

**PROGRAM**

# **EELISA Scientific Student Competition 2024**

**10-11 JUNE 2024**

**Budapest, Hungary**

Conceptually endorsed by EELISA INNOVation and COmmon Research Strategy (InnoCORE)

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In Association with

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## EELISA Scientific Student Competition 10-11. 06. 2024

### PROGRAM

Sessions	MS TEAMS	Location
<b>10<sup>th</sup> JUNE 2024</b>		
<b>8:30 – 9:15 Registration</b>		
<b>9:15 – 9:45 Opening ceremony</b> (speeches: Emilia Koczkáné Csiszár, István Szabó, Balázs Kövesdi, BME Introduction)	<a href="#">LINK</a>	Lecture hall – QAF14 (Building Q – ground floor)
<b>10:00 – 13:00 Parallel Sessions</b>		
Smart Production	<a href="#">LINK</a>	Q.AF.16 (Building Q/A – ground floor)
Informatics	<a href="#">LINK</a>	Q.BF.10 (Building Q/B – ground floor)
Social Sciences 1	<a href="#">LINK</a>	Q.BF.11 (Building Q/B – ground floor)
Chemical and Bioengineering	<a href="#">LINK</a>	Q.BF.15 (Building Q/B – ground floor )
Applied Sciences 1	<a href="#">LINK</a>	Q.A.405 (Building Q/A – 4 <sup>th</sup> floor)
Medicine	<a href="#">LINK</a>	Q.A.404 (Building Q/A – 4 <sup>th</sup> floor)
<b>13:00 – 14:00 Lunch</b>		
<b>14:00 – 17:00 Parallel Sessions</b>		
Automatization	<a href="#">LINK</a>	Q.AF.16 (Building Q/A – ground floor)
Applied Informatics	<a href="#">LINK</a>	Q.BF.10 (Building Q/B – ground floor)
Social Sciences 2	<a href="#">LINK</a>	Q.BF.11 (Building Q/B – ground floor)
Built Environment	<a href="#">LINK</a>	Q.BF.14 (Building Q/B – ground floor )
Applied Sciences 2	<a href="#">LINK</a>	Q.A.405 (Building Q/A – 4 <sup>th</sup> floor)
Innovative mobility	<a href="#">LINK</a>	Q.BF.15 (Building Q/B – ground floor )
Architecture	<a href="#">LINK</a>	Q.A.404 (Building Q/A – 4 <sup>th</sup> floor)
<b>17:00 – 18:00 Jury evaluation session</b>		
<b>18:00 – 22:00 Social program for students – Dinner for jury members</b>		
<b>11<sup>th</sup> JUNE 2024</b>		
<b>9:00 – 12:00 Get to know BME</b> (On demand department programs – with preliminary registrations)		
<b>12:00 – 13:30 Awarding ceremony</b> (speeches: János Levendovszky, Dale A. Martin, András Pataricza, László Gergely Vigh)	<a href="#">LINK</a>	Lecture hall – QAF14 (Building Q – ground floor)
<b>13:30 – 14:30 Lunch</b>		

## EELISA Scientific Student Competition 10-11. 06. 2024

### COMITTEES

#### Patrons:

Sofia Costa D'Aguiar (EELISA Executive Director)  
Dale A. Martin (President of EELISA)  
István Szabó (Strategic Director, Council of the Hungarian SSA)  
Tibor Czigány (Rector – BME)  
Emilia Koczkáné Csiszár (Vice-Rector for International Affairs – BME)  
János Levendovszky (Vice-Rector for Science and Innovation – BME)

#### Scientific Committee:

Adrián Horváth (BME / FŐMTERV)	György Hild (BME)
Ádám Nyerges (BME)	Hür Bersam Sidal (ITU)
Ágnes Urbin (BME)	Ismail Bayezit (ITU)
Ana-Maria Albu (UPB)	István Biró (BME)
Anar Dushpanova (SSSA)	István Lerchner (HUMDA)
Andrea Guirini (SNS)	István Majzik (BME)
Andreas Binkert (ZHAW)	József Hlinka (BME)
András Pataricza (BME)	Juan Manuel Muñoz (UPM)
András Czmerk (BME)	Juan de Juanes (UPM)
Apar Jain (FAU)	Kristóf Gábor Bándy (BME)
Ayşe Aylin Bayar (ITU)	Kristóf Iván (Pázmány)
Babir Guliyev (BME)	László Kullmann (BME)
Balázs Benyó (BME)	Máté Zöldy (BME)
Balázs Bokor (BME)	Márton Kormos (BME)
Balázs Imre (BME)	Márton Mezei (SSSA)
Behçet Uğur Töreýin (ITU)	Mariana Mirela Stanescu (UPB)
Bertalan Pizág (BME)	Mehmet Nuri Akinci (ITU)
Claudiu Petrica Patrascu (UPB)	Nihan Yıldırım (ITU)
Dániel Hadházi (BME)	Noémi Csigéné Nagypál (BME)
Domonkos Wettstein (BME)	Oszkár Semeráth (BME)
Edit Tomasovszky (BME)	Pasqualantonio Pingue (SNS)
Emine Gorgul (ITU)	Pascal Bigey (PSL)
Eszter Éva Solt (BME)	Péter Harth (BME)
Gergely Szilveszter (BME)	Sándor Kiss (BME)
Géza Németh (BME)	Simona Mihaela Bibic (UPB)
Gheorghe Valerian Croitorescu (UPB)	Tamás Barbarics (BME)

Tamás Gyenes (BOSCH)  
Tamás Krámer (BME)  
Uğur Töreysin (ITU)  
Valentina Casieri (SSSA)  
Viktória Dóra Feigl (BME)  
Zoltán Bánhidi (BME)

Zoltán Horváth (ELTE)  
Zoltán Micskei (BME)  
Zoltán Vámosy (UNI-Óbuda)  
Zoltán Víg (BME)

### Organizing Committee:

Balázs Kövesdi – chairman (BME)  
Eszter Tóthné Mischl – secretary (BME)  
László Gergely Vigh – EELISA coordinator (BME)  
Brigitta Szilágyi (BME)  
Ágnes Urbin (BME)  
Patrik Gádoros (BME)  
Sándor Kiss (BME)  
Márk Kovács (BME)  
Tóth Boglárka (BME)  
Zsuzsanna Jászai (BME)  
Oros-Klementisz Marianna (BME)  
Éva Kármán-Tamus (BME)  
Attila Ficsor (BME)  
Márton Virt (BME)  
Dobos Kovács Mihály (BME)  
Kata Buda (BME)

András Pataricza – co-chairman (BME)  
Cecília Liszkay – secretary (BME)  
Máté Zöldy (BME)  
Noémi Csigéné Nagypál (BME)  
Dóra Máthé (BME)  
Csaba Fehér (BME)  
Bálint Molnár (BME)  
Enikő Buda (BME)  
Dóra Baranyai (BME)  
András Horváth (BME)  
Márton Pluzsik (BME)  
Milán Mondok (BME)  
Réka Mándoki (BME)  
Bálint Kurucz (BME)

### Members of the EELISA 2 WP9

Anikó Grad-Gyenge (BME)  
Inês Roquero da Costa Pinto (ECO)  
Mustafa Sevimli (ENPC)  
David Schkade (FAU)  
Victoria Goldberg (FAU)  
Hür Bersam Bolat (ITU)  
Ilaria Ciofini (PSL)  
Delphine Saint-Laurent (PSL)  
Oscar-Eduardo Perez (PSL)  
Simona Gallerani (SNS)  
Darya Krasilnikov (SNS)  
Andrea Mina (SSSA)  
Rossella Raso (SSSA)

Sara Barsanti (SSSA)  
Chiara Carbonaro (SSSA)  
Maria Teresa Navigato (SSSA)  
Silvia Alessi (SSSA)  
Horia Iovu (UNSTPB)  
Iuliana Biru (UNSTPB)  
Juan Manuel Muñoz Guijosa (UPM)  
Isabel Salgueiro (UPM)  
Ana Horta Bellido (UPM)  
Andreas Binkert (ZHAW)

## SOCIAL SCIENCES 1

**Chairman:** István Szabó, Council of the Hungarian SSA (OTDT)

**Jury members:** Edit Tomasovszky, Budapest University of Technology and Economics  
Zoltán Bánhidi, Budapest University of Technology and Economics

**Secretary:** Éva Kármán-Tamus, Budapest University of Technology and Economics

**10<sup>00</sup>** **CRISTINA-MIHAELA FLEACA, RADU-MARIAN BUJDOIU:** *Comparative analysis of organizational performances using the EFQM Excellence Model: the sustainability perspective*

**10<sup>20</sup>** **ULYSSE MANHES:** *Anti-romantic irony in Central Europe (1918-1989)*

**10<sup>40</sup>** **NUOFAN GAO:** *Exploring the Success Factors of MetaApp: A Case Study of China's Metaverse Industry.*

**11<sup>00</sup>** **RITA LADJÁNSZKY:** *Application of empirical and analytical usability studies to the user-centered development of extended reality (XR) software*

*Break*

**11<sup>30</sup>** **LEONARDO RICCI:** *European industrial strategic autonomy in the semiconductor market under the Chips Act*

**11<sup>50</sup>** **LILLA HARANGOZÓ:** *Defense techniques of emotional labor volunteer workers in Hungary*

**12<sup>10</sup>** **OZAN DEMIREL:** *Song and Artist Classification and Success Prediction with Machine Learning as a Software*

**SOCIAL SCIENCES 2**

**Chairman:** Noémi Csigéné Dr. Nagypál, Budapest University of Technology and Economics

**Jury members:** Eszter Éva Solt, Budapest University of Technology and Economics  
Ayşe Aylin Bayar, Istanbul Technical University  
Babir Guliyev, Budapest University of Technology and Economics

**Secretary:** Éva Kármán-Tamus, Budapest University of Technology and Economics

**14<sup>00</sup> AWRIN RAKSHIT:** *Politics and white collar: An empirical study on the stock market prices of politically connected firms in India*

**14<sup>20</sup> ROSARIO CARRETERO CASADO:** *Options for improving air quality in urban environments through measures in the road traffic sector*

**14<sup>40</sup> MATTEO DALLE LUCHE:** *Heterogeneous returns on wealth in the Italian economy. The distributional consequences of differential households' savings and investment choices.*

**15<sup>00</sup> ALESSANDRO VALFRÈ:** *Commuting at municipality level in Italy: analysis and gender differences*

**15<sup>20</sup> PAWAN KUMAR:** *Inclusive Green Finance: A Study of Green Finance and Financial Inclusion on the emerging markets of India and other BRICS countries*

*Break*

**15<sup>50</sup> GUILLERMO CRUZ PINTO:** *Transmission Expansion Planning challenges in Spain for Integrating Renewable Energy*

**16<sup>10</sup> CIPRIAN NEGURA:** *Development of an AI-Based Intelligent Training System for Business Professionals: Proposed Architecture*

**16<sup>30</sup> ANA-MARIA MARIN, VERONICA CONSTANTIN, GEORGIANA CREȚU, RADU-MARIAN ORIȚĂ:** *The social implications of Electrical Engineering technologies. An analysis of equity, accessibility, ethical implications, and real-life application.*

## SMART PRODUCTION

**Chairman:** István Bíró, Budapest University of Technology and Economics

**Jury members:** Hür Bersam Sidal, Istanbul Technical University  
Juan de Juanes, Universidad Politécnica de Madrid

**Secretary:** Márton Pluzsik, Budapest University of Technology and Economics

**10<sup>00</sup> JACOBO GARRIDO DELGADO:** *The Parameter estimation and CFD analysis of a Hyperloop Capsule*

**10<sup>20</sup> RADULOVIC LUKA:** *Manufacturing of Zn foam by chemical sintering*

**10<sup>40</sup> PAUL CRETU, ABDREEA TANASE:** *Structural strength study of a solid rocket motor*

**11<sup>00</sup> MARINA CASTRO DE TROYA:** *Research on waste management, environmental awareness and recycling PLA residue as a way to create new products*

**11<sup>20</sup> BARNABÁS PIRI:** *Experimental and numerical characterization of critical parameters in elliptical shell snap-through*

*Break*

**11<sup>50</sup> DÁNIEL NAGY:** *Numerical analysis of bubble interactions in sonochemistry*

**12<sup>10</sup> CSENGE DREMÁK:** *Production of wood-plastic composite using polyolefin and wood waste*

**12<sup>30</sup> LAURA MAILAT:** *Improving the Accessibility of Playground Swings for Wheelchair Users*

## AUTOMATIZATION

**Chairman:** András Czmerk, Budapest University of Technology and Economics

**Jury members:** Márton Mezei, Scuola Superiore Sant'Anna di Pisa  
Ágnes Urbin, Budapest University of Technology and Economics  
Balázs Bokor, Budapest University of Technology and Economics  
Kristóf Gábor Bándy, Budapest University of Technology and Economics

**Secretary:** Márton Pluzsik, Budapest University of Technology and Economics

**14<sup>00</sup> MIGUEL GRANDE RÁEZ:** *Chamber design and airflow optimization for E-Nose Technology*

**14<sup>20</sup> ZSANETT BERTÓK:** *Feedback Linearization Based Sensorless Control Scheme for Permanent Magnet Electric Drives*

**14<sup>40</sup> IULIAN-NICOLAE PETRIIA, DANIEL-IOAN MIRCUCU:** *Comparative analysis of materials used in the construction of a miniature Unmanned Aerial Vehicle*

**15<sup>00</sup> CERCEL DRAGOS-STEFAN, DOGARU PAUL-LEONARD, MARA-IOANA HUTART, LUCA DAN-ANDREI, RUSU COSMIN-CONSTANTIN:** *Modular Embeddable Robotic Actuator (MERA)*

*Break*

**15<sup>30</sup> BIANKA FORCZEK, LEVENTE ÁKOS LUDVIG:** *Radiometric Calibration of HERA AFC Cameras*

**15<sup>50</sup> BALÁZS ENDRÉSZ:** *Visual balancing of the Furuta-pendulum*

**16<sup>10</sup> LÁSZLÓ GÁCSI:** *Safety Critical Control of mechanical systems with input constraint*

**16<sup>30</sup> AHMET TURAN AKCAY:** *V2G Technology for peak shaving and profitability using constrained optimization techniques*



## INFORMATICS

- Chairman:** Géza Németh, Budapest University of Technology and Economics
- Jury members:** Oszkár Semeráth, Budapest University of Technology and Economics  
Behçet Uğur Töreyn, Istanbul Technical University  
István Majzik, Budapest University of Technology and Economics  
Zoltán Horváth, Eötvös Loránd University
- Secretary:** Attila Ficsor, Budapest University of Technology and Economics

**10<sup>00</sup>** **CĂTĂLIN CHELMUŞ, IONUŢ-LIVIU MOGDA, GABRIEL-ALEXANDRU CONSTANTINESCU, ANDREI-GEORGE NICOLA:** *Avionics system for supersonic rockets - Project NOR*

**10<sup>20</sup>** **NÁNDOR KÓFARAGÓ:** *Multi-view object detection using NeRF and YOLO*

**10<sup>40</sup>** **ÁRMIN ZAVADA:** *A Modular Modelling Language for Configurable Formalisation and Verification of Engineering Models*

**11<sup>00</sup>** **ALBERTO GONZÁLEZ CALATAYUD:** *GPT vs BioMistral for medical entity recognition in Spanish*

**11<sup>20</sup>** **BALÁZS MÁRK MIHÁLYI:** *All about momentum: investigating high-pressure situations in the NBA through scoring probability*

*Break*

**11<sup>50</sup>** **ANDREI TIME, SORIN IONESCU, DIEGO AUGUSTO DE JESUS PACHECO:** *Technical views on Software as a Service integration and development technologies: Systematic literature review, current tendencies, and avenues of inquiry*

**12<sup>10</sup>** **MÁRK CZIMBER:** *Development of a Real Time Point Cloud Processing and Self-driving Software*

**12<sup>30</sup>** **ALVARO GARCIA-BARRAGAN:** *OncoRuleLLM: Oncological Rule-based LLM for normalizing Spanish EHR in an explainable manner*

**12<sup>50</sup>** **ÁGOSTON DALOTTI:** *Optimizing a speech-based model for estimating the severity of depression using speech samples imitating multiple emotional states*

## APPLIED INFORMATICS

**Chairman:** Zoltán Micskei, Budapest University of Technology and Economics

**Jury members:** Zoltán Vámosy, Óbuda University  
Kristóf Iván, Pázmány Péter Catholic University  
Nihan Yildirim, Istanbul Technical University  
Tamás Barbarics, Budapest University of Technology and Economics  
Mehmet Nuri Akinci, Istanbul Technical University

**Secretary:** Milán Mondok, Budapest University of Technology and Economics

**14<sup>00</sup> ZOLTÁN SIMON:** *Time evolution simulation of the quantum mechanical wave function in 3D space*

**14<sup>20</sup> ȘTEFAN-MATEI GHEORGHITĂ, ADRIAN-IONUȚ DAVID:** *Wavelet Filter analysis for hybrid and electrical vehicles*

**14<sup>40</sup> KRISTÓF FLOCH:** *Gaussian-Process-based adaptive trajectory-tracking control for small-scale autonomous ground vehicles*

**15<sup>00</sup> RADU CRISTIAN OPREANU:** *Applications of Edge Computing for Modelling the Energy Transfer in Modern Distribution Networks*

**15<sup>20</sup> BENEDEK ZENTAI:** *Boat speed analysis in SailGP*

**15<sup>40</sup> LAURENȚIU-ALEXANDRU ZAHARIA, MIRUNA-ELENA TĂLMACEL, ALEX-IONUȚ MARINESCU:** *Markov chain approach for IoT plant watering system using sensors*

*Break*

**16<sup>10</sup> MÁRTON LUKÁCS GELLÉR:** *Recyclable Material Sorter Robotic Arm*

**16<sup>30</sup> SORANA-ELIZA BALTARETU, ROBERT-MIHAI PIVODA:** *Games: Military VS Civil*

**16<sup>50</sup> KATA DÓRA VINCZE:** *Development of a rehabilitation exoskeleton to alleviate spasm in the hand due to stroke*

## INNOVATIVE MOBILITY

**Chairman:** Máté Zöldy, Budapest University of Technology and Economics

**Jury members:** Tamás Gyener, Bosch GmbH  
István Lechner, Humda Zrt.  
Gheorghe Valerian Croitorescu, Politehnica University of Bucharest

**Secretary:** Márton Virt, Budapest University of Technology and Economics

**14<sup>00</sup> RUBÉN FLORES GANDUR:** *Methodology for the socioeconomic assessment of an electric road system (ERS) based on inductive technology for long-haul vehicles – the case of a high-density corridor in Catalonia, Spain.*

**14<sup>20</sup> GÁBOR JEVUCZÓ:** *Optical flow-based yaw rate estimation and fault detection on drones*

**14<sup>40</sup> SOFIJA ILIĆ:** *Design and Implementation of LQG Control Strategy for Unmanned WIG Vehicle*

**15<sup>00</sup> MIGUEL UREÑA PLIEGO:** *Machine learning models for urban analysis: Historic evolution of the surface destined for cars in Vienna and Madrid*

**15<sup>20</sup> JANKA TIHANYI, NÓRA JULIANNA RÁDULY:** *City logistics analysis of loading areas in Budapest*

**15<sup>40</sup> GEORGE DANIEL ENACHE:** *The Design and development of an Integrated Propulsion System: Shared cooling and lubrication strategy*

*Break*

**16<sup>10</sup> RARES-ALEXANDRU NICULESCU:** *Implementation of ADAS functions on a small-scale autonomous vehicle*

**16<sup>30</sup> MIRCEA-DAN MIRICĂ:** *The virtual prototype of a light electric van and its energy storage system design and thermal behavior*

**16<sup>50</sup> REBEKA ANNA JÁGER:** *Air traffic control automation solutions*

**17<sup>10</sup> BABIUC DARIA, VICTOR LUNCAȘU:** *Implementation of Artificial Intelligence in Road Traffic Optimization*

## ARCHITECTURE

**Chairman:** György Hild, Budapest University of Technology and Economics

**Jury members:** Emine Gorgul, Istanbul Technical University  
Domonkos Wettstein, Budapest University of Technology and Economics

**Secretary:** Réka Mándoki, Budapest University of Technology and Economics

**14<sup>00</sup> JING ZHANG:** *Research on the Aesthetics of Architectural Space in the Alhambra Palace*

**14<sup>20</sup> İREM ESEN:** *Textile Waste Upcycling in Interior Design*

**14<sup>40</sup> RAND SUKKAR:** *Spatial Justice in Urban Regeneration Case Study: Budapest, Józsefváros*

**15<sup>00</sup> DOROTTYA LIZER, LUCA SZAKONYI:** *Alakbánya / Shape-pit!*

**15<sup>20</sup> ESZTER NAGYHEGYESI:** *Bioplastic textures*

*Break*

**16<sup>00</sup> NIKOLETT GERASZIN:** *Floating Elizabeth Town: /Adapting the Principles of Yona Friedman to Budapest/*

**16<sup>20</sup> NUH ERTURK:** *Architectural Floor Plan Design Optimization*

**16<sup>40</sup> NÓRA HANGODI:** *Abstract relativity*

**MEDICINE**

**Chairman:** Balázs Benyó, Budapest University of Technology and Economics

**Jury members:** Pascal Bigey, Chimie ParisTech  
Mariana Mirela Stanescu, Politehnica University of Bucharest  
Valentina Casieri, Scuola Superiore Sant'Anna di Pisa  
Anar Dushpanova, Scuola Superiore Sant'anna di Pisa  
Apar Jain, Friedrich-Alexander University Erlangen-Nürnberg

**Secretary:** Dobos Kovács Mihály, Budapest University of Technology and Economics

**10<sup>00</sup> LEANDRO MANCINA:** *The role of MKK4 in the accelerated liver regeneration induced by ALPPS surgery*

**10<sup>20</sup> SHANNON VLAHAKIS:** *Exploring The Potential of Remote Patient Monitoring on the Management of Hypertension in Pregnant Women at Parirenyatwa Hospital: An Observational Feasibility Study*

**10<sup>40</sup> IRENE PINILLA FERNÁNDEZ:** *Multiple linear regression models to predict components of neuropathic pain associated with whiplash disorder using brain Magnetic Resonance Spectroscopy (MRS).*

**11<sup>00</sup> ANDRA-CRISTIANA MARIA-FULASU, RUXANDRA-IOANA CIPU, ȘTEFAN-CĂTĂLIN PETRESCU:** *Contributions on the non-linear modelling of the immune system activation in secondary lymphoid organs*

**11<sup>20</sup> AHMET KAYMAK:** *Spiking Patterns in The Globus Pallidus Highlight Convergent Neural Dynamics Across Diverse Genetic Dystonia Syndromes*

*Break*

**11<sup>50</sup> ALEXA DIANA KALYANII:** *Postsynaptic Density-95*

**12<sup>10</sup> LISABETH EMILIUS:** *Immune responses against tumour epitopes generated by aberrant splicing*

**12<sup>30</sup> MIHAELA-CRISTINA STRÎMTOREANU:** *Improving Medical Image Quality: A Comparative Analysis of Techniques*

**12<sup>50</sup> LINNEA EVANSON:** *Cortical representations of speech in the developing brain*

**APPLIED SCIENCES 1**

**Chairman:** Viktória Dóra Feigl, Budapest University of Technology and Economics

**Jury members:** László Kullman, Budapest University of Technology and Economics  
Andrea Guirini, Scuola Superiore Sant'Anna di Pisa  
Simona Mihaela Bibic, Politehnica University of Bucharest

**Secretary:** Bálint Kurucz, Budapest University of Technology and Economics

**10<sup>00</sup> GEMA ARIADNA CHUNG ECHEVARRÍA:** *Improvement of the development of the parasitoid *Chelonus inanitus* L. (Hymenoptera: Braconidae) for the use as a natural enemy of the agricultural pests*

**10<sup>20</sup> JACOB GONZÁLEZ ISA:** *Detection of metagenomic functional enzyme variants of biotechnological and ecological interest through phylogenomics*

**10<sup>40</sup> VICTORIA-ELENA PLOPEANU:** *Exploratory study of new hydrodynamic instabilities in multi-fluid channel flows*

**11<sup>00</sup> ALFONSO LAINEZ MUÑIZ:** *Experimental study of wing tip vortices at low Reynolds numbers and development of a particle tracking velocimetry (PTV) system*

**11<sup>20</sup> LAURA PASCAL:** *Flow regime transitions and peculiar fluid structures in selective withdrawal as a droplet generation technique*

*Break*

**11<sup>50</sup> STEFAN LUNCANU, ANDREI ZĂBREANU, ION CEBAN:** *Exploring Exergy Models: Investigating Connections with Negentropy and Heat Transfer for Thermodynamic Efficiency Analysis*

**12<sup>10</sup> MEHMET ORHAN ŞIRIN:** *Effects of space environment in low earth orbit on the radiation shielding properties of PMMA/CMT composites*

**12<sup>30</sup> BIANCA HÂRSEANU:** *Capillary fountains*

## APPLIED SCIENCES 2

**Chairman:** Sándor Kiss, Budapest University of Technology and Economics

**Jury members:** Andreas Blinkert, ZHAW School of Engineering  
Pasqualantonio Pingè, Scuola Normale Superiore  
Márton Kormos, Budapest University of Technology and Economics

**Secretary:** Patrik Gádoros, Budapest University of Technology and Economics

**14<sup>00</sup> ALEXANDRA-MARIA BORȘ, ANDREI-ROBERT COMAN:** *Powering the Future: Game Theory Perspectives on Electric and Diesel Vehicles in the Era of Sustainability and Climate Change*

**14<sup>20</sup> DONÁT ÁKOS KÖLLER:** *Examining the correlation between university instructors' research performance and student evaluations using data science tools*

**14<sup>40</sup> BENCE FITOS:** *Weak vs. strong breaking of integrability in interacting scalar quantum field theories*

**15<sup>00</sup> DAN MAUREL:** *Sylvester equations and solutions injectivity*

*Break*

**15<sup>30</sup> ISTVÁN ANDORFI:** *Synthetic diagnostic-based method for the validation of HESEL turbulence simulation*

**15<sup>50</sup> ISRAEL LÓPEZ MORENO, HELENA UYÁ RAMÍREZ:** *Modeling and simulations of piano strings*

**16<sup>10</sup> SANTIAGO LOZA MORCILLO:** *Design of broadband beam configurators for antenna arrays*

**CHEMICAL & BIOENGINEERING**

**Chairman:** Balázs Imre, Budapest University of Technology and Economics

**Jury members:** Szilveszter Gergely, Budapest University of Technology and Economics  
Claudiu Petrica Patrascu, Politehnica University of Bucharest  
Ana-Maria Albu, Politehnica University of Bucharest

**Secretary:** Kata Buda, Budapest University of Technology and Economics

**10<sup>00</sup> DAVID HIDALGO-CARVAJAL:** *A Circular Economy Living Lab – Enabling the transition of the university campus towards a regenerative system*

**10<sup>20</sup> ADRIANA RECALDE GARCETE:** *Recycling almond hulls for sustainable livestock production*

**10<sup>40</sup> SUVIJA SUTHAKARAN:** *An end-to-end platform for fragment-to-lead design by NMR for oncology targets*

**11<sup>00</sup> PAUL VALENTIN LOVIN, ANA-MARIA ALBU, IULIA NEBLEA, IOANA CĂTĂLINA GÎFU, BOGDAN TRICA, CRISTIAN ANDY NICOLAE:**  
*Macromolecular Chemistry Versatile Tool for Improving the Self-Assembly Skills of Commercial Coatings*

**11<sup>20</sup> ALIN-IONUȚ ALECU, ANA-MARIA ALBU, CELINA MARIA DAMIAN, ANDRA MIHAELA ONAȘ, CRISTINA STAVARACHE, ROXANA TRUȘCĂ:**  
*Catechols: A never-Ending Story of Building Innovative Polymeric Materials*

*Break*

**11<sup>50</sup> BALÁZS BORBÁS:** *Upconverting Nanoparticles: Anti-Stokes Photon Emission and Energy Transfer Properties of Composite Thin Films*

**12<sup>10</sup> ENRIQUE ALGAR ARÉVALO:** *Alkaline electrolysis at sea: on the optimization of the electrolyte renewal problem*

**12<sup>30</sup> CRISTIAN RADU:** *Chitosan polymer as a green corrosion inhibitor for copper substrates in acid media*

**12<sup>50</sup> ALESSANDRO PASQUI:** *AI-Based and physics-informed computer vision methods for biological cell systems*



## BUILT ENVIRONMENT

**Chairman:** Juan Manuel Muñoz, Universidad Politécnica de Madrid

**Jury members:** Adrián Horváth, Budapest University of Technology and Economics  
Tamás Krámer, Budapest University of Technology and Economics

**Secretary:** András Horváth, Budapest University of Technology and Economics

**14<sup>00</sup> ADÉL OLOSZ:** *Parameter analysis of a Hungarian developed „Stockbridge damper”*

**14<sup>20</sup> ALEJANDRO JOSÉ TERRONES GARCÍA:** *Ballistic impact test on stabilized rammed earth*

**14<sup>40</sup> MÁTÉ ÁLMOS SZONDI:** *Applying a shape evolution equation to compute membrane surfaces*

**15<sup>00</sup> LEVENTE SZATMÁRI:** *BIM-based energy and environmental optimization of an educational building*

**15<sup>20</sup> NEREA PORTILLO JUAN:** *Implementation of Artificial Intelligence Techniques in climate change studies*

**15<sup>40</sup> SAMUEL REYES SANZ:** *WindFormer: Pretraining a Statio-Temporal Transformer for Wind Forecasting*

# BME CAMPUS MAP

