

Day 1 Monday, 30.10.2023 - DB03 (Building D)		Speaker	Title
		Chairs: Jörg Krüger and Yunus Ziya Arslan	
13:45 - 14:15	Reception and Registration		
14:15 - 14:50	Opening of the Conference		
14:15 - 14:20		Welcome adress by Rector Cemal Yıldız	
14:20 - 14:25		Welcome adress by General Coordinator Ferit Küçükay	
14:25 - 14:30		Welcome adress by Vice-Rector Ali Gökhan Yavuz	
14:30 - 14:35		Welcome adress by Dean Yunus Ziya Arslan	
14:35 - 14:50		Welcome adress by Hüseyin Gelis (Siemens)-representating industry	"AI for Engineering" with a focus on industrial challenges related to AI application in industry
14:50 - 18:00	Industry Session	All speakers for the industry session are attending in person.	
14:50 - 15:05	Introduction to "AI for Engineering"	Jörg Krüger (TU Berlin)	
15:05 - 15:20	Industry Session: Impuls Lecture 1	Hakan Mandalı (COO-CTO for BSH Türkiye Ev Aletleri Tic. A.Ş.)	Innovation and productivity impact of digital transformation in operations world
15:20 - 15:35	Industry Session: Impuls Lecture 2	Erdem Alptekin (Director of R&D and IT in Siemens Turkey)	
15:35 - 16:05	Industry Session: Talk 1	Zeynep Gül Koca (Mercedes-Benz Bus R&D Director) Selma Koç (Mercedes-Benz Bus R&D Director) Gökçe Bezmez (IT Director) Ozan Dikerler (Business Analytics)	
16:05 - 16:20	Industry Session: Talk 2	Fahri Eyeci (MAN)	
16:20 - 16:45	Coffee Break		
16:45 - 17:00	Industry Session: Talk 3	Tolga Kuntlu (FESTO, CEO) Fikret Kemal Akyüz (FESTO-Technology management manager)	Artificial intelligence (AI) applications in industry for sustainability and predictive maintenance, pneumatic cylinder monitoring.
17:00 - 17:15	Industry Session: Talk 4	Ceyhan Eren (Director of Allianz Technic & Risk Engineering)	Nat Cat risk management based on artificial intelligence (AI) applications allianz
17:15 - 17:30	Industry Session: Talk 5	Gül Aktaş Kuş (Head of Digital Transformation for Operations, BSH)	AI solutions with focus of traceability and process decision making
17:30 - 18:00	Podium discussion	Moderation by Jörg Krüger	Potentials and challenges of AI in engineering, especially for the industrial application. Expectations from industry concerning the development of competences at TGU as a potential research partner of the companies.
19:00	Dinner at http://filizler.com/		
Day 2 Tuesday, 31.10.2023 - D108 (Building D)		Speaker	Title
Track 1 of 2 parallel Tracks (09:00 - 17:45)			
09:00 - 10:30	Industry Session Part 2	Chair: Jörg Krüger	
09:00 - 09:30	Industry Session Invited Keynote	Şenay İdil (Alp Aviation-General Manager), in person Atilla Ünver (Alp Aviation - IT Director) Ali Özen (Alp Aviation- Technology - Development Manager) Murat Sağlam (Alpata Technology - General Manager) Emrah Taylan (Alpata Technology - Deputy General Manager)	Alp Aviation - A Turkish Aviation Company and it's Technologies and Achievements
09:30 - 09:50	Industry Session talk 1	Erdem Öztürk (Productive Machines), in person	Increasing Roles of Robots in Machining
09:50 - 10:10	Industry Session talk 2	Ömer Ganiyusufoglu, remote	
10:10 - 10:30	Industry Session talk 3	Esther Kieseritzky (Rubitherm GMBH), remote	Efficient Cooling and Heating with Phase Change Materials (PCM)
10:30 - 11:00	Coffee Break		
11:00 - 12:10	Paper Session 1 - (Health Care/ Artificial Intelligence/Machine Learning)	Chair: Ali Gökhan Yavuz	
11:00 - 11:30	Session 1 Invited Keynote	Sebastian Wolf (Heidelberg University), remote	Joint parameter optimization for application in clinical instrumented gait analysis
11:30 - 11:50	Session 1 talk 1	Serdar Ulusoy (Turkish-German University), in person	Optimum Control of Structures with Active Tendons
11:50 - 12:10	Session 1 talk 2	Hilal Denizoglu Külli (Istanbul Atlas University), in person	Is The Kinesiotaping Promote The Joint Torque, Muscular Activity And Cross-Activation?
12:10 - 12:30	Session 1 talk 3	Kerim Atmaca (Turkish-German University), in person	Predicting human body gait by solving tracking optimization problem
12:30 - 14:00	Lunch Break		
14:00 - 15:30	Paper Session 2 - (Health Care/ Artificial Intelligence/Machine Learning)	Chairs: Şafak Gökhan Özkan & Aysu Yarman	
14:00 - 14:30	Session 2 talk 1	Yunus Ziya Arslan (Turkish-German University), in person	How can we benefit from musculoskeletal modeling, simulation, and machine learning in gait analysis of patients with cerebral palsy?
14:30 - 14:50	Session 2 talk 2	Alina Nawab Kidwai (Middle East Technical University), in person	Can musculoskeletal modeling and simulation provide valid muscle force estimates for patients with cerebral palsy?
14:50 - 15:10	Session 2 talk 3	Mustafa Erkam Özateş (Turkish-German University), in person	Prediction of ground reaction forces from joint angles using machine learning
15:10 - 15:30	Session 2 talk 4	Saliha Zeyneb Akıncı (Istanbul Medipol University), in person	Development of a Finite Element Model of the Lumbar Spine
15:30 - 16:00	Coffee Break		
16:00 - 17:45	Paper Session 3 - (Energy Science / Energy Efficiency)	Chairs: Mukden Uğur & Samira F. Kurtoğlu Öztulum	
16:00 - 16:30	Session 3 Invited keynote 1	Niyazi Serdar Sarıçiftci (Linz Institute for Organic Solar Cells (LIOS) Institute for Physical Chemistry Johannes Kepler University of Linz), remote	Solar Energy Conversion into Chemical Fuels Using Organic and Bio-organic Systems
16:30 - 16:55	Session 3 Invited keynote 2	Bilge Saruhan (German Aerospace Center), remote	Energy autarkic sensor systems, miniaturization and structure integrated energy storage systems in satellite and aircraft applications
16:55 - 17:20	Session 3 talk 1	Merja Helena Tölle (University of Kassel), in person	Land-atmosphere interactions with regional climate modeling
17:20 - 17:45	Session 3 talk 2	Osman Sinan Süslü (Turkish-German University), in person	An operating system to control demand side management in a microgrid

Day 2 Tuesday, 31.10.2023 - C108 (Building C)		Speaker	Title
Track 2 of 2 parallel Tracks (09:00 - 17:45)			
09:00 - 10:30	Paper Session 4 - (Automation / Robotics / Control)	Chair: Michael Steinert	
09:00 - 09:30	Session 4 Invited keynote	George Michalos (University of Patras), in person	Autonomy and adaptability in manufacturing - recent advances and tuture trends
09:30 - 09:50	Session 4 talk 1	Hasan Smajic (TH Köln), in person	Application-oriented knowledge transfer from theory to practice for smart automation and virtual product development
09:50 - 10:10	Session 4 talk 2	Mesut Güneş (Otto-von-Guericke University Magdeburg), in person	From wireless sensor networks to digital twins
10:10 - 10:30	Session 4 talk 3	Erdem Onur Özyurt (Turkish German University), in person	Adaptive heat gain estimation for window filming with building models and estimation of reduction in carbon emission for Turkish cities
10:30 - 11:00	Coffee Break		
11:00 - 12:10	Paper Session 5 (Smart City / Traffic Engineering)	Chair: João Ameixa	
11:00 - 11:30	Session 5 - Invited keynote	Fazel Ansari (TU Vienna), remote	A competence-based planning methodology for optimizing human resource allocation in industrial maintenance
11:30 - 11:50	Session 5 talk 1	Mehmet Ali Taş (Turkish-German University), in person	Site planning for wind turbines: A case analysis from Turkey
11:50 - 12:10	Session 5 talk 2	Frank Rackwitz (TU Berlin), remote	Potentials and challenges of digitalization in geotechnics
12:10 - 12:30	Session 5 talk 3	Jörg Raisch (TU Berlin), remote	Efficient consensus in multi-agent systems over wireless communication channels & its use in traffic automation problems
12:30 - 14:00	Lunch Break		
14:00 - 15:30	Paper Session 6 (Material Science)	Chair: Merja Helena Tölle	
14:00 - 14:30	Session 6 - Invited keynote	João Ameixa (University of Potsdam), in person	innoFSPEC transfer lab Potsdam: current projects and future directions
14:30 - 14:50	Session 6 talk 1	Samira Fatma Kurtoglu Öztulum (Turkish German University), in person	Characterization of site-isolated iridium atoms supported on reduced graphene aerogel at an exceptional Ir loading of 23.8 wt% with synchrotron and electron microscopy techniques
14:50 - 15:10	Session 6 talk 2	Çağla Söz (Turkish German University), in person	Nonwetable hybrid paper sheets: Effect of the coating formulation on the surface and barrier properties
15:10 - 15:30	Session 6 talk 3	Erdem Onur Özyurt (Turkish German University), in person	Material classification by investigation of 3D morphological chip attributes using neural networks
15:30 - 16:00	Coffee Break		
16:00 - 17:45	Paper Session 7 (Bio Science)	Chairs: Florian Schweigert & Çağla Söz	
16:00 - 16:30	Session 7 - Invited keynote	Julius Rabi (ETH Zürich), remote	Structural biology: seeing the machinery of life
16:30 - 16:55	Session 7 talk 1	Michael Steinert (Technical University of Braunschweig), in person	Legionella pneumophila pathogenicity in human lung tissue explants and development of anti-infectives
16:55 - 17:20	Session 7 talk 2	Orkide Coşkuner Weber (Turkish German University), in person	Intrinsically disordered proteins and bio-mimicked polymers for soft robotics
17:20 - 17:45	Session 7 talk 3	Aysu Yarman (Turkish German University), in person	Molecular imprinting: A way to fabricate artificial antibodies for SARS-CoV-2 sensing

Day 3 Wednesday, 01.11.2023 - D108 (Building D)		Speaker	Title
09:00 - 10:50	Paper Session 8 - (Artificial Intelligence / Machine Learning)	Chairs: Orkide Coşkuner & Osman Sinan Süslü	
09:00 - 09:30	Session 8 Invited keynote 1	Nanja Li (Nanjing University of Aeronautics & Astronautics, China), remote	Predictive modelling for microwave assisted additive manufacturing of composite materials
09:30 - 10:00	Session 8 Invited keynote 2	Pai Zheng (The Hong Kong Polytechnic University, HKSAR, China), remote	Augmented reality-assisted digital twin for human-centric smart manufacturing: An exploration
10:00 - 10:30	Session 8 Invited keynote 3	Roman Henze (Technical University of Braunschweig), in person	
10:30 - 10:50	Session 8 talk 1	Şafak Gökhan Özkan (Turkish German University), in person	Modern vs conventional mineral processing methods for borates
10:50 - 11:10	Coffee Break		
Wednesday, 01.11.2023 Track 1 of 2 parallel Tracks - D108 (Building D)			
11:10 - 13:10	Paper Session 9 - (Artificial Intelligence / Machine Learning)	Chairs: Serdar Ulusoy & Adil Akgül	
11:10 - 11:40	Session 9 Invited keynote	Yavuz Murtezoğlu (Module Works), remote	CAM software development: Geometric algorithms for manufacturing
11:40 - 12:00	Session 9 talk 1	Erdem Onur Özyurt (Turkish German University), in person	False star filtering and camera motion estimation using an unsupervised learning method with morphological attributes
12:00 - 12:20	Session 9 talk 2	Ali Ömer Baykar (Turkish German University), in person	Comparison of feature detection methods in visual localization
12:20 - 12:50	Session 9 talk 3	Mukden Uğur (Turkish German University), in person	Effects of boron compounds on the electrical properties of polyester samples
12:50 - 13:10	Session 9 talk 4	Arda Çetiner (Turkish German University), in person	Design of an experimental setup for investigating UAV propeller icing
Wednesday, 01.11.2023 Track 2 of 2 parallel Tracks - C108 (Building C)			
11:10 - 13:10	Paper Session 10 - (Artificial Intelligence / Machine Learning)	Chairs: George Michalos & Roman Henze	
11:10 - 11:40	Session 10 Invited Keynote 1	Karsten Berns (University of Kaiserslautern), remote	Human-robot interaction
11:40 - 12:00	Session 10 talk 1	Adil Akgül (Turkish German University), in person	On use of it technologies in wildfire prevention and fighting technologies: A review of current status and future challenges
12:00 - 12:20	Session 10 talk 2	Henning Jürgen Meyer (TU Berlin), remote	Applications of digitalisation in mobile machines
12:20 - 12:50	Session 10 Invited Keynote 2	John Erkoyuncu (Cranfield University), remote	Automation of knowledge extraction for degradation analysis
12:50 - 13:10	Session 10 talk 3	Maximilian Flormann (Technical University of Braunschweig), in person	
13:10 - 13:30	Closing of Conference		