 18:00 - 18:10 **Adél Sóti** (Univ. Eötvös)  
Inhibitory effect of different ions during greening of wheat (*Triticum aestivum* L.) plants
- 18:30 - 19:30 **Dinner**
- 20:00 - **Wine tasting**

## FRIDAY

May 6th, 2022

Chair: **Béla Pécz**

- 09:00 - 09:45 **PÉTER TÖRÖK** (Univ. Singapore)  
Brillouin imaging in biology

- 09:45 - 10:10 **PHILOMELA KOMNINO** (Aristotle University of Thessaloniki)  
InN/GaN digital alloys: Strain-composition coupling at the atomic monolayer scale
- 10:10 - 10:30 **Csúcs Gábor** (ETH, Zürich)  
Quantitative Phase Imaging using a holotomographic system
- 10:30 - 10:50 **Mihály Pósfai** (Univ. Pannon)  
Relationships between minerals and microorganisms in Lake Balaton

## Coffee Break

### COMPANY PRESENTATIONS

- Chair: **Zsolt Czigány**
- 11:10 - 11:30 **Guillaume Brunetti** (JEOL, Europe SAS)  
JEOL ARM family and IDES integration
- 11:30 - 11:50 **Soma Godó** (UNICAM Hungary Ltd.)  
STED imaging: superresolution with some clicks
- 11:50 - 12:10 **Andreas Nowak** (Leica Microsystems)  
CRYO CORAL
- 12:10 - 12:30 **Emine Korkmaz** (Thermo Fisher)  
Infectious Disease Research, virus analysis using Cryo Electron Microscopy
- 12:30 - 13:30 **Lunch**

### IN THE MEMORY OF ÁRPÁD BARNÁ

- Chair: **Béla Pécz**
- 14:00 - 14:20 **Péter Barna B.** (ELKH-CER ITPMS)  
A unique experimental system built into a transmission electron microscope at the forefront of innovative thin film research. On the scientific achievement of Árpád Barna

- 14:20 - 14:40 **Miklós Menvhárd** (ELKH-EK, MFA)  
Why surface physics is important for TEM sample preparation? In memoriam of Arpi (A. Barna)
- 14:40 - 15:00 **György Radnóczy** (ELKH-CER ITPMS)  
TEM sample preparation by ion milling Memorial lecture to recall the input of Árpád Barna
- 15:00 - 15:20 **György Zoltán Radnóczy** (ELKH-CER ITPMS)  
Low energy Ar<sup>+</sup> ion beam cleaning of samples prepared focused ion beam (FIB)
- 15:20 - 16:00 **András Kovács** (Forschungszentrum Jülich)  
Electronmicroscopy 2.0
- 16:00 - 16:15 **Conference Group Photo**
- 18:00 - 18:45 **Dinner**
- 19:00 - 20:00 **JOACHIM FRANK** (Columbia University)  
Capturing motion by cryo-EM: resolution in time and state space  
(via Zoom)
- 20:00 - **GENERAL ASSEMBLY & THE AWARD CEREMONY OF THE IMAGE COMPETITION**

# SATURDAY

May 7th, 2022

Chair: **Péter Németh**

- 09:00 - 09:40 **ROBERTO BALBONI** (Univ. Bologna)  
Electron beam shaping in the TEM: theory, design and applications in the Q-SORT project (CNR IMM - Bologna)
- 09:40 - 10:00 **Viktória Kis** (ELKH-CER, ITPMS)  
Rietveld analysis of nanocrystalline materials using electron diffraction data
- 10:00 - 10:20 **Tamás Kolonits** (CER, ITPMS)  
Microstructure, hardness and thermal stability of nickel films electrodeposited from cysteine containing bath
- 10:20 - 10:40 **Zsolt Czigány** (CER, ITPMS)  
Calibration procedure to improve the accuracy of SAED in aberration corrected Themis

## Coffee Break

Chair: **Áron Keresztes**

- 11:00 - 11:10 **Flóra Siska** (Univ. Eötvös)  
The effect of public lighting on the anatomy and physiology of the common hackberry (*Celtis occidentalis* L.)
- 11:10 - 11:30 **Ali Shan Malik** (SzTE)  
Transmission Electron Microscopy of Ceria Supported Metal Nanoparticles
- 11:30 - 11:50 **Tamás Váczi** (Wianer RC)  
An introduction to a spectrally focused femtosecond SRS microscopy system
- 11:50 - 12:10 **János L. Lábár** (CER)  
Role of TEM in the development of Qubits

12:10 - 12:30 **Bence Rácz** (Univ. Vet. Med.)  
Ultrastructural changes of hypothalamic melanocortin cells during aging

12:30 - 12:45 **Closing the Conference**

12:45 - 14:00 **Lunch**

