

WANT TO KNOW MORE?



48th INTERNATIONAL SPRING SEMINAR ON ELECTRONICS TECHNOLOGY

DETAILED CONFERENCE PROGRAM

Wednesday, 14th of May

14:00	Arrival, registration, and accommodation	Location: IBIS & TRIBE Hotel
19:00	Welcome Reception, Dinner	Location: TRIBE Cloud IX Skybar
21:00	Steering Committee meeting	Location: TRIBE Blue Corner

Thursday, 15th of May

08:30	Opening session of ISSE 2025	Location: TRIBE Arena
	Welcome speech from the organizers Oliver Krammer, Attila Geczy	
08:45	Oral session I chaired by: O. Krammer and A. Geczy	Location: TRIBE Arena
KN01	The APECS pilot line is powering the evolution of chiplet technologies Rolf Aschenbrenner (Fraunhofer IZM, Berlin)	
KN02	Sustainable electronics: what kind of sustainability? Pascal Xavier (Grenoble Alps University)	
S01	Metrology and Inspection Method Advancements Driven by the Advanced Packaging Market Orsolya Keri (Semilab, Budapest)	
A13	Low Temperature Soldering (LTS) in the Electronics Industry: a Brief Review Balazs Illes (Budapest University of Technology and Economics)	
A20	A technological Study examining the Implementation of sub-15 μm Finelines using photoimageable thick-film Pastes on Low Temperature Cofired Ceramics Uwe Ziegler (TU Ilmenau)	
10:45	Coffee break Sponsored by Balluff	
11:00	Oral session II chaired by: K. Nieweglowski and B. Illes	Location: TRIBE Arena
KN03	Open-Source Educational Tools, past, present, future David J. Cuartielles Ruiz (Malmo University, Arduino)	
A93	Multi-material Additive Manufacturing of Electronic Circuits Combining ARBURG Plastic Freeforming Technology with Molten Metal Printing Daniel Straubinger (Hahn-Schickard)	
A52	Investigation of PEDOT:PSS/Bismuth Telluride Composite for Flexible Thermocouples Karol Rauch (Wroclaw University of Science and Technology)	

A30	Microstructural evolution of Sn-Cu Based Bi Alloyed Lead-free Solder at Low Cooling Rate Bela Bodi (Obuda University)	
13:00	Lunch	Location: TRIBE Restaurant
14:00	Poster session I chaired by: P. Xavier and D. Cuartielles	Location: TRIBE Arena & Dome
A07	Dielectric Properties of BaFe12O19 Doped with SiO2 in the Low Frequency Region Stanko Aleksic (Institute of Nuclear Sciences Vinca Belgrade)	
A28	Novel Ceramic-Polymer Composite for Stereolithography with Enhanced Thermal Conductivity Petr Vesely (Czech Technical University in Prague)	
A42	Fabrication of Piezoelectric Composite Polymers Using Stereolithography Jaroslav Pazourek (Czech Technical University in Prague)	
A49	Synergistic Use of 3D Printing and Electrochemical Plating to Produce Electrical Discharge Machining Electrodes Radek Tucek (Czech Technical University in Prague)	
A55	Additively Manufactured Electronic Circuits from Polymer Pastes Jonas Uricar (Czech Technical University in Prague)	
A100	Investigating the Mechanical Behaviour of Biodegradable Substrates Patrik Kovács (Budapest University of Technology and Economics)	
A102	Lifetime Dependent Behaviour of Sulphite Gold Electrolyte Evelyn Napetschnig (Infineon Technologies Austria AG)	
F10	Biodegradable Sensors for Timber Construction Monitoring Daniel Kranz (University of Applied Sciences Dresden)	
F26	3D Printed Circuit Boards from Recycled Plastics: Conductive Pattern Properties Jakub Zdrahal (Czech Technical University in Prague)	
F41	Ultrasonic-Assisted Electrode Material Separation: Towards Industrial Applications Anna Prazanova (Czech Technical University in Prague)	
F79	A Sustainable Temperature Monitoring System Powered by Solar Cells and Supercapacitors Marius Mares (University POLITEHNICA of Bucharest)	
F95	Soil degradation of sustainable PCB substrates in natural and controlled environments Csaba Farkas (Budapest University of Technology and Economics)	
F101	Current carrying capacity of PCB traces on PLA/Flax biodegradable substrates Adam Csapody (Budapest University of Technology and Economics)	
F113	Effect of Water Absorption on the Low-Frequency Dielectric Properties of Biodegradable PLA/Flax PCB Substrates Zoltan Adam Tamus (Budapest University of Technology and Economics)	
15:45	Coffee break Sponsored by Balluff	
16:00	Oral session III chaired by: D. Busek and K. Dusek	Location: TRIBE Arena
KN04	Chiplets 1960-2030; Where We've Been & Where We're Going! Charles E. Bauer (TechLead Corporation)	
C50	Investigation of the Solder Thickness Effect on the Propagation Properties of Reactive Multilayer Systems Nesrine Jaziri (TU Ilmenau)	
C68	Ultrasonic Bonding of AlCu Wire – An Advance to Reliable Interconnects for Power Modules Chun-Hao Chen (National Yang Ming Chiao Tung University)	
17:15	Poster session II chaired by: F. Steiner and J. Nicolics	Location: TRIBE Arena & Dome
B31	Study on Thermal Management Systems for Li-ion Cell Batteries Mirela Olteanu (Technical University of Cluj-Napoca)	
B72	Battery Preconditioning Methods for Electric Vehicles in Cold Climates: A Comparative Review Adelina Ilies (Technical University of Cluj-Napoca)	
B77	Study on the Impact of Component Placement on the Thermal Performance of a Power Electronic Board Alexandra Fodor (Technical University of Cluj-Napoca)	
B78	Influence of the Solder Joint Thermal Resistance on Thermal Performance of Power MOSFETs Adrian Pietruszka (Gdynia Maritime University)	

C27	A Study on Stretchable Electrical Contacting Techniques for Embedded Chip Components Victoria Constance Kost (TU Dresden)
C51	Advancements in Miniaturization of High-aspect Ratio Through Ceramic Microvias (TCμV) for High-Density Interconnect LTCC Interposer Nesrine Jaziri (TU Ilmenau)
C67	Reactive Bonding by the use of Nanolayer Stacks on LTCC Substrates Steffen Wiese (Saarland University)
C109	Development of a New Ceramic Package Design for Special Applications Pavel Kopriva (Brno University of Technology)
C118	Innovative Solutions for the Development of High-Performance ADS-B Receivers Vlad Hociung (University POLITEHNICA of Bucharest)
E02	Modeling Electrochemical Migration of Sn-9Zn: Insights from Finite Difference and Finite Element Methods Ali Dayoub (Budapest University of Technology and Economics)
E22	The AIoT Infection Prediction in Vine Using Meteorological Condition Mihaela Hnatiuc (Constanta Maritime University)
E34	A Comparative Study of Short-Term Load Forecasting Methods for Improved Energy Management in Microgrids with Battery Storage Patarau Toma (Technical University of Cluj-Napoca)
E46	Modeling and Analyzing Copper Dendrite Growth during Electrochemical Migration Using Monte Carlo Simulation Ali Gharaibeh (Budapest University of Technology and Economics)
E54	Induction Motor Impedance Estimation Based on the Compressed Sensing Approach Ondrej Kovac (Technical University of Kosice)
E69	Hardware in the Loop Simulation for Renewable Energy Resources Nicolae Sarbu (Technical University of Cluj-Napoca)
E70	Deployed Synthetic Lithium-Ion Battery for Improving Battery Diagnosis Eliza Olariu (Technical University of Cluj-Napoca)
E99	Magnetic Field Influence on the Content of Steroidal Glycoalkaloids and Derivatives under Drought Conditions in Tomatoes Mirjana Damnjanovic (University of Novi Sad)
19:00	Dinner Location: TRIBE Restaurant

Friday, 16th of May

08:30	Oral session IV chaired by: P. Lukacs and M. Kisc Location: TRIBE Arena
KN05A KN05B	Long Term Reliability of Light Emitting Diodes Gabor Harsanyi (Budapest University of Technology and Economics) Andras Poppe (Budapest University of Technology and Economics)
KN06	Applications of Discontinuous Metal Thin Films to Electronics Packaging James Morris (Portland State University)
G81	Fabrication of Conductive Contact on Graphene Monolayers via Direct Ink Writing Martin Sorm (University of West Bohemia)
G96	Influence of Fe and Co Nanoparticle Flux Doping on Stress Relaxation Behaviour of Sn-3.5Ag Solder Joints Irina Wodak (TU Wien)
10:30	Coffee break Sponsored by Balluff
10:45	Poster session III chaired by: T. Blecha and A. Pietrikova Location: TRIBE Arena & Dome
I24	The Influence of Mechanical Strain on the Resistance of Thick Layers Printed on Textile Substrates Michalina Gruza (Wroclaw University of Science and Technology)
I29	Comparison of Manufacturing Methods for Skin Hydration Textile Sensor Jan Balaban (University of West Bohemia)
I36	Development of a Capacitive Measurement Setup for a Non-Contact Control System Tobias Tiedje (TU Dresden)
I40	Design and Implementation of a Tensile Testing Machine for Textronics Materials Characterization Afrodyta Daskalakis (Wroclaw University of Science and Technology)

I43	Analysing the Influence of Conductive Layer Morphology on Microwave Field Behaviour Olga Rac-Rumijowska (Wroclaw University of Science and Technology)	
I48	Electrical Characterization of AISiCu-on-AISiTi/TiN Structured Contacts for Schottky Photodiodes Leonor Shala (Fraunhofer IPMS)	
I56	A New Software Defined Radio Communication System Using 256-QAM Radu Gabriel Bozomitu ("Gheorghe Asachi" Technical University of Iasi)	
I58	Enhanced Gas Monitoring for Automated Greenhouses Vlad Veliciu (Technical University of Cluj-Napoca)	
I60	Development of an Intelligent EEG-Based System for Monitoring Environmental Impact on Human Neurophysiology Gombos Andreea (Technical University of Cluj-Napoca)	
I61	Bioimpedance Circuit Simulation for Real-Time Hydration Assessment in Athletic Performance Monitoring Pena Madalina (Technical University of Cluj-Napoca)	
I66	Design and Testing of a Capacitive Sensor for Liquid Level Measurements Andrei Kiss (Technical University of Cluj-Napoca)	
I82	MEMS Accelerometer as a Component for Increasing the Power Cutting Equipment Safety Slavomir Kardos (Technical University of Kosice)	
I87	3-D Printed Galinstan-Based Capacitive Strain Sensor Milica Kistic (University of Novi Sad Novi Sad)	
I89	Precise Positioning System for Autonomous Vehicles and Intelligent Transport Rosen Miletiev (Technical University of Sofia)	
I94	Low-Cost Drone-mounted Frequency-Modulated Continuous Wave Ground Penetrating Radar Mihaela Hnatiuc (Constanta Maritime University)	
I98	Development of Fully Elastic Sensor Based on Conductive Hydrogel for Mechanical Multi-Deformation Sensing Milica Kistic (University of Novi Sad)	
I117	Pectin-based Impedance Humidity Sensor Patrycja Suchorska-Wozniak (Wroclaw University of Science and Technology)	
I119	Respiratory Monitoring with Silicon Nanowires Rebeka Kiss (University of Debrecen)	
G110	Single Live Cell Assays with Label-free Optical Biosensor for the Development of Diagnostic Methods Igor Sallai (Budapest University of Technology and Economics)	
F108	Enhancing the Manufacturability of Biodegradable PLA/Flax PCB Assemblies Through Design Optimization Gergo Havellant (Budapest University of Technology and Economics)	
13:00	Lunch	Location: TRIBE Restaurant
14:00	Oral session V chaired by: P. Markowski and G. Harsanyi	Location: TRIBE Arena
B80	Comparative Study of Layout Effects on Thermal Management in PCB Hot-Plate Vlad Cristescu (Technical University of Cluj-Napoca)	
E45	Simulation of Temperature Distribution in Large-Area Joints in Power Electronics Peter Nemergut (Technical University of Kosice)	
F83	Power Electronics Solar Inverter on a Biosourced and Biodegradable Substrate – Thermal Study Vincent Grennerat (University Grenoble Alpes)	
I14	AI-enhanced and automated indirect process monitoring at the sensor edge Maedeh Nobari (Fraunhofer IPMS)	
15:30	Break	
16:30	Bus Trip from TRIBE to Unicum House and Museum	
17:00	Museum, Cinema and Distillery Visit at Unicum House	Location: Unicum House
19:00	Networking Dinner @ Herb Bar and Museum	Location: Unicum House
21:00	Bus Trip back to TRIBE (21:00, 21:30, 22:00 turns)	

09:00 Poster session IV chaired by: H. Wohlrabe and P. Vesely Location: TRIBE | Arena & Dome

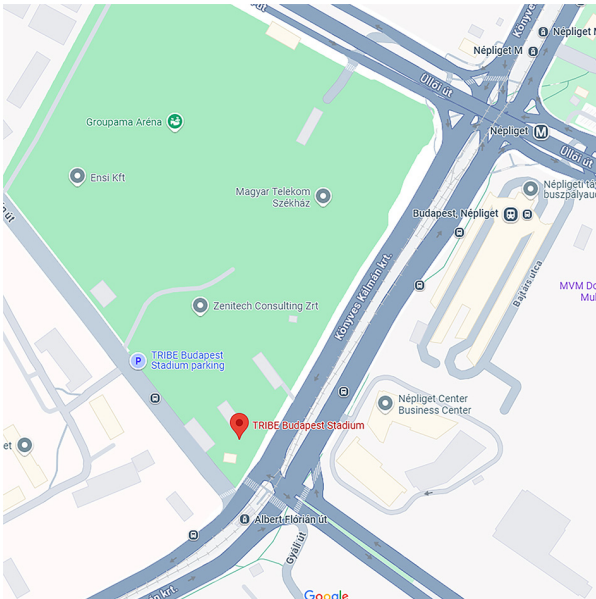
D05	Development of a Low Budget Solar Simulator for Testing the Solar Radiation Effects Martin Hirman (University of West Bohemia)
D12	Fabrication and Experimental Analysis of a Multi-Voltage Level Switching Circuit Gergo Kovacs (Technical University of Cluj-Napoca)
D15	Effect of Fe and Bi Additives on Electrochemical Migration Behavior of SAC105 Marketa Klimtova (Czech Technical University in Prague)
D16	Comparison of Thermal Impacts on Performance of LEDs Considering Lighting Fixture Type Denis Fros (Czech Technical University in Prague)
D19	Design of Analog Front End for Measuring Bioimpedance Miroslav Jusko (Technical University of Košice)
D23	Influence of Stencil Thickness and Surface Finishes of Soldering Pads on the Formation of the Voids Inside Solder Joints Karel Dusek (Czech Technical University in Prague)
D25	Impact of Prepreg Thickness and Thermal Stress on Thermomechanical Behavior of Printed Circuit Board Substrates Daniel Koc (Czech Technical University in Prague)
D38	Study of Dielectric Strength of Ceramic Substrates for Power Electronics Jiri Hlina (University of West Bohemia)
D39	Wetting Balance Test of Tin-Based Solder Alloys: Effect of Oxide Removal on Wetting Performance Iva Kralova (Czech Technical University in Prague)
D44	Mechanical Strength of Aged Solder Joints: Impact of Plasma Treatment Pavel Rous (University of West Bohemia)
D47	Space Charge Accumulation and Measurement Method for Insulation Materials Frantisek Steiner (University of West Bohemia)
D53	Performance Assessment of Commercial MOX Sensors in Elevated Hydrogen and Methane Concentrations Felix Stadermann (TU Dresden)
D63	Investigation of the Solder Fluxes Activity by Measuring of the Contact Angle Daniel Dzivy (Technical University of Kosice)
D65	Modelling the Fault Injection of Sensor Interfaces in Automotive Electronics Nicolae Gross (University POLITEHNICA of Bucharest)
D71	Stability of Embedded Solder Joints' Electrical Resistance Tomas Lenger (Technical University of Kosice)
D74	Characterization of Solder Flux by Synergic Combination of Gas Chromatography Coupled to Mass Spectrometry and Fourier-Transform Infrared Spectroscopy Dominik Pilnaj (Czech Technical University in Prague)
D75	Degradation Mechanisms of LEDs Used in Residential Lighting Bianka Forczek (Budapest University of Technology and Economics)
D76	Stability of Embedded Polymer Thick-film Resistors in 3D Printed Structures Compared to FR4-based PCBs Igor Vehec (Technical University of Kosice)
D86	Underfill Inspection and Testing in Surface Mount Technology: A Review of Diagnostic and Analytic Methods Zbynek Plachy (Czech Technical University in Prague)
D90	Properties of Thin Films on 3D Printed Substrates David Busek (Czech Technical University in Prague)
D114	Investigation of Electromigration in Cu-Sn Interfaces under the Condition of High Current Pulses Irina Wodak (TU Wien)
D116	Seebeck Coefficient Characterisation Using Innovative Set-up for Film Materials Piotr Markowski (Wroclaw University of Science and Technology)
11:00	Coffee break

11:15	Poster session V chaired by: G. Khatibi and B. Mihailescu	Location: TRIBE Arena & Dome
A17	Effect of mechanochemical modification of Ag₂O particles on the electrical properties of Ag layers formed from Ag₂O pastes Alena Pietrikova (Technical University of Kosice)	
A84	Development of Hydrosoluble Substrate with Low Surface Roughness Nora Tarpataki (Budapest University of Technology and Economics)	
F37	Homogeneity Analysis of Ecological Paper-Based Substrates' Dielectric Properties Peter Lukacs (Technical University of Kosice)	
G33	Synthesis, Characterization, and Application of PVDF Thin Film Separator for Supercapacitors Irina Burcea (National University of Science and Technology Politehnica Bucharest)	
G64	Colour Sensitivity on the OLED Smartphone Display Adrian Tulbure ("1 Decembrie 1918" University of Alba Iulia)	
G85	Comparison of Rectangular and Hexagonal Periodic Unit Cells for Modeling Plasmonic Nanoparticle Arrays Rebeka Kovacs (Budapest University of Technology and Economics)	
G107	Optical and Electrochemical Sensing with Gold Nanoparticles Mate Kalman Stift (Budapest University of Technology and Economics)	
H59	Advanced Noise Suppression Techniques in ECG Systems: Combining Right-Leg Drive (RLD) Amplifiers with Digital Signal Processing (DSP) Gombos Andreea (Technical University of Cluj-Napoca)	
H62	Comparison of Signal Integrity Simulation Tools: HyperLynx vs. Keysight ADS on eMMC Interfaces Octavian Axinte (Technical University of Cluj-Napoca)	
H73	Improvement of Over-the-Air Antenna Performance Tests for Electric Vehicle Alternating Current Chargers Rumeyza Tuba Seven Iyison (Ozyegin University)	
H104	Considerations Regarding the Study of EMC Filters Applied to Power Inverters Tudor Bancu (Technical University of Cluj-Napoca)	
H105	Textile-Based Flexible Coaxial Cable with Improved EMC Jan Handrejch (University of West Bohemia)	
J09	Improving Atomic Layer Deposition Process of Silicon Oxide (SiO₂) Long Lei (Fraunhofer IPMS)	
J21	Two-in-one IoT Device for Product Pricing and Inventory Monitoring Rajmond Jano (Technical University of Cluj-Napoca)	
J91	International Collaborative Hands-on Activities on Advanced Electronics and Photonics for Higher Education Using 3D Printing Techniques Krzysztof Niewegłowski (TU Dresden)	
J111	Sustainable Design, Manufacturing and Development of E-transportation Electronics Training in the TRIREME project Balint Medgyes (Budapest University of Technology and Economics)	
13:00	Lunch	Location: Conference Venue
14:00	Oral session VI chaired by: K. Dusek and A. Tulbure	Location: Location: TRIBE Arena
D18	Machine Learning Modelling for Electronic Reliability Analysis in Solder Joints Cristian Garzon Alfonso (University of Florence)	
D103	A Brief Review on Electromigration Behaviours of Solder Joints under Electrothermal Load Zoltan Tafferner (Budapest University of Technology and Economics)	
D115	Effect of Plasma Gas onto Epoxy Mold Compound Adhesion within Heatsink Attach of Power Modules Mario Sprenger (Institute for Factory Automation and Production Systems)	
15:00	Closing ceremony – invitation to ISSE 2026	Location: TRIBE Arena
15:30	Bus Trip from TRIBE to docks	
16:00	Danube Boat Trip w. open bar and snacks	Location: Daube (from Infopark)

18:00	Leaving the boat and walk from docks to University (10 min)	
18:00	Steering Committee Meeting	Location: BME I building IB019
18:30	Arrival at the Gala Dinner, open bar	Location: BME I building main hall
19:00	Quartetto Speranza (concert) and Awarding Session	Location: BME I building IB028
20:00	Dinner	Location: BME I building hall

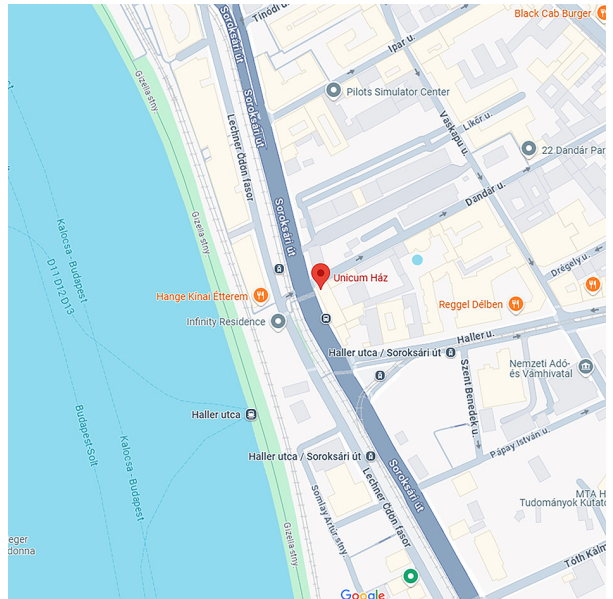
Sunday, 18th of May

09:00	Farewell; End of conference	
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TRIBE AND IBIS STADIUM HOTEL:

47.473064, 19.096126 | N 47°28'23" E 19°5'46.1"
Budapest, Könyves Kálmán krt. 34, H-1097



UNICUM HOUSE:

47.475707, 19.069586 | N 47°28'32.6" E 19°4'10.5"
Budapest, Dandár u. 1, H-1095

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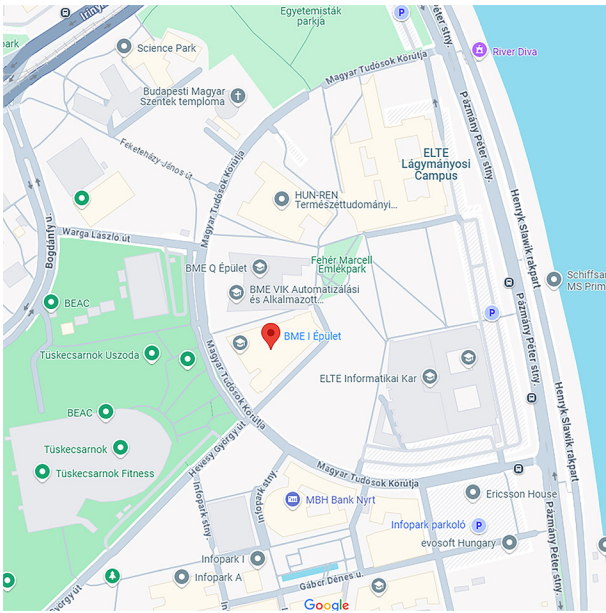
IEEE ELECTRONICS PACKAGING SOCIETY

MAPS

MŰEGYETEM 1782

BMEETT

INTERNATIONAL SPRING SEMINAR ON ELECTRONICS TECHNOLOGY
"Sustainable electronics for a circular economy" | 14th - 18th May 2025 | Budapest, Hungary



BME I Building:

47.472410, 19.059395 | N 47°28'20.7" E 19°3'33.8"
 Budapest, Magyar Tudósok Körútja 2, H-1111



Quartetto Speranza members' chamber music began during their studies at the Liszt Academy of Music. The members won numerous prizes in competitions and consider classical music as their profession. The members are soloists of the Hungarian Radio Symphony Orchestra and Budapest Festival Orchestra. Primarius: G. László Horváth, Violinist: Tamás Szabó, Violist: Gergő Fajd, Cellist: Péter Hány.

HOW TO GET AROUND? -----

TRIBE HOTEL

