

Category: B1 – Biomedical Engineering

Room: SD4.111

Chairman: doc. Mgr. Dinara Sobola, Ph.D.

Vice-chairman: Mgr. Bc. Darina Čejková, Ph.D.

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Committee members: Ing. Nikola Papež, Ph.D.

Ing. Lukáš Smital, Ph.D.

Ing. Martin Králík

Time	Authors	Title
9:00	Tomáš Kaválek	Design and 3D printing of a radiographic ruler for pediatric orthopedics
9:15	Ondřej Hykl, Stanislava Bezdíček Králová, Markéta Jakubičková, Helena Vítková	Workflow for Novel RiPP Cluster Detection in Antarctic Bacterial Genomes
9:30	Veronika Šromová, Dinara Sobola	Development of an Optimized Workflow for the Fabrication and Quantitative Analysis of Microstructured Bio-Substrates
9:45	Borbála Udvaros, Karel Sedlář	Bioinformatics package for quality filtering of genomes for pangenome analysis
10:00	Jakub Řehůřek, Ing. Oto Janoušek, Ph.D.	Implementation and Validation of a Modular Pipeline for Multimodal Biosignal Acquisition from the Wearable Muse Device
10:15	Radim Žbánek, Petr Nejedlý, Filip Plešinger	Cardio Ram: SignalPlant Plugin for ECG Segmentation and Classification
10:30	Helena Géryková, Radovan Smíšek	Analysis of High-Frequency Components of the P Wave
10:45	Ladislav Duraja	Real-Time Detection and Visualization of the Superficial Venous System
11:00	Jan Švec, Richard Ředina, Eric Glowacki	Automated Quantification of Hind-Leg Deflection in the <i>Locusta migratoria</i> Nerve Stimulation Model
11:15	Jakub Hekal, Jan Šíma	Stroke volume estimation using photoplethysmography

Category: B2 – Communication, Networks and Security

Room: SC5.35

Chairman: doc. Ing. Zdeněk Martinásek, Ph.D.

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Committee members: Ing. Willi Lazarov

Ing. Dinh Thao Le

Matěj Podaný (ŠKODA AUTO, a.s.)

Time	Authors	Title
9:00	Emanuel Antol	Design and Implementation of a Multifunctional Home Edge Server with Integrated AI Acceleration on Compact Computing Platforms
9:15	Vojtěch Krehan, David Kuřátko, Ondřej Jaroš	Reflector Dipole Antenna for Secondary Radar Band
9:30	Vojtěch Trunda, Lukáš Beneš	Universal software tool for communication with submeters in PV systems
9:45	Natália Tóthová, Roman Kümmel	pttechnologies: a tool for identifying web technologies
10:00	Lucia Hirnerová, Sara Ricci	Hardness Graphs and Practical Experiments in Post-Quantum Cryptography
10:15	Katarína Kúdelová, Willi Lazarov, Jakub Vostoupal	Online Radicalisation and Extremism: An Integrated OSINT and Legal Analysis
10:30	Ilya Voloshin, František Rusnák	Communicating devices synchronized using the IEEE 1588 standard
10:45	Vojtech Smejkal	Opportunistic Rainfall Detection Using Microwave Backhaul Links of Regional ISPs
11:00	Jan Cícha, Zbyněk Raida	Diversity antenna for Bluetooth Low Energy and Ultra-wideband

Category: B3 – Electrical Energy Systems and Power Engineering

Room: SA4.37

Chairman: Mgr. Jiří Šperka, Ph.D.

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Josef Černohous (ABB s.r.o.)

Libor Gajdoš (Honeywell, s.r.o.)

Time	Authors	Title
9:00	Jan Kalina	Centralized Dispatch of Photovoltaic Plants, AVEVA Implementation and Operating Data Analysis
9:30	Alexandr Michal, Lukáš Radil	A Statistical Analysis of the Relationship Between Photovoltaic Power Plant Installations and Energy Consumption by Various Consumer Groups
9:45	Šimon Karady	Analysis of energy balance of agricultural companies
10:00	Richard Remáč	Design of an electric vehicle charging station combined with battery storage
10:15	Tomáš Rojík, Jan Koudelka	Feed-Forward Curves Calculation for a Control Valve and Circulation Pump Performance Improvement During Ancillary Services Provision
10:30	Dominik Heral, Martin Světlík	Finite Element Analysis of Magnetic Fields in a High-Voltage Synchronous Machine
10:45	Aleš Neterda	Detection and Analysis of Partial Discharges Using the PDCOM and MDC605 Devices

Category: B4 – Automation, Modelling and Intelligent Systems

Room: SD3.102

Chairman: doc. Ing. Miroslav Jirgl, Ph.D.

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Zdenek Padera (Honeywell, s.r.o.)

Tomáš Kozel (ABB s.r.o.)

Time	Authors	Title
9:00	Adrián Mičko, Silvestr Vaculovič	From Dialogue to Actions: PLC Control using Large Language Models
9:15	Filip Majchrák, Jakub Arm	Web-Based 3D Simulator for Industrial Automation Processes
9:30	Daniel Dušek	Industrial Production Process Simulator APS
9:45	Vojtěch Kropáč, Dominik Řičánek	Prediction of contamination level in a water treatment plant using neural networks
10:00	Emil Nikola	Autonomous indoor rover Using machine vision for navigation
10:15	Adam Lopúch, Jakub Čelko	Identification of Filters in Weir Driver Model
10:30	Matěj Duhajský, Dominik Řičánek	Activated Sludge Model for Specific Wastewater Treatment Plant with Sequencing Batch Reactor Technology
10:45	Marek Ďurďa, Šimon Sloboda	Simple Active Attitude Determination and Control System for Cubesat

Category: B5 – Measurement, Signal Processing and Embedded Applications

Room: SD6.76

Chairman: doc. Ing. Tomáš Frýza, Ph.D.

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Ing. Petr Dejdar, Ph.D.

Vojtěch Miček (Thermo Fisher Scientific Brno s.r.o.)

Luděk Žaloudek (NXP Semiconductors Czech Republic s.r.o.)

Time	Authors	Title
9:00	Šimon Tokarčík, Jan Mareš, Richard Vaško	Recognition of Real and False Gunshots
9:15	Dominik Chalupka, Ladislav Polák	Litemate: An Assistive Tool for Video Image Color Correction
9:30	Lukáš Ruman	FPGA Implementation of an ANS-Based Compression Algorithm
9:45	Tomáš Procházka, Jan Brodský	Microfluidic system for electrochemical measurements
10:00	Martin Zatloukal, Jan Kufa	Temperature-Controlled Chamber for Comparing Temperature Sensors
10:15	Jakub Stastny, Karel Jurik	A Compact RF Power Meter with 40 dB Dynamic Range from DC to 4 GHz
10:30	Hana Štěrbová	Design and implementation of a Universal Logic Analyzer and Data Logger
10:45	Matěj Rous, Jan Mikulka, Roman Vaněk	Current source module for electrical impedance tomography
11:00	Marek Drásal	Multi-sensor data acquisition system for predictive maintenance

Category: M1 – Biomedical Engineering

Room: SE4.166

Chairman: Ing. Helena Vítková, Ph.D.

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MUDr. Ing. Richard Ředina

Petr Walek (Thermo Fisher Scientific Brno s.r.o.)

Time	Authors	Title
9:00	Monika Kutejova, Larisa Chmelikova, Inna Zumberg	Extracellular ionic stress: osmolality and sodium as determinants of osteosarcoma SaOS-2 cell viability and migration
9:15	Adéla Fialová, Karel Sedlář	Functional Profiling of Bacterial Genomes Using Constrained Ordination and Dimensionality Reduction
9:30	Borys Aleksandrenko, Martin Súkeník, Karel Sedlář	Hardware and Software Augmentation of Bioreactors for Culturing Bacteria
9:45	Lukáš Rišian, Roman Jakubiček	Analysis of Multiple Myelomas in Dual-Energy CT-Based Vertebral Data
10:00	Katarína Maláňová	Feature Selection for Breast Cancer Classification Using Quantum-Inspired Evolutionary Optimization
10:15	Dominika Kubová, Martin Králík, Martin Mézl	Interactive rehabilitation device for hand and wrist
10:30	Barbora Říhová, Jiří Kratochvíla	Novel biomarkers for non-invasive in vivo characterization of microvascular heterogeneity
10:45	Jakub Fojtík, Jan Mikulka	Physics informed neural networks and their application in electrical impedance tomography
11:00	Filip Rudol	Segmentation of Fibroglandular Tissue and Vessels in Dynamic Breast MRI

Category: M2 – Signal Processing, Communication and Intelligent Sensing

Room: SC3.62

Chairman: doc. Ing. Jan Mikulka, Ph.D.

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Jiří Macků (Renesas Design Czech s.r.o.)

Time	Authors	Title
9:00	Ján Fridrich	Audio Dequantization with a Phase-Aware Prior
9:15	Kristína Niková	From Labels to Waves: A Perceptually-Driven Approach to Wavetable Synthesis
9:30	Václav David	Virtual wind instruments with labium and holes
9:45	Christopher Koiš, Aleš Povalač	Analysis of Channel Impulse Response in Ultra-Wideband Localization Systems
10:00	Yonatan Tekle Agafari, Ing. Petr Kriz	Classification of Normal and Anomalous Air Using BME688 Sensor Data
10:15	Jan Jiří Bauer	Design of a Low-Power UWB Mesh Network for Ranging and Localization
10:30	Matej Grega	Design of a Pulsed Laser Diode Driver for Optical Fiber Sensor Measurement
10:45	Filip Ferko	Comparison of Object Detection Models for Unmanned Aerial Systems
11:00	Miloslav Kužela, Tomáš Frýza	Augmented reality for assisted testing of radar sensors

Category: M3 – Embedded Systems, Space Electronics and Secure Hardware

Room: SE6.121

Chairman: prof. Ing. Jaroslav Boušek, CSc.

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Jan Těšitel (E.ON Česká republika, s.r.o.)

Time	Authors	Title
9:00	Ivo Dovičák, Karel Juřík	Compact IQ demodulation based measurement system for vector reflectometry
9:15	Tomáš Paulysko, Jiří Veverka	DESIGN OF MIBICO PAYLOAD CONTROLLER FOR THE CIMER MISSION
9:30	Tomáš Dočkal, Jiří Veverka	Design of a power supply unit for a CubeSat satellite
9:45	Jan Bažil	Spacecraft electrical passivation switch providing a physical gap on the power line
10:00	Martin Kopka	Adaptive Digital Control Techniques for Wide-Range Efficiency Optimization in a Buck Converter
10:15	Arnost Ondruska, Martin Stava	Automated Production-test Application of Industrial Power Supplies
10:30	Patrik Bachorec	Antenna HB9CV for Satellite Communication
10:45	Roman Vaněk, Jan Mikulka	Multiplexer module for electrical impedance tomography
11:00	Martin Kouřil	3D Printed Coaxial Drone
11:15	Šimon Buchta, Zbyněk Raida	Printed circuit board investigations in ANSYS SIwave

Category: M4 – Electrical Energy Systems and Diagnostics

Room: SA7.10

Chairman: Ing. Michal Ptáček, Ph.D.

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Committee members: Ing. Peter Mičian

doc. Ing. Jiří Vaněk, Ph.D.

Václav Krutil (ABB s.r.o.)

Time	Authors	Title
9:00	Jan Jilčík	Comparative Study on the Electrochemical Performance of Lead Foil in Different Electrolytes for Sodium-Ion Batteries
9:15	Michal Simon	Creation of a laboratory task with a focus on hydrogen energy storage
9:30	Stanislav Kalousek	Production technology of coloured photovoltaic modules
9:45	Martin Poul	Apparent Power Time Aggregation Algorithms
10:00	Ivan Lipták, Kamil Jaššo	Modernization of a Legacy Photovoltaic System via IoT Integration
10:15	Roman Gura	Program for calculating the resistance of earthing systems
10:30	Martin Kysel'	Compact Redesign and Safety Upgrade of a Bidirectional Power Supply for Flexible Automotive Testing
10:45	Petr Tlustoš, Václav Kaczmarczyk	Software Platform for Home Energy Management Devices

Category: M5 – Power Electronics, Electrical Machines and Thermal Analysis

Room: SC4.81

Chairman: doc. Pavel Vorel, Ph.D

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Dušan Benda (Thermo Fisher Scientific Brno s.r.o.)

Time	Authors	Title
9:00	Vladimír Mikluš, Jaroslav Čejka	Electro-Thermal Characterization of Plasma-Sprayed TiO2 Heating Layers by Time-Resolved Infrared Thermography
9:15	Michal Koreň, Karolína Fůsková, Jiří Šperka, Kateřina Polášková, Lenka Zajíčková	High speed Camera Imaging Openair Plasma Atmospheric Rotary Jet at Various Air Flows
9:30	Marek Karlicek	Advanced Topologies of Drivers for Piezoelectric Actuators: Comparative Analysis of Linear and GaN Switched Amplifiers
9:45	Jan Filip Staněk, Jakub Súkeník	CFD-Based Flow Models in Electrical Machines Using Analytical and Experimental Methods
10:00	Hernan Alonso Bravo Urrea	Influence of Rotor Flux Barrier Geometry on Torque Ripple in a Synchronous Reluctance Motor for Electric Vehicle Applications
10:15	Ondřej Pavlásek, Marek Toman	Modeling of Selected Thermal Phenomena in Electrical Machines
10:30	Jan Gadas	Modular High-Power Electronic Load
10:45	Matěj Hőhn, Marek Toman	Using Ansys Motor-CAD Software for Analyzing Asynchronous Motors
11:00	Radim Vancl, Michal Husák	Thermal System Modeling and Validation

Category: M6 – Intelligent Systems and Cybersecurity

Room: SC7.53

Chairman: doc. Ing. Jan Jeřábek, Ph.D.

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Committee members: Ing. Viet Anh Phan

Ing. Filip Wagner

Zdeněk Záděra (NXP Semiconductors Czech Republic s.r.o.)

Time	Authors	Title
9:00	Róbert Ruman, Viet Anh Phan	Design and Implementation of a Framework for Automatic Generation of Attack Graphs Using Open Sources
9:15	Jan Havlín, Adam Fridrich, Tomáš Lieskovan, Patrik Dobiáš, Jan Hajný	Post-Quantum Encryption on FPGA Platform: Czech-Estonian Pilot
9:30	Jiří Hrachovina, Sara Ricci	Post-Quantum Migration of the EST Protocol: Evaluation on Constrained Microcontrollers
9:45	Joshua Nwokoye, Adrián Tomašov	Real-Time Unsupervised Anomaly Detection in State of Polarization for Optic Fiber Security
10:00	Jakub Jančí	Biometric-Based Electronic Safety Locking System for Small Arms
10:15	Vojtěch Hroch	RFID tag orientation estimation using machine learning method

Category: D1 – Biomedical Engineering

Room: SE4.166

Chairman: Ing. Jiří Chmelík, Ph.D.

Vice-chairman: Sudeep Roy, Ph.D.

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Committee members: Ing. Martin Mézl, Ph.D.

Ing. Pavel Kaspar, Ph.D.

doc. Mgr. et Mgr. Rashid Dallaev, Ph.D.

Time	Authors	Title
13:00	Inna Zumberg, Johannes Jun Wei Low, Anna Taubenberger, Vratislav Cmiel	A PDMS stopper-based cell migration assay as an alternative to the Scratch assay
13:15	Romana Ščotková, Matyáš Dostalík, Zdenka Fohlerová	Electroactive Double-Layer Janus Biohybrid Hydrogel for Cardiac Tissue Engineering
13:30	Ali Hamza, Martin Mezl	Mask-Conditioned Latent Diffusion Model for Synthetic Breast Ultrasound Image Generation: Comparison with Conditional GAN on the BUSI Dataset
13:45	Madeleine Alabdah, Roman Jakubíček	Multi-Modal Prediction of Breast Cancer Recurrence Using Clinical and Radiomic Features from DCE MRI
14:00	Kateřina Krejčí, Michal Nohel, Jiří Chmelík, Roman Jakubíček, Jan Valošek	Segmentation of Cervical Spinal Rootlets in MRI Scans of Patients with Cord Compression
14:15	Ondrej Lengal, Yongchen Rao, Jiri Haze	The Feasibility Study of Designing a Small Implantable Medical Device Using Thermoelectric Generator as Power Source

Category: D2 – Audio, Speech and Language Processing

Room: SE6.121

Chairman: Ing. Jiří Přinosil, Ph.D.

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Ing. Matěj Ištváněk, Ph.D.

Ing. Jan Dorazil, Ph.D.

Time	Authors	Title
13:00	Krystof Novotny, Richard Ladislav	A Pilot Study on Speech and Handwriting Multimodal Fusion Analysis in Prodromal Dementia with Lewy Bodies
13:15	Peter Balušík	Acceleration of Spectrogram Inpainting by Support Restriction
13:30	Michal Švento	Audio Inpainting with Endless Sounds
13:45	Matej Liska	Defect-Aware Approach to Validation of MEMS Microphones in Spherical Arrays
14:00	David Leitgeb	Gray-Box Modeling of Flanger Effect
14:15	Šimon Skvaril	Low-Frequency Sound Absorption Using a Shunted Loudspeaker Coupled with a Helmholtz Resonator
14:30	Benjamin Nimmerrichter, Václav Bařinka	Real-Time Approximation of Parametric Nonlinear Inertial Audio Effects Using Temporal Convolutional Networks
14:45	Vojtěch Kovanda	Simultaneous Reconstruction of Quantized and Downsampled Audio Signals

Category: D3 – Communication, Networked Systems and IoT

Room: SC3.62

Chairman: doc. Ing. Petr Mlýnek, Ph.D.

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Ing. Lukáš Beneš, Ph.D.

Jan Kovalský (Renasas Design Czech s.r.o.)

Time	Authors	Title
13:00	Antonín Boháčik, Tomáš Hadwiger	An Emulation-Based Builder for Virtual Substation
13:15	Alzbeta Kostelanska, Petr Mlynek, Lukas Benesl	Custom Multi-RCAT Platform for Communication Testing in Small-Scale PV Networks
13:30	Pavel Palurik, Antonin Cerny, Juraj Goryl, Dmitri Moltchanov, Thao Dinh Le, Radim Dvorak, Pavel Masek, Petr Cika, Zdenek Hadas	Design and Implementation of a Modular IoT Gateway for Heterogeneous Networks
13:45	Radim Dvořák, Pavel Paluřík, Thao Le Dinh, Dmitri Moltchanov	The Impact of Over-the-Air Updates on Cellular IoT Systems Performance
14:00	Martin Kousal, Roman Maršálek	Cognitive Radio implementation using GNU Radio
14:15	Martin Rosa, Radim Burget, Anzhelika Mezina	NetworkMAS: A multi-agent LLM approach to configuration error detection in network devices
14:30	Silvestr Vaculovič, Jakub Arm	Mapping a Machine to RAMI 4.0 Framework: A Case Study

Category: D4 – Cybersecurity, Cryptography and Secure Hardware

Room: SC7.53

Chairman: doc. Ing. Radek Fujdiak, Ph.D.

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Ing. David Kohout

Jan Churý (E.ON Česká republika, s.r.o.)

Time	Authors	Title
13:00	Willi Lazarov, Roman Klampar, Zdenek Martinasek	Interactive Graph-based Environment for Open Source Intelligence
13:15	Viet Anh Phan, Jan Jerabek	ML-Driven Real-Time In-Network Anomaly Detection on P4-Programmable Switches
13:30	Patrik Dobias, Lukas Malina	Message Recovery Attack on ML-KEM
13:45	Ondrej Klicnik, Patrik Dobias, Jan Bukovsky, Tomas Horvath, Petr Munster	Quantum Key Distribution Integrated with Crypto-Agile Encryption on a Coherent Optical Transmission System
14:00	Ondrej Dohnal, Jan Jerabek	Reverse IP-Based Web Application Enumeration Using Open-Source Intelligence
14:15	Minh Tran, Petr Dzurenda	Security Gaps and Post-Quantum Signing in the European Digital Identity Wallet
14:30	Filip Wagner	Transitioning to Post-quantum Cryptography in Wireless Mobile Networks
14:45	Petr Mrázek, Jan Schilhab, Alexandr Matějka, Adam Šlechta	High-Throughput Hardware Implementation of a Pipelined AES S-Box Optimized for Masked Architectures

Category: D5 – Microelectronics, Sensors and Measurement Hardware

Room: SA4.37

Chairman: doc. Ing. Jiří Háze, Ph.D.

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Ing. Ondřej Gotfrýd, Ph.D. (Garrett Motion Czech Republic s.r.o.)

Time	Authors	Title
13:00	Jan Schilhab, Alexandr Matějka, Petr Mrázek, Adam Šlechta	A Novel Self-Biased Current Reference for Ultra Low-Voltage Operation in 22 nm CMOS
13:15	Adam Šlechta, Jan Schilhab, Alexandr Matějka, Petr Mrázek	Design of LIN driver Using compensated DA converter for output signal edge shaping to achieve low EMC emission
13:30	Alexandr Matějka, Jan Schilhab, Adam Šlechta, Petr Mrázek	Low Voltage Low Noise Amplifier Design for an Ultrasonic Receiver in Automotive Applications
13:45	Pavel Tomíček, Veronika Junasová	The Method for Rapid Measurement of Gate Oxide TDDDB of Thick SiO ₂ MOSFETs
14:00	Matěj Turinský	Analog front-end for synchronous high-speed partial discharge monitoring system
14:15	Jan Bukovský, Petr Münster	Analysis of Phase Jumps in Phase-Based Distributed Acoustic Sensing Systems: A Comparison of Two DAS Implementations
14:30	Tadeáš Zbožínek, Michal Jelínek, Břetislav Mikel	Optical Bundles for Scintillation Light Transport in High-Dose Applications
14:45	Karolína Fůsková	Emission optical spectrometry of plasma
15:00	Saleh H. Fawaeer	Titanium Nanolayer as a Silicon Diffusion Barrier

Category: D6 – Power Electronics, Electrical Machines and Advanced Materials

Room: SA7.10

Chairman: prof. Ing. Tomáš Kazda, Ph.D.

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Ing. Vojtěch Vetiška (Garrett Motion Czech Republic s.r.o.)

Time	Authors	Title
13:00	Jiří Báňa, David Trochta, Tomáš Kazda	Design and Optimization of a Pre-treatment Line for Li-ion Battery Recycling
13:15	Jaromír Jarušek, Imrich Gablech	Fabrication of electrically conductive thick films using masked stereolithography
13:30	Ngoc Nam Pham, Jan Leuchter	Measurement-Based Parameter Refinement of SPICE Models for SiC Power Diodes in Aircraft
13:45	Martin Šedina, Tomáš Kazda	Mechanical and Thermal Drivers of Capacity Fade: Impact on Cycle Life and Stability
14:00	Antonín Šimek, Jaromír Kotlán, Ondřej Čech, David Trochta, Pavel Čudek, Tomáš Kazda	Preparation of hard carbon derived from waste biomass for use in sodium-ion batteries
14:15	Šimon Chmelař, Lukáš Jablončík, Radim Dvořák	Multi-Criteria Analysis for the Development of Public Electric Vehicle Charging Infrastructure in a Czech Regional City
14:30	Jakub Súkeník, Marek Toman	CFD Simulation of Electrical Machine Frame with Natural Convection: A Comparative Study of Smooth and Finned Cylinder Geometries
14:45	Jakub Rosendorf, Jan Bárta	Design of High Speed Reluctance Electrical Machine with Additively Manufactured Rotor

Category: D7 – Automation, Control and System Modelling

Room: SD3.102

Chairman: doc. Ing. Václav Kaczmarczyk, Ph.D.

Vice-chairman: doc. Ing. Zdeněk Bradáč, Ph.D.

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 Tomáš Mendl (E.ON Česká republika, s.r.o.)**

Time	Authors	Title
13:00	František Rusnák, Jakub Arm	Digitalization of Rubber Waste Grinding utilizing Digital Twin
13:15	Jakub Čelko, Ondřej Skalský	Exploring the Path to Human Driver Anomaly Detection – Proof of Concept
13:30	Albert Mlčoch	Modeling and simulation of thermal processes in industrial furnace model
13:45	Miroslav Kozumplík	Semi-Automated Parameter Identification and Rapid Control Prototyping of a DC Motor Drive Using an STM32 Microcontroller
14:00	Christophe Mouallem	Improving the Design of Bioreactors for Extremophile Cultivation with 3D Printing
14:15	Marie Hartmanová, Josef Diblík	Criteria determining weakly delayed planar linear discrete systems with constant coefficients and two delays
14:30	Lenka Macálková, Josef Diblík	Planar linear differential weakly delayed systems with constant matrices and two delays (one being the double of the first one)
14:45	Marek Sedlařík	Development of a Reduced Order Thermal Model for Real-Time Lithium-ion Battery Storage Simulation
15:00	Vít Šimeček	Fatigue Life Analysis Methods for Vibration Shakers

Category: D8 – Robotics, UAVs and Intelligent Image Processing

Room: SC4.81

Chairman: doc. Ing. Petr Marcoň, Ph.D.

Vice-chairman: prof. Mgr. Pavel Rajmic, Ph.D.

Secretary: Ing. Karel Juřík (karel.jurik@vut.cz)

Committee members: Ing. Ondřej Mokrý, Ph.D.

Lukáš Malý (Thermo Fisher Scientific Brno s.r.o.)

Time	Authors	Title
13:00	Tomáš Zemčík, Lukáš Kratochvíla	Hyperspectral discrimination of inks using Machine Learning techniques: A feasibility study
13:15	Radoslav Macejka, Jan Mikulka	Quantitative Evaluation of Dynamic Image Distortion in Scanning Electron Microscopy using Grid Feature Tracking and Robust Pairing
13:30	Vojtěch Schiller, Anzhelika Mezina, Radim Burget	Semi-Supervised Dual-Stream Segmentation via Context-Sampling and Adjacent Slice Consistency
13:45	Stepan Jezek, Daniel Duraj, Radim Burget	Zero-Shot Traffic Accident Detection in Urban Surveillance Video Using Large Vision-Language Models
14:00	Michaela Hečková, Petr Vašš	Bee Hive Acoustic Analysis for Feature Extraction and Reduction for Effective Training
14:15	Patrik Jozefovič, Matuš Kavec	Design and optimization of lightweight neural network for real-time fault detection on resource-constrained microcontrollers
14:30	Miloš Cihlář	Orpheus XAI: Autonomous Navigation and Immersive VR Telepresence for a Military-Grade Unmanned Ground Vehicle
14:45	Jan Čtvrtníček	Comparative Analysis of Fitness Functions in Coverage Path Planning
15:00	Šimon Prokop, Pavel Mužík	Performance Evaluation of an Open-Source FPV Camera System for UAV Applications

Category: SS – Interdisciplinary Student Projects

Room: SD4.111

Chairman: doc. Ing. Jan Bárta, Ph.D.

Vice-chairman: doc. Ing. Petr Drexler, Ph.D.

Secretary: doc. Ing. David Kubánek, Ph.D. (kubanek@vut.cz)

**Committee members: Eliška Hliničanová (Thermo Fisher Scientific Brno s.r.o.)
 Tomáš Pokorný (VALEO AUTOKLIMATIZACE k.s.)**

Time	Authors	Title
13:00	Jan Staněk, Jiří Kratochvíla	Effect of Diffusion Time on In Vivo Diffusion MRI
13:15	František Vaněk, Jiří Kratochvíla	Implementation of Microvascular Architecture Estimation Using Magnetic Resonance Imaging
13:30	Simona Havelkova, Willi Lazarov	Systematic Evaluation of Static Application Security Testing Tools
13:45	Jan Kopeček	Visualizing the humidity distribution
14:00	Jan Buchta	Signals from PVDF piezoelectric sensors measured by oscilloscope and ESP-32
14:15	Ondřej Marek, Oliver Beer	AI-Powered VTOL UAV for Search and Rescue Operations