

UNIVERSITY “VITEZ”
Faculty of Information Technology
and
POLITEHNICA UNIVERSITY TIMISOARA
Faculty of Engineering Hunedoara

CONFERENCE PROGRAM

Banja Luka, May 2026

14th INTERNATIONAL CONFERENCE ON APPLIED SCIENCES

Supported by

DRVO KLASTER, BANJA LUKA
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CONFERENCE PROGRAM

- online participation -

Saturday, May 30, 2026

TIME (CEST)	ACTIVITY
9:00 -9:15	Pre-Conference Audio-Video Tech Check & Networking
9:15 –10:00	CONFERENCE OPENING
10:00-11:30	Keynote Lectures:
	<p>Assoc. Prof. PhD. Eng. Radovan HOLUBEK Slovak University of Technology in Bratislava, Slovakia</p> <p>VIRTUAL DESIGN AND VALIDATION OF A CONVEYOR - BASED ROBOTIC DEBURRING WORKSTATION USING ABB ROBOTSTUDIO RADOVAN HOLUBEK, DAYNIER ROLANDO DELGADO SOBRINO, PETER KOŠŤÁL, MIRIAM MATÚŠOVÁ, NIKOLAS BLAHUŠIAK</p> <p>DEVELOPMENT AND VALIDATION OF A CUSTOM POSTPROCESSOR FOR SIEMENS NX CAM TARGETING MACH3-BASED CNC MILLING MACHINES NIKOLAS BLAHUŠIAK, RADOVAN HOLUBEK, PETER KOŠŤÁL, DAYNIER ROLANDO DELGADO SOBRINO</p>
	<p>Lect. Dr. Eng. Radu Emanuil PETRUSE Lucian Blaga University of Sibiu, Romania</p> <p>INTEGRATING EXTENDED REALITY INTO MODERN MANUFACTURING: INDUSTRIAL VALUE, AI CONVERGENCE, AND INDUSTRY 5.0 IMPLICATIONS RADU EMANUIL PETRUSE</p>
	<p>Assoc. Prof. PhD. Eng. Habil. Zoltan KORKA Babeş-Bolyai University, Romania</p> <p>ACCURATE ISOLATION OF WINDAGE LOSSES IN HIGH-SPEED ROTATING SYSTEMS: EXPERIMENTAL PROCEDURES AND VALIDATION CRISTINA NINE (ANTON), ZOLTAN-IOSIF KORKA, DORIAN NEDELICU, TIBERIU-DANIEL PAU</p>

**Scientific Parallel Sessions
Saturday, May 30, 2026**

12:00-16:00 CEST
10 minutes / presentation

Speaker
Title
Authors

**SESSION A: COMPUTER &
ELECTRICAL ENGINEERING,
FUNDAMENTAL SCIENCES**

Session Chairs:
Prof. Dr. Eng. Tihomir LATINOVIĆ
Prof. Dr. Eng. Miroslav ROGIC

1.

DRLJAČA Dalibor

**APPLICATION OF ARTIFICIAL INTELLIGENCE IN CONTEMPORARY
AUDIO PRODUCTION: TECHNICAL AND MEDIA-THEORETICAL
ASPECTS**

SINIŠA TOMIĆ, DALIBOR DRLJAČA, OLJA KRČADINAC

2.

IMAMOVIĆ Denijal

**REDEFINING VALUE: THE IMPACT OF AI AND MACHINE LEARNING
ON THE FUTURE OF FINANCE AND ACCOUNTING**

**DENIJAL IMAMOVIĆ, TIHOMIR LATINOVIC, MUZAFER SARAČEVIĆ, MAHIR
ZAJMOVIC**

3.

KAZIC Ishak

**DEVELOPMENT OF AN APPLICATION FOR DATA COLLECTION AND
ANALYSIS FOR EMERGENCY RESPONSE IN ECOLOGICAL CRISIS AREAS
OF BOSNIA AND HERZEGOVINA**

ISHAK KAZIC, BECIR ISAKOVIC

4.

SULEJMANOSKA Remzije

**DATA-DRIVEN ANALYSIS OF STUDENT ENROLLMENT TRENDS USING
MACHINE LEARNING ALGORITHMS: A CASE STUDY OF THE
UNIVERSITY OF TETOVA**

SULEJMANOSKA REMZIJE, FESTIM HALILI, MERIKA K. HALILI

5.

THOLVAY Diana-Maria

**RESEARCH ON THE DEVELOPMENT OF A PLATFORM FOR
EVALUATING THE EFFECTS OF DRUG ADMINISTRATION**

DIANA-MARIA THOLVAY

6.	<i>DURAKOVIC Kenan</i>
	COMPARATIVE ANALYSIS OF SERVERLESS AND VPS ARCHITECTURES IN AI-POWERED WEB APPLICATIONS: AN END-TO-END PERFORMANCE EVALUATION JASNA HAMZABEGOVIC, KENAN DURAKOVIC, AMEL DZANIC
7.	<i>TORNAI Tamás</i>
	COMPARATIVE ANALYSIS OF SERVO CONTROL SYSTEMS USING ETHERCAT AND SERIAL COMMUNICATION TAMÁS TORNAI, LÁSZLÓ GOGOLÁK, IGOR FÜRSTNER
8.	<i>ANGHEL-DRUGĂRIN Cornelia-Victoria</i>
	THE FUTURE PERSPECTIVES OF RENEWABLES ENERGY SECTOR IN ROMANIA CORNELIA-VICTORIA ANGHEL-DRUGĂRIN, CRISTIAN PAUL CHIONCEL
9.	<i>KRUNIĆ Gojko</i>
	NONLINEAR MODELING OF THE DEPENDENCE OF INSTANTANEOUS WIND TURBINE POWER ON WIND SPEED BY APPLYING QUADRATIC REGRESSION ON SCADA DATA GOJKO KRUNIĆ, SRĐAN VASKOVIĆ
10.	<i>SAFTA Claudiu Paul</i>
	FUZZY LOGIC CONTROL SYSTEM FOR IMPROVING THE BRAKING OF FREIGHT RAILWAY VEHICLES STELA RUSU-ANGHEL, ALEXANDRU-NICOLAE RUSU, CLAUDIU PAUL SAFTA, ARIS-CIPRIAN BISTRIAN
11.	<i>ZILAHY Dalma</i>
	ACCEPTANCE OF SELF-DRIVING ROBOTIC CARS DALMA ZILAHY, GYULA MESTER, ZARAND MESTER ZILAHY
12.	<i>MESTER Gyula</i>
	2026 RANKING OF ARTIFICIAL INTELLIGENCE RESEARCHERS IN SERBIA GYULA MESTER
13.	<i>SANTA Janos</i>
	IMPROVING SIX SIGMA METHODOLOGY WITH ARTIFICIAL INTELLIGENCE JANOS SANTA
14.	<i>ARKHYPOVA Liudmyla</i>
	IHA-RVA ANALYSIS OF THE IMPACTS OF CLIMATE CHANGE ON THE NATURAL WATER SUPPLY OF THE UKRAINIAN CARPATHIA LIUDMYLA ARKHYPOVA, KHRYSTYNA MATIYIV, MARTA KORCHEMLYUK, VASYL SHEKETA, MARIIA PIKH

15.	<i>MARYNCHAK Liliya</i>
	AN ANALYTICAL FRAMEWORK FOR MONITORING THE ENERGY SECURITY OF UKRAINE'S ECONOMY ULIANA ANDRUSIV, LILIYA MARYNCHAK, OLGA KNEYSLER, NATALIJA SPASIV, NAZARIY POPADYNETS
16.	<i>HELLEL Djamilia</i>
	DFT INVESTIGATION OF REGIOSELECTIVITY IN HETERO DIELS–ALDER CYCLOADDITIONS DJAMILIA HELLEL, HADJER AOUISSI, FOUAD CHAFAA, LAZHAR BOUGHANI, ABDELMALEK KHORIEF NACEREDDINE, EMMANUEL VRANCKEN
17.	<i>KRYKHIVSKA Natalia</i>
	A QUANTITATIVE FRAMEWORK FOR ASSESSING CO2 TAX ADEQUACY BASED ON MONETIZED CARBON DAMAGE: EVIDENCE FROM UKRAINE NATALIJA KRYKHIVSKA, OLEKSANDRA ROMASHKO
18.	<i>POLYANSKA Alla</i>
	INTEGRATED ECONOMIC-LOGISTICS MODEL FOR OPTIMIZING SMART GRID INFRASTRUCTURE DEPLOYMENT IN URBAN ENERGY SYSTEMS ALLA POLYANSKA, TETIANA POPOVA, KHRYSTYNA MYCHAILYSHYN
19.	<i>PASZEK Krzysztof</i>
	GEODETC INVENTORY OF AN EXISTING BUILDING AS AN IMPORTANT ELEMENT OF ITS FURTHER EXPANSION KRZYSZTOF PASZEK, JUSTYNA PASZEK
20.	<i>PASZEK Krzysztof</i>
	THE SLOPES OF THE MINING AREA AND THE INCLINATIONS OF THE BUILDINGS LOCATED ON IT - AN ATTEMPT TO DETERMINE THE RELATION KRZYSZTOF PASZEK, JUSTYNA PASZEK
21.	<i>DAŠIĆ Predrag</i>
	TOTAL QUALITY MANAGEMENT (TQM): BIBLIOMETRIC AND CITATION ANALYSIS BASED ON WoS AND SCOPUS SNEŽANA TOPALović, PREDRAG DAŠIĆ, GYULA MESTER

Scientific Parallel Sessions Saturday, May 30, 2026

12:00-16:00 CEST 10 minutes / presentation	<i>Speaker</i> Title Authors	SESSION B: MECHANICAL ENGINEERING
		Session Chairs: Prof. Dr. Eng. Peter KOŠŤÁL Lect. Dr. Fiz. MSc. Eng. Daniela Delia ALIC
1.	<i>GHERA Cristian</i>	
	ANALYSIS OF DIFFERENCES BETWEEN THE RESISTANCES OF SOME ALUMINUM ALLOYS TO CAVITATION EROSION LAVINIA-MADALINA MICU, ILARE BORDEASU, CLAUDIA-AMALIA CIUREL, CRISTIAN GHERA, CORNELIA-LAURASALCIANU, ALEXANDRU-NICOLAE LUCA, MARIA-ALEXANDRA PASCA, DANIEL-CATALIN STROITA, DORIN BORDEASU	
2.	<i>OLIERIU Sorin-Ionel</i>	
	DESIGN AND EXPERIMENTAL VALIDATION OF INNOVATIVE LIFTING LUGS FOR DOCK LEVELER HANDLING BOGDAN-DOREL CIOROAGĂ, ADRIAN-AMADEUS OPREA, ANDREI-EMANUEL ANCUȚA, MARIUS ARDELEAN, SORIN-IONEL OLIERIU, VASILE GEORGE CIOATĂ	
3.	<i>ISLAMOVIĆ ČAVKIĆ Belma</i>	
	FEM-BASED ANALYSIS OF THE STRESS–STRAIN STATE OF A PRESSURE VESSEL WITH AN INTEGRATED SPIRAL HEATING AND COOLING SYSTEM ERMIN BAJRAMOVIĆ, FADIL ISLAMOVIĆ, BELMA ISLAMOVIĆ ČAVKIĆ	
4.	<i>SIMIJDEAN Mirela</i>	
	DIGITAL TRANSFORMATION IN ROMANIAN COMPANIES: EMPLOYEES' PERCEPTION AND IMPLEMENTATION LEVEL MIRELA SIMIJDEAN, ELENA-BIANCA NEGOMIREANU, MIHAI DRAGOMIR	
5.	<i>PINCA-BRETOTEAN Alexandru-Mihai</i>	
	COMPARATIVE ANALYSIS OF CAM STRATEGIES FOR CNC MACHINING OF A COMPLEX MECHANICAL PART ALEXANDRU-MIHAI PINCA-BRETOTEAN, ADRIAN BUT, COSMIN PREDĂ	

6.	<i>MARZAŁKOWSKI Adrian</i>
	ASSESSMENT OF ENVIRONMENTAL IMPACT OF PV INSTALLATION CONSIDERING DIFFERENT END-OF-LIFE SCENARIOS ADRIAN MARZAŁKOWSKI
7.	<i>ROMCEA Mario-Robert</i>
	THE PROTOTYPE OF A CALORIMETER DESIGNED TO MEASURE THE SPECIFIC HEAT CAPACITY OF SMALL LIQUID SAMPLES MARIO-ROBERT ROMCEA, VIRGIL STOICA, FLORIANA D. STOIAN
8.	<i>ROTNICKI B.</i>
	DESIGN AND STRUCTURAL ANALYSIS OF A NEW GREEN MASS SPREADER WITH A DIVIDED WORKING UNIT Ł. GIERZ, B. ROTNICKI, D. DOLIŃSKI, V. ZUBKO
9.	<i>KHVOROST T.</i>
	DESIGN OF AN IN-FURROW INOCULATION MODULE FOR ROW CROP PLANTERS– CASE STUDY: ELVORTI VEGA 8 PROFI ROW SEEDER Ł. GIERZ, M. SHELEST, V. ZUBKO, O. BILOVOD, T. KHVOROST, O. PANKOVA, O. SUKHANOV
10.	<i>KOPEI Volodymyr</i>
	PROFILING OF PRECISION CUTTERS FOR THE MANUFACTURE OF SCREW PARTS WITH A LARGE PITCH VOLODYMYR KOPEI, OLEH ONYSKO, LIUBOMYR BORUSHCHAK, ANATOLII VERKALETS, TARAS HOLYK
11.	<i>RĂDUCA Roberta</i>
	MECHANICAL INVESTIGATION OF SELECTED TRADITIONAL TIMBER ROOF SYSTEMS FROM BANAT ROBERTA RĂDUCA, ZENO-IOȘIF PRAISACH, MIHAELA MOLNAR, CORNEL HAȚIEGAN
12.	<i>TODIĆ Mladen</i>
	ARTIFICIAL INTELLIGENCE AND THE SAFETY OF USING LPG FROM SMALL BOTTLES MLADEN TODIĆ, TIHOMIR LATINOVIĆ, BILJANA VRANJEŠ, ALEKSANDAR MAJSTOROVIĆ
13.	<i>PROCHASKA Biljana</i>
	MODELING OF THERMOMECHANICAL STRESSES IN THE MAIN SPINDLE ASSEMBLY OF HIGH-SPEED MACHINE TOOLS BILJANA PROCHASKA, MILAN ZELJKOVIĆ, SANEL GREDELJ
14.	<i>ŁYKOWSKI Wiktor</i>
	DESIGN AND NUMERICAL ANALYSIS OF A TEST STAND FOR DETERMINING FRICTION COEFFICIENTS OF GRANULAR MATERIALS USING FEA SIMULATIONS WIKTOR ŁYKOWSKI, ŁUKASZ GIERZ

15.	<i>CSOMOS Eliza</i>
	CFD-BASED AERODYNAMIC PERFORMANCE EVALUATION OF THE AIRBUS A300 AIRCRAFT ELIZA CSOMOS, DANIELA ALIC
16.	<i>NEDELUCU Dorian</i>
	AXIBLADE - A PYTHON APPLICATION TO DESIGN AXIAL HYDRAULIC TURBINE BLADES DORIAN NEDELUCU, TIHOMIR LATINOVIC

Scientific Parallel Sessions

Saturday, May 30, 2026

12:00-16:00 CEST 10 minutes / presentation	<i>Speaker</i> Title Authors	SESSION C: MATERIALS ENGINEERING
		Session Chairs: Prof. Dr. Eng. Dorian NEDELCU Assoc. Prof. Dr. Eng. Erika ARDELEAN
1.	<i>HODZIC Damir</i>	
	INFLUENCE OF PROCESS PARAMETERS ON THE TENSILE STRENGTH OF ADDITIVELY MANUFACTURED POLYMER SPECIMENS DAMIR HODZIC, ANES OSMANAGIC, HASAN TALIC	
2.	<i>HASANAGIĆ Redžo</i>	
	TECHNIQUES OF MICROSCOPIC AND SURFACE ANALYSIS FOR MONITORING THE BIOLOGICAL DEGRADATION OF WOOD UNDER OUTDOOR CONDITIONS REDŽO HASANAGIĆ, UMEJR ŠLJIVO, SELMA MUJANIC	
3.	<i>IVAN Rareş-Andrei</i>	
	LOW-COST RAPID MANUFACTURING OF ALUMINUM COMPONENTS USING 3D-PRINTED POLYMER MODELS AND SINGLE-USE MOLDS RAREŞ-ANDREI IVAN, MARIUS POP-CĂLIMANU, COSMIN CODREAN, MARIANA ILIE, VIRGIL STOICA	
4.	<i>ANTIĆ Željka</i>	
	PR³⁺ ACTIVATED NaY₉Si₆O₂₆ NANOPHOSPHORS WITH TUNABLE VISIBLE EMISSION AND HIGH THERMAL STABILITY FOR SOLID-STATE LIGHTNING ŽELJKA ANTIĆ, JOVANA PERIŠA, SANJA KUZMAN, ZORAN RISTIĆ, VLADIMIR PANKRATOV, TATJANA DRAMIĆANIN, MIROSLAV D. DRAMIĆANIN	
5.	<i>EDDAHMANI Oumayma</i>	
	COMPARATIVE ANALYSIS OF THEORETICAL GRAVIMETRIC HYDROGEN STORAGE CAPACITIES IN METALLIC, INTERMETALLIC, AND COMPLEX HYDRIDES O. EDDAHMANI, M. HADHOUD, A. TAHIRI, A. SALI, R. TOUTI	

6.	<i>STEFANOV Stefan</i>
	ULTRAFINE-GRAINED ALUMINIUM ALLOY SHEETS FABRICATED BY ACCUMULATIVE ROLL-BONDING TRCHNIQUE STEFAN STEFANOV
7.	<i>ERDÉLYI Szonya</i>
	TESTING THE MECHANICAL PROPERTIES OF FDM-PRINTED PARTS SZONYA ERDÉLYI, IMRE NÉMEDI, IGOR FÜRSTNER, TAMÁS TORNAI
8.	<i>RUS Florina Stefania</i>
	CARBON–CALCITE COMPOSITE FOAM WITH ENHANCED STRUCTURAL AND FUNCTIONAL PERFORMANCE FLORINA STEFANIA RUS, CRISTINA MOȘOARCĂ, ALEXANDRA BUCUR, ANDREI RACU, BOGDAN TARANU, GEORGE DIMA, NICOLAE BIRSAN, RADU BANICA
9.	<i>ȚOLEA Nick Samuel</i>
	PROTOTYPE THERMAL ENERGY STORAGE SYSTEM BASED ON PHASE-CHANGE MATERIALS RADU BĂNICĂ, MIHAI PETRU MARGHITAS, DAN ROSU, CRISTINA MOȘOARCĂ, DANIEL URSU, STEFANIA RUS, NICK SAMUEL TOLEA, ALEXANDRA IOANA BUCUR, BOGDAN ȚĂRANU, NICOLAE BIRSAN
10.	<i>ȚOLEA Nick Samuel</i>
	DEVELOPMENT OF BIOACTIVE CARBON AEROGELS FOR ANTIBACTERIAL APPLICATIONS CRISTINA MOȘOARCĂ, RADU BĂNICĂ, NICK SAMUEL ȚOLEA, MIRELA IORGA, FLORINA ȘTEFANIA RUS, ALEXANDRA BUCUR, GEORGE DIMA, NICOLAE BIRSAN, BOGDAN-OVIDIU ȚĂRANU
11.	<i>TARANU Bogdan-Ovidiu</i>
	THE ELECTROSYNTHESIS OF HYDROXYAPATITE COATINGS ON TI SUPPORTS USING DIFFERENT VERSIONS OF THE ELECTROCHEMICAL DEPOSITION METHOD ALEXANDRA IOANA BUCUR, BOGDAN-OVIDIU ȚĂRANU, RAUL ALIN BUCUR, FLORINA ȘTEFANIA RUS, RADU BĂNICĂ, CRISTINA MOSOARCA, ANDREI RACU, GEORGE DIMA
12.	<i>MOȘOARCĂ Cristina</i>
	ANTIBACTERIAL BEHAVIOUR OF PR³⁺-DOPED RARE-EARTH COMPOUNDS Y₂SIO₅ AND LA(PO₃)₃ TOWARD ESCHERICHIA COLI CRISTINA MOȘOARCĂ, RADU BĂNICĂ, MIROSLAV DRAMICANIN, ZELKA ANTIĆ, MIRELA IORGA, FLORINA ȘTEFANIA RUS, ALEXANDRA BUCUR, RAUL BUCUR, ANDREI RACU, BOGDAN-OVIDIU ȚĂRANU, GEORGE DIMA, RAMONA VETESI

13.	<i>MOȘOARĂ Cristina</i>
	OPTIMIZATION OF $Y_2SiO_5:PR^{3+}$/PDMS COMPOSITE MEMBRANES FOR GERMICIDAL PERFORMANCE RADU BĂNICĂ, CRISTINA MOȘOARĂ, ZELKA ANTIC, MIROSLAV DRAMIĆANIN, MIRELA IORGA, MIHAI MARGHITAS, FLORINA ȘTEFANIA RUS, ALEXANDRA BUCUR, ALEXANDRA ANA MEDRUȚ, DANIEL URSU, CRISTIAN CASUT, BOGDAN-OVIDIU ȚĂRANU, DAN ROSU, GEORGE DIMA
14.	<i>BUCUR Alexandra Ioana</i>
	THERMAL MODIFICATION OF MARINE SHELL WASTE: A PATHWAY TO FUNCTIONAL CALCIUM-BASED PRODUCTS ALEXANDRA IOANA BUCUR, ANDREI RACU, RADU BĂNICĂ, CRISTINA MOȘOARĂ, FLORINA ȘTEFANIA RUS, GEORGE DIMA, BOGDAN-OVIDIU ȚĂRANU, RAUL ALIN BUCUR
15.	<i>DIMA George-Daniel</i>
	RANDOM FOREST MODEL FOR THE PREDICTION OF OPTICAL PROPERTIES OF PR^{3+}-DOPED LUMINESCENT MATERIALS FOR BACTERICIDAL APPLICATIONS GEORGE-DANIEL DIMA, ANDREI V. RACU, FLORINA ȘTEFANIA RUS, ALEXANDRA IOANA BUCUR, BOGDAN ȚĂRANU, RAUL ALIN BUCUR, CRISTINA MOSOARCA, MIRELA IORGA, ZELKA ANTIC, MIROSLAV DRAMICANIN, MIKHAIL G. BRIK
16.	<i>DIMA George-Daniel</i>
	RAPID SYNTHESIS OF YBO_3 HOST MATERIALS FOR PR^{3+} DOPING RADU BĂNICĂ, GEORGE DIMA, CRISTINA MOȘOARĂ, ZELKA ANTIC, MIROSLAV DRAMICANIN, MIRELA IORGA, MIHAI MARGHITAS, FLORINA ȘTEFANIA RUS, ALEXANDRA BUCUR, RAUL BUCUR, DANIEL URSU, CRISTIAN CASUT, NICOLAE BIRSAN, BOGDAN-OVIDIU ȚĂRANU
17.	<i>RACU Andrei</i>
	UV-C LUMINESCENT MATERIALS BASED ON PR^{3+} UPCONVERSION: EXPERIMENTAL AND DATA-DRIVEN PREDICTION OF 5D ENERGY LEVELS A. V. RACU, G-D. DIMA, A. I. BUCUR, B. ȚĂRANU, R. A. BUCUR, C. MOȘOARĂ, F. Ș. RUS, M. IORGA, Ž. ANTIĆ, M.D. DRAMIĆANIN, M. G. BRIK
18.	<i>BOBORA Adriana</i>
	RECOVERY OF SIDERITIC TAILINGS AS PELLETS IN THE STEEL INDUSTRY ADRIANA BOBORA, ANA SOCALICI, CORNELIU BIRTOK BANEASA
19.	<i>RIF Raluca</i>
	POSSIBILITIES FOR THE VALORIZATION OF STEEL SLAG IN THE STEEL INDUSTRY RALUCA RIF, ANA-VIRGINIA SOCALICI

20.	<i>MIHUȚ Gabriela</i>
	THERMAL PROCESSING INFLUENCE ON THE MECHANICAL PERFORMANCE OF AEROSPACE STEELS GABRIELA MIHUȚ, MARIUS ARDELEAN, ERIKA POPA, EUGEN CRIȘAN
21.	<i>ARDELEAN Marius</i>
	SELECTIVE RECOVERY OF METALS FROM USED PRIMARY BATTERIES THROUGH HYDROMETALLURGICAL PROCESSES CĂTĂLIN ARDELEAN, MARIUS ARDELEAN, LAURA STRUGARIU, ERIKA ARDELEAN

CONFERENCE PROGRAM

Saturday, May 30, 2026

16:00 -18:00
ROUNDTABLE
Applied Sciences