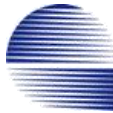




**INTERNATIONAL CONFERENCE on
ELECTRICAL and ELECTRONICS ENGINEERING**
Bursa, Türkiye, November 27-29, 2025

Program Booklet

Organizer



**The Chamber of Turkish
Electrical Engineers**
Bursa Branch



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Faculty of Engineering
Department of Electrical and
Electronics Engineering



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Abbreviations:

Conference Building

BAOB: Bursa Academic Chambers Union, Nilufer/Bursa

Halls

BAOB Hall: BAOB Common Hall

EMO Hall: Chamber of Electrical Engineers Hall

MMO Hall: Chamber of Mechanical Engineers Hall

MO Hall: Chamber of Architects Hall

EMO-S: Chamber of Electrical Engineers Seminar Hall

Topics

EPS: Electric Power Systems

RES: Renewable Energy Sources

EQE: Energy Quality and Efficiency

EMD: Electrical Machines and Drives

PEA: Power Electronics and Applications

EM: Electrical Materials

HVT: High Voltage Techniques

ELE: Electronics

OPT: Optoelectronics

BIOE: Biomedical Electronics

DS: Digital Systems

CS: Circuits and Systems

SIP: Signal and Image Processing

EMW: Electromagnetics, Microwave

AP: Antennas and Propagation

COM: Communication Systems

SENS: Sensors and Instrumentation

CON: Control Systems

MEC: Mechatronics

RAS: Robotics and Autonomous Systems

SSA: Smart System Applications

AI: Artificial Intelligence and its Applications

OTHER: Other Topics

SS1: Special Session 1:

SS2: Special Session 2: Workshop on Scientific Article Writing



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ELECO 2025 Conference Program (1. Day) – 27.11.2025, Thursday

Day	Hours	ELECO 2025
27.11.2025, Thursday	10:00-11:15	Opening Ceremony Burak OZGEN, EMO Bursa Branch Chairman Mahir ULUTAS, Electrical Engineers Chamber (EMO) Chairman Prof. Dr. Ozcan KALENDERLI, Conference Chairman BAOB Auditorium
	11:15-12:00	Session Chair: Assoc. Prof. Oguzhan Ceylan Kadir Has University Invited Talk – 1 Using Large Language Models (LLMs) to Assist Power System Planning and Operations Studies Prof. Kevin TOMSOVIC Clemson University, South Carolina, USA BAOB Auditorium 
	12:00-12:45	Session Chair: Prof. Dr. Oguzhan Cicekoglu Bogazici University Invited Talk – 2 Energy Evaluation for a Dynamic and Reconfigurable Optical Access Networks on a Novel Network Traffic Adaptable Pattern Prof. Mehmet TOYCAN Bahcesehir Cyprus University, Nicosia, Turkish Republic of Northern Cyprus BAOB Auditorium 



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ELECO 2025 Conference Program (1. Day) – 27.11.2025, Thursday

Day	Hours	ELECO 2025	
27.11.2025, Thursday	13:45-15:15	Session 1: EPS-1 Electric Power Systems-1	Session 2: ELE-1 Electronics-1
		Session 3: COM Communication Systems	Session 4: AP-1 Antennas and Propagation-1
		Session 5: AI-1 Artificial Intelligence and Its Applications-1	
	15:45-16:30	Session Chair: Assoc. Prof. Oguzhan Ceylan Kadir Has University Invited Talk – 3 Grid-Forming Control of Power Converters for Energy Systems Decarbonisation Assoc. Prof. Ioana PISICA Brunel University of London, London, United Kingdom BAOB Common Hall	
	17:00-18:30	Session 6: EPS-2 Electric Power Systems-2	Session 7: ELE-2 Electronics-2
		Session 8: RAS-1 Robotics and Autonomous Systems-1	Session 9: AP-2 Antennas and Propagation-2
		Session 10: AI-2 Artificial Intelligence and Its Applications-2	
	18:30-20:00	Opening Cocktail BAOB Auditorium Entrance Hall	





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ELECO 2025 Conference Program (2. Day) – 28.11.2025, Friday

Day	Hours	ELECO 2025	
28.11.2025, Friday	09:00-10:30	Session 11: RES-1 Renewable Energy Sources-1	Session 12: DS+CS Digital Systems + Circuits and Systems
		Session 13: SIP-1 Signal and Image Processing-1	Session 14: PEA-1 Power Electronics and Applications-1
		Session 15: AI-3 Artificial Intelligence and Its Applications-3	
	10:45-11:30	Session Chair: Prof. Dr. Aydogan Ozdemir Kadir Has University Invited Talk – 4 Developing a Framework for Assessment and Optimal Enhancement of Multi-Microgrid Distribution System Reliability Prof. Mahmoud Fotuhi-FIRUZABAD Sharif University of Technology, Tehran, Iran BAOB Common Hall	
	11:45-13:30	Session 16: RES-2 Renewable Energy Sources-2	Session 17: HVT High Voltage Techniques
		Session 18: SIP-2 Signal and Image Processing-2	Session 19: PEA-2 Power Electronics and Applications-2
		Session 20: AI-4 Artificial Intelligence and Its Applications-4	
	14:30-17:30	Social Trips	
	19:30-22:30	Conference Dinner	



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ELECO 2025 Conference Program (3. Day) – 29.11.2025, Saturday

Day	Hours	ELECO 2025	
29.11.2025, Saturday	09:00-10:30	Session 21: RAS-2 Robotics and Autonomous Systems-2	Session 22: EMD-1 Electrical Machines and Drives-1
		Session 23: SIP-3 Signal and Image Processing-3	Session 24: PEA-3 Power Electronics and Applications-3
		Session 25: SS1	
	11:00-12:30	Session 26: SENS Sensors and Instrumentation	Session 27: EMD-2 Electrical Machines and Drives-2
		Session 28: CON-1 Control Systems-1	Session 29: EMW-1 Electromagnetics, Microwave-1
		Session 30: SS2 Workshop on Scientific Article Writing	
	13:30-14:15	Session Chair: Prof. Dr. Aydogan Ozdemir Kadir Has University Invited Talk – 5 Artificial Intelligence for Minute-Scale PV Power Forecasting with Sky Images: Rethinking Labeling, Modeling, and Optimization Approaches Prof. Pavlos S. GEORGILAKIS National Technical University of Athens (NTUA), Athens, Greece BAOB Common Hall	





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ELECO 2025 Conference Program (3. Day) – 29.11.2025, Saturday

Day	Hours	ELECO 2025	
29.11.2025, Saturday	14:45-16:30	Session 31: MEC+SSA Mechatronics+ Smart System Applications	Session 32: EMD-3 Electrical Machines and Drives-3
		Session 33: CON-2 Control Systems-2	Session 34: EMW-2 Electromagnetics, Microwave-2
	16:45-17:30	Session Chair: Prof. Dr. Ozgur Ustun Piri Reis University Invited Talk – 6 New-Generation Z-Source Converters: A Paradigm Shift in Power Conversion Systems Prof. Ebrahim BABAEI University of Tabriz, Tabriz, Iran BAOB Common Hall	
	17:45-19:15	Session 35: SSA-2 Smart System Applications-2	Session 36: EQE Energy Quality and Efficiency
		Session 37: BIOE Biomedical Electronics	Session 38: AI-5 Artificial Intelligence and Its Applications -5
	19:15-19:30	Closing Meeting	





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Date: **27.11.2025, Thursday**

Hours: **11:15-12:00**

Hall: **BAOB Auditorium**

Session: **PS-1**

Subject: **Invited Talk**

Session Chair: Assoc. Prof. **Oguzhan CEYLAN**, Kadir Has University, Istanbul, TR

Invited Talk - 1

**Using Large Language Models (LLMs) to Assist Power
System Planning and Operations Studies**

Prof. Kevin TOMSOVIC

Clemson University, South Carolina, USA



Abstract – Conventional planning and operation studies for integrating new generation depends on labor-intensive time-domain simulations and extensive domain expertise, limiting their scalability and accessibility. For example, in the US, this has led to major backlogs for integrating utility-scale renewable resources into the grid.

This talk will introduce our approach to performing analysis of proposed new power plants using a large language model (LLM) to assist the engineers. By harnessing the learning and data-processing strengths of a domain-specific LLM, this work aims to develop an LLM based framework that rapidly evaluates system security under various load conditions and fault scenarios.

The LLM is trained on a rich body of power system data and literature, including domain knowledge from textbooks and research papers, simulation tools (e.g., ANDES and AMS), other documentation, and practical examples, to perform grid analyses.

Validation is conducted against established simulation tools using standard test systems and real-world data. The outcome is a domain-specific, scalable LLM tool that enhances the grid planning studies, offering a complementary tool for engineers performing grid stability assessment as well as a useful tool for students.

The talk will overview the design and show results of our research to date.



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Date: **27.11.2025, Thursday**

Hours: **12:00-12:45**

Hall: **BAOB Auditorium**

Session: **PS-2**

Subject: **Invited Talk**

Session Chair: Prof. Dr. **Oguzhan CICEKOGLU**, Bogazici University, Istanbul, TR

Invited Talk - 2

**Energy Evaluation for a Dynamic and Reconfigurable
Optical Access Networks on a Novel Network Traffic
Adaptable Pattern**

Prof. Mehmet TOYCAN

**Bahcesehir Cyprus University, Nicosia, Turkish
Republic of Northern Cyprus**



Abstract – Researchers and industry experts are developing 6G wireless networks with higher spectrum efficiency than 5G networks, high peak data rates, low latencies, high network availability, and high reliability. The central office baseband unit (BBU) provides optical front-haul for 5G cloud radio access network (CRAN) data processing cores. On the other hand, remote radio heads (RRHs) at customers' premises allow wireless communication via antenna modules with simplified operations. Additionally, high-capacity optical front-hauls for signal transmission between the BBU (OLT) and RRHs (ONUs) are crucial research goals. Thus, millimetre waves, microwave, point-to-point optical fiber (P2P), and passive optical network (PON) are viable optical front-haul technologies, according to prior studies.

In accordance, dynamic resource allocation, service inconsistency, operational costs, and excess energy/power consumption in optical access networks remain the key challenges for the next generation passive optical network (NG-PON) design and development. Several research papers conducted various energy efficiency approaches and proposed strategies for the reduction of power consumption in PONs for this goal. The two basic classifications of these strategies are hardware-based uses of physical components and algorithmic approaches.

The talk will overview the recent studies on the research area while considering take-up rates, energy efficient operation strategies while considering Poisson distribution-based network traffic model designs.



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Date: **27.11.2025, Thursday**

Hours: **13:45-15:15**

Hall: **BAOB Common Hall**

Session 1: **EPS-1**

Subject: **Electric Power Systems-1**

Session Chair: Prof. Dr. **Kevin TOMSOVIC**, Clemson University, South Carolina, USA

ID 109: Comparative Analysis of Differential and Directional Overcurrent Protection Schemes in a Ring-Structured Microgrid

Ahmet Ertas^{1,2}, Recep Yumurtaci¹

¹Yildiz Technical University, Turkiye

²Siemens Industry and Trade Inc., Turkiye



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ID 47: Evaluation of the Electrical Safety of Low-Voltage Distribution Networks through ATP-EMTP and XGSA-FD Simulations

Zacharias G. Datsios¹, Dimitrios A. Tsiamitros¹,

Dimitrios Stimoniari¹, Nikolaos Lettas²

¹University of Western Macedonia, Greece

²INNORA P.C., Spin-off Co.mpany of the University of Western Macedonia, Greece



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ID 226: An Optimal Phase Overcurrent Protection Based on Synchronous Generator Characteristic Short-Circuit Decrement Curve in Industrial Plants and Micro Grids

Orhan Zengin

Siemens Inc., Turkiye



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ID 235: Effect of Different Normalization Methods on Battery SoC Estimation Performance at the Optimal LSTM Batch Size

Hakan Yuce¹, Hayri Arabaci²

¹Otokar Automotive and Defense Industry, Turkiye

²Selcuk University, Turkiye



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ID 20: An Auxiliary Controller for Grid-Forming Inverters to Improve the Fault and Post-Fault Behavior

Mohammad Derogarian Miandoab¹, Ozan Keysan², Erhan Demirok³

¹Middle East Technical University (METU), Turkiye

²METU Solar Energy Research Center (GUNAM), Turkiye

³Izmir Katip Celebi University, Turkiye



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Date: **27.11.2025, Thursday**

Hours: **13:45-15:15**

Hall: **EMO Hall**

Session 2: **ELE-1**

Subject: **Electronics-1**

Session Chair: Prof. Dr. **Oguzhan CICEKOGLU**, Bogazici University, Istanbul, TR

ID 55: A Low Noise Amplifier for Optical Modulators in 130nm SiGe HBT process

Asyeli Khuanbyek, Ali Tangel, Lutfiye Busra Yurekli
Kocaeli University, Turkiye



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ID 157: A MOSFET Biphasic Stimulator with $\pm 100\mu\text{A}$ Square-Wave Output Current

Bercestey Yilmaz, Amira Tandirovic Gursel
Adana Alparslan Turkes Science and Technology University,
Turkiye



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ID 102: Energy Efficient PCB Etching System Using Arduino-Based Temperature and Airflow Control

Yusuf Kep¹, Onur Demir²
¹Istanbul Esenyurt University, Turkiye
²Ministry of National Education, Turkiye



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ID 218: Nonlinearity Investigation of Contact Area in CMOS n-MOSFETs

Ahmet Faruk Karahan¹, Ahmet Yelboga², Ahmet Alperen Oznam², Korkut Kaan Tokgoz²
¹Ankara Medipol University, Turkiye
²Sabanci University, Turkiye



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ID 101: Design and Comparison of Low-Noise CMOS Pre-Amplifiers for Piezoelectric Sensors in SONAR Applications

Ogun Haddur¹, Serdar Ozoguz²
¹Aselsan, Turkiye
²Istanbul Technical University, Turkiye



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Date: **27.11.2025, Thursday**

Hours: **13:45-15:15**

Hall: **MMO Hall**

Session 3: **COM**

Subject: **Communication Systems**

Session Chair: Prof. Dr. **Mehmet TOYCAN**, Bahcesehir Cyprus University, Nicosia,
Turkish Republic of Northern Cyprus

**ID 207: Comparative Study of Radio Frequency, Free-Space Optical,
and Hybrid Air-to-Air Communication for Unmanned
Aerial Vehicle Swarms**

Samir Ekrem Salli, Necmiye Ozlem Unverdi
Yildiz Technical University, Türkiye



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**ID 19: Phase Shift Optimization for Reconfigurable Intelligent
Surface Assisted NOMA-PNC System with Multiple
Antennas**

Mert Ilguy, Berna Ozbek
Izmir Institute of Technology, Türkiye



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**ID 57: An Innovative Multimodal Strategy for Classifying
Modulation Schemes Using Diverse CNN Models**

Ozgun Ersoy, Omer Mintemur
Ankara Yildirim Beyazit University, Türkiye



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**ID 234: Resilient OFDM Communication Against Noise Jamming
Using Learning-Based Restoration**

Recep Evrim Ozgen¹, Tuncay Eren¹, Mehmet Kemal Ozdemir²
¹Turk Telekom R & D Department, Türkiye
²Istanbul Medipol University, Türkiye



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**ID 75: A Federated Learning Framework for Inter-cell Handover
Optimization in O-RAN**

Batuhan Akdogan¹, Ibrahim Hokelek², Hakan Ali Cirpan¹
¹Istanbul Technical University, Türkiye
²TUBITAK BILGEM, Türkiye



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Date: **27.11.2025, Thursday**

Hours: **13:45-15:15**

Hall: **MO Hall**

Session 4: **AP-1**

Subject: **Antennas and Propagation-1**

Session Chair: Prof. Dr. **Selcuk PAKER**, Istanbul Nisantasi University, Istanbul,
Turkiye

ID 165: Switchable 4-Element Microstrip Dipole Antenna Design for IoT Applications

Gulden Gunay Bulut Oner¹, Suad Basbug¹, Yasemin Altuncu²

¹Nevsehir Haci Bektas Veli University, Turkiye

²Nigde Omer Halisdemir University, Turkiye



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ID 128: Conformal Microstrip Array Patch Antenna Design for Unmanned Target Drone

Mesut Erol¹, Nazife Ceylan², Kayhan Ates², Sukru Ozen²

¹Turkish Aerospace Industries, Turkiye

²Akdeniz University, Turkiye



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ID 134: Metamaterial Enhanced Vivaldi Antenna for Ultra-Wideband Radar Systems

Merve Kose, Ozgur Ozdemir

Istanbul Technical University, Turkiye



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ID 208: Design of a 132 GHz 1x4 RHCP Microstrip Antenna Array with Rotman-Lens for Inter-Satellite Links

Sukru Kilik, Murat Tayfun Gunel

Istanbul Technical University, Turkiye



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ID 69: Dual-Band Dielectric Resonator Antenna with Linear and Circular Polarization for X-Band

Burcu Guzel Bahar¹, Alparslan Cagri Yapici², Murat Ucuncu¹

¹Baskent University, Turkiye; ²Teknokrat Inc.



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Date: **27.11.2025, Thursday**

Hours: **13:45-15:15**

Hall: **EMO-S Hall**

Session 5: **AI-1**

Subject: **Artificial Intelligence and Its Applications-1**

Session Chair: Prof. Dr. **Ece Olcay GUNES**, Istanbul Technical University, Istanbul, Turkiye

ID 60: Multi-Objective Surrogate-Assisted Neural Architecture Search for Digital Pathology: A Tree-Based Regression Approach

Zeliha Kaya Akcelik, Sumeyye Zulal Dik, Zeki Kus, Musa Aydin
Fatih Sultan Mehmet Vakif University, Turkiye



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ID 142: Reinforcement Learning for Autoscaling in Cloud Environments: A Case Study from Industry

Alper Demir¹, Huseyin Kaya², Merve Ulug³, Isil Ozkan³

¹Izmir University of Economics, Turkiye

²Payten Technology, Turkiye; ³Turkcell Technology, Turkiye



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ID 91: A Study on Cross-Lingual Security Vulnerabilities in Large Language Models

Melik Bugra Ozcelik, Ali Sentas, Berkecan Kocyigit, Sinan Ozen, Arda Akmese

AVL Turkiye Research and Engineering, Turkiye



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ID 73: Teaching LLMs to Code Step by Step using a Custom Scripting Language

Adnan Furkan Yildiz, Altan Borali, Oguz Burak Basaran

AVL Turkiye Research and Engineering, Istanbul, Turkiye



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ID 201: From Gesture to Communication: Recognition of Sign Languages with the Help of AI-Powered Wearable Bracelet, Turkish Sign Language Case

Mert Tas, Ahsen Guniz Altundag, Ece Olcay Gunes

Istanbul Technical University, Turkiye



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Date: **27.11.2025, Thursday**

Hours: **15:45-16:30**

Hall: **BAOB Common Hall**

Session: **PS-3**

Subject: **Invited Talk**

Session Chair: Assoc. Prof. **Oguzhan CEYLAN**, Kadir Has University, Istanbul, TR

Invited Talk – 3

**Grid-Forming Control of Power Converters for
Energy Systems Decarbonisation**

Assoc. Prof. Ioana PISICA

Brunel University of London, London, United Kingdom



Abstract – As conventional synchronous generation is displaced by inverter-based resources (IBRs), the stability of power systems is increasingly reliant on the control capabilities of these inverters.

Grid-forming (GFM) control represents a paradigm shift, allowing converters to emulate the behaviour of synchronous machines, thus providing essential grid services such as frequency and voltage regulation, inertia, and black-start capabilities.

Unlike conventional grid-following inverters, which require an existing voltage reference to operate, GFM inverters can operate autonomously, making them suitable for black-start capabilities, microgrid autonomy, and support in weak grid regions.

The keynote will cover recent advancements in grid-forming control.

Unlocking the full potential of grid-forming control requires close collaboration across disciplines. Power electronics, control theory, system planning, and policy must converge to develop solutions that are not only technically sound but also practical and scalable. Only through this interdisciplinary effort can grid-forming technologies be effectively integrated into resilient and economically viable energy systems.



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Date: **27.11.2025, Thursday**

Hours: **17:00-18:30**

Hall: **BAOB Common Hall**

Session 6: **EPS-2**

Subject: **Electric Power Systems-2**

Session Chair: Assoc. Prof. **Dimitris STIMONIARIS**, University of Western
Macedonia, Kozani, Greece

ID 96: Electrifying Istanbul's Metrobus A Pantograph Charging Approach

Ekrem Ciliz, Halit Alper Ozbas, Arda Cetinkaya, Emre Kiziltepe
AVL Turkiye Research and Engineering, Turkiye



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ID 104: Year-round Vehicle-to-Grid Enabled Frequency Regulation Potential of Electric Bus PublicTransport Fleets During Overnight Charging

Mustafa Alparslan Zehir¹, Kaan Atalay¹, Ilayda Kaya², Ege
Uzun², Arda Akyildiz², Bati Eren Ergun², Yigit Cakiroglu², Cavit
Fatih Kucuktezcan², Mehmet Onur Gulbahce², Ilhan Kocaarslan²
¹Marmara University, Turkiye
²Istanbul Technical University, Turkiye



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ID 170: A Markov Chain Based Electric Vehicle Charging Strategy Optimized with PSO and SMA Methods

Fatih Cakil, Ibrahim Gursu Tekdemir
Bursa Technical University, Turkiye



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ID 176: Regression-Based Reactive Power Sizing under Grid Code Requirements

Ali Ozan, Oguzhan Karahan, Mustafa Bagriyanik
Istanbul Technical University, Turkiye



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ID 32: Integrating Rotor Position Sensors in Inverter Systems A Functional Safety Approach for Improved Vehicle Safety

Osman Can Soygenc, Isil Cosar Ertas, Cuneyt Haspolat
AVL Turkiye Research and Engineering, Turkiye



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Date: **27.11.2025, Thursday**

Hours: **17:00-18:30**

Hall: **EMO Hall**

Session 7: **ELE-2**

Subject: **Electronics-2**

Session Chair: Assoc. Prof. **Hacer ATAR YILDIZ**, Istanbul Technical University,
Istanbul, Turkiye

ID 140: Design and Implementation of a GaN Power IC Based High Frequency Class-D Power Amplifier

Aziz Can Kilic¹, Samet Kurt², Muhammed Yusuf Candan², Burak Akin¹

¹Yildiz Technical University, Turkiye; ²Aselsan, Turkiye



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ID 164: Realization of First-order and Second-order Voltage Mode Inverse Active Filters with Cascade Capability

Elham Minayi

Dogus University, Turkiye



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ID 219: A High-Precision Bandgap Reference with -0.063 ppm/°C Temperature Coefficient in a 45 nm CMOS Process

Zaid Khan¹, Ahmet Alperen Oznam², Ahmet Yelboga², Korkut Kaan Tokgoz²

¹Jamia Millia Islamia University, India

²Sabanci University, Turkiye



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ID 46: Design of a Reconfigurable Bandpass Filter for Anti-Jamming Applications

Emrah Telli, Bahadır S. Yildirim

Mugla Sitki Kocman University, Turkiye



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ID 137: Simulation and Signal Integrity Optimization of Capacitive Couplers for Scalable High-Speed Data Links

Ece Oyku Odabasi^{1,2}, Tufan Coskun Karalar¹

¹Istanbul Technical University, Turkiye

²Aselsan Inc., Turkiye



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Date: **27.11.2025, Thursday**

Hours: **17:00-18:30**

Hall: **MMO Hall**

Session 8: **RAS-1**

Subject: **Robotics and Autonomous Systems-1**

Session Chair: Prof. Dr. **Galip CANSEVER**, Altinbas University, Istanbul, Turkiye

Assoc. Prof. **Costas ELMASIDIS**, Democritus University of Thrace,
Komotini, Greece

**ID 115: Multi-Robot Rendezvous with Dynamic Obstacles: A
Laplacian Matrix-Based Artificial Potential Function**

Asude Altiparmak Bilgin¹, Muhammed Koray Yilmaz¹,
Haluk Bayram²

¹Field Robotics Laboratory, BILTAM, Istanbul Medeniyet
University, Turkiye

²Field Robotics Lab., ROYAL, Bogazici University, Turkiye



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**ID 67: Suppressing Control Oscillations in Reinforcement
Learning via External Action Filtering for Autonomous
Driving**

Mehmet Yasar Osman Ozturan, Ahmet Emir Dirik
Bursa Uludag University, Turkiye



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**ID 11: Color-Based Object Detection for Multi-Domain
Applications and Integration with the Robotic Arm**

Gulsah Demirhan Aydin¹, Ramazan Alper²

¹Baskent University, Turkiye; ²DETIM Certification Inspection
and Engineering Services Ltd. Co., Turkiye



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**ID 48: Single-Shot ROI-Based Targetless LiDAR-Camera
Calibration via Edge Features**

Mahsun Bingol, Volkan Sezer
Istanbul Technical University, Turkiye



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**ID 202: Multi-Person Tracking in Cluttered Environments Using
Hybrid Data Association**

Nurettin Ozcelik, Volkan Sezer
Istanbul Technical University, Turkiye



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Date: **27.11.2025, Thursday**

Hours: **17:00-18:30**

Hall: **MO Hall**

Session 9: **AP-2**

Subject: **Antennas and Propagation-2**

Session Chair: Prof. Dr. **Mustafa SECMEN**, Yasar University, Izmir, Türkiye

ID 5: Impact of Metal Surfaces on NFC Antenna Performance and Mitigation Strategies

Ozge Bayri Otenkaya^{1,2}, Ali Kara¹

¹Gazi University, Türkiye; ²TOGG, Türkiye



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ID 53: Experimentation on Co-channel Interference Effects of RIS-Assisted Networks in Overlapping Coverage Areas

Samed Kesir, Emre Arslan, Batuhan Kaplan, Ahmet Coskun, Zehra Yigit

Turkcell Communication Services Inc., Türkiye



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ID 233: Performance Analysis and Optimization of an Ideal Reconfigurable Intelligent Surface (RIS) at 0.5 THz for 6G Wireless Communication Systems

Baran Aras¹, Selcuk Alparslan Avcı²

¹Cankiri Karatekin University, Türkiye

²Karabuk University, Türkiye



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ID 149: A Wideband and Wide-Angle Beam-Scanning Leaky-Wave Antenna Based on Oblique-Square-Shaped Radiating Elements

Goksel Turan¹, Gokhan Cinar¹, Hayrettin Odabasi¹, Ihsan Kanbaz², Okan Yurduseven³

¹Eskisehir Osmangazi University, Türkiye

²Gazi University, Türkiye; ³Queen's University Belfast, UK



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ID 204: Wideband Aperture Coupled Feed Magnetoelectric Dipole Antenna with Reflector Plate for WLAN and 5G Sub-6 GHz Applications

Yavuz Asci¹, Mustafa Secmen²

¹Usak University, Türkiye; ²Yasar University, Türkiye



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Date: **27.11.2025, Thursday**

Hours: **17:00-18:30**

Hall: **EMO-S Hall**

Session 10: **AI-2**

Subject: **Artificial Intelligence and Its Applications-2**

Session Chair: Prof. Dr. **Tulay YILDIRIM**, Yildiz Technical University, Istanbul,
Türkiye

ID 135: Reconstructing Complex Mobility Patterns: A Novel Deep Learning Solution Beyond Shortest Path Interpolation

Mehmet Eren Bulut, Emin Keresteci, Mehmet Burak Akgun,
Bulent Tavli

TOBB University of Economics and Technology, Türkiye



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ID 10: Distilling Knowledge or Transferring Weights? An Experimental Perspective on Classifiers

Merve Og, Beyza Yildizli, Zeki Kus, Musa Aydin
Fatih Sultan Mehmet Vakif University, Türkiye



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ID 29: Application of Deep/Machine Learning to HRRP Radar Data for Target Classification of Fighter Jets and Missiles

Sedat Ture, Selcuk Paker

Istanbul Technical University, Türkiye



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ID 6: Automated Chipboard to Edge Band Matching

Mehmet Tahir Sandikkaya, Nazanin Moarref
Istanbul Technical University, Türkiye



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ID 172: Evaluation of Quantization Strategies for Lightweight CNN Inference on AI-Accelerated and Conventional Microcontrollers

Furkan Yardimci¹, Dogukan Kose², Ahmet Ayberk Tarcin²,
Yunus Koc³, Tevfik Kadioglu²

¹Aalto University, Finland; ²Beko Corporate, Türkiye

³Istanbul Technical University, Türkiye



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Date: **28.11.2025, Friday**

Hours: **09:00-10:30**

Hall: **BAOB Common Hall**

Session 11: **RES-1**

Subject: **Renewable Energy Sources-1**

Session Chair: Assoc. Prof. **Alexis POLYCARPOU**, Frederick University, Cyprus

**ID 150: Improvement of Usable Capacity in Second Life LFP Cells
by Internal Resistance Guided Placement Strategy**

Kubra Demirel, Yavuz Ates, Ali Rifat Boynuegri
Yildiz Technical University, Türkiye



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**ID 30: Prediction of Installed Power Capacity in EV Charging
Stations Through Urban Mobility and Infrastructure
Indicators via Machine Learning**

Abdullah Hasim Atinc, Nugman Sagir, Zeynep Hasirci Tugcu
Karadeniz Technical University, Türkiye



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**ID 110: A Comparative Study of Day-Ahead EMS with Inverter-
Based PV, BESS, and DG in Active Distribution Network**
Sezai Polat¹, Irmak Onal Korkut², Emrah Biyik², Hacer Sekerci
Oztura²

¹Izmir Katip Celebi University, Türkiye
²Yasar University, Türkiye



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**ID 179: Study of the power electronics performance impact in the
design of energy systems based on RES**

Tatiani Stimoniari, Costas Elmasides, Ioannis Kosmadakis
Democritus University of Thrace, Greece



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**ID 189: Simulation-Based Characterization of Conducted EMI in
Phase-Shifted PWM DC-DC Converters with Load-
Dependent Behavior**

Suat Yildirmaz
TUBITAK BILGEM, Türkiye



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Date: **28.11.2025, Friday**

Hours: **09:00-10:30**

Hall: **EMO Hall**

Session 12: **DS + CS**

Subject: **Digital Systems + Circuits and Systems**

Session Chair: Prof. Dr. **Mustak Erhan YALCIN**, Istanbul Technical University,
Istanbul, Turkiye

ID 15: Synthesis Methodologies for the Fused Multiply-Accumulate Units on FPGAs

Ugur Cini¹, Taha Hussain^{1, 2}, Hamada M. R. Abujazar^{1, 3}

¹Uskudar University, Turkiye; ²Pakistan; ³Palestine



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ID 230: FHSS-Aided and GMM-Based Energy Detection for Jammer-Resilient OFDM Transmission on ADALM-Pluto SDR

Elif Avci¹, Fatih Sevimli¹, Emre Burak Oktay¹, Emirhan Oz¹, Ali Riza Ekti²

¹Balikesir University, Turkiye

²Oak Ridge National Laboratory, United States



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ID 131: Cryogenic PLL for Quantum Computing at 130nm by Using Ring VCO for 5GHz Application

Mirza Yuce, Ramazan Kopru

Isik University, Turkiye



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ID 28: Fully Active Meminductor Emulator Circuit

Hacer Atar Yildiz

Istanbul Technical University, Turkiye



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ID 215: Effect of DAC Non-Idealities in Computational Accuracy of In Memory Dot Product Accelerator

Arda Ozgun, Hasan Bartu Orhun, Korkut Kaan Tokgoz, Yusuf Leblebici

Sabanci University, Turkiye



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Date: **28.11.2025, Friday**

Hours: **09:00-10:30**

Hall: **MMO Hall**

Session 13: **SIP-1**

Subject: **Signal and Image Processing-1**

Session Chair: Prof. Dr. **Ece Olcay GUNES**, Istanbul Technical University, Istanbul,
Turkiye

ID 93: Audio Copy-Move Forgery Detection on Mel-Spectrograms Using AGAST, Harris, and FREAK

Ezgi Ozgen, Seyma Yucel Altay
Atatürk University, Turkiye



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ID 187: Towards Adaptive ERP-Based BCIs: EEG and fNIRS Guided Flashing Strategies to Account for Cognitive Fatigue

Onur Erdem Korkmaz¹, Tolga Turay¹, Hasan Kilickaya¹,
Hasan Ayaz², Riccardo Poli³

¹Ataturk University, Turkiye; ²Drexel University, United States

³University of Essex, United Kingdom



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ID 141: Classification of Time-Frequency and Time-Scale Representations of Heart Sound Signals by Deep Learning

Ilayda Tok, Mehmet Emin Yuksel
Erciyes University, Turkiye



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ID 166: Detection of Fake Images Using Pre-Trained CNN Models

Kenan Coskun, Ahmet Dag, Ismail Avcibas
OSTIM Technical University, Turkiye



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ID 114: Quantization Techniques for Resource-Efficient Medical Image Segmentation Across Diverse Modalities

Tugce Goksu, Musa Aydin, Zeki Kus
Fatih Sultan Mehmet Vakif University, Turkiye



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Date: **28.11.2025, Friday**

Hours: **09:00-10:30**

Hall: **MO Hall**

Session 14: **PEA-1**

Subject: **Power Electronics and Applications-1**

Session Chair: Prof. Dr. **Ebrahim BABAEI**, University of Tabriz, Iran

ID 22: Implementation of DAB Converter with DC Blocking Capacitors and Multiple Switch Fault Tolerant Capability with Proposed SPSFT Controller

Burak Yigitcan Bastug¹, Ahmet Karaarslan²

¹Eskişehir Technical University, Türkiye

²Ankara Yildirim Beyazıt University, Türkiye



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ID 7: Impact Analysis of EMC Filters in Switching Power Supplies Designed for Automotive Industry Heating Systems

Hakan Tekin¹, Eren Murtulu¹, Davut Ertekin²

¹Seger Audio and Electrical Equipment Industries Inc., Türkiye

²Bursa Technical University, Türkiye



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ID 169: Design of Phase Shifted DC/DC Converter for Electric Vehicle Fast Chargers

Berat Ayberk Temiz, Erdem Akboy

Yildiz Technical University, Türkiye



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ID 227: Analysis of Boost and Totem Pole Power Factor Correction Converters at 2 kW

Faruk Bakan¹, Aykut Kadir Candan², Ramazan Karatas²,
Fevzi Zengin², Hasan Kelebek²

¹Yildiz Technical University, Türkiye; ²Inform, Türkiye



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ID 222: Isolated Single-Phase Buck-Boost AC-AC Converter with Inherent Commutation for Dynamic Voltage Restorer Applications

Deniz Zargariafshar, Ebrahim Babaei, Mehran Sabahi,
Mohammad Bagher Bannae Sharifian, Vida Ranjbarizad
University of Tabriz, Iran



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Date: **28.11.2025, Friday**

Hours: **09:00-10:30**

Hall: **EMO-S Hall**

Session 15: **AI-3**

Subject: **Artificial Intelligence and Its Applications-3**

Session Chair: Prof. Dr. **Tulay YILDIRIM**, Yildiz Technical University, Istanbul,
Turkiye

ID 27: A Hybrid Approach to Rooftop Type Detection in High-Resolution Satellite Images

Suheda Akdag, Muazzez Buket Darici
Huawei Turkiye R & D Center, Turkiye



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ID 88: Evaluating Kolmogorov–Arnold Networks for Spatio-temporal Mobility Based User Identification

Emin Keresteci¹, Osman Tokluoglu², Mehmet Eren Bulut¹,
Mehmet Burak Akgun¹, Bulent Tavli¹

¹TOBB University of Economics and Technology (ETU), Turkiye

²Ankara Yildirim Beyazit University, Turkiye



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ID 62: Anomaly and Root Cause Detection Using Machine Learning Approaches in Engine-Out NOx Emission Time Series Data

Cansu Ozturk, Mustafa Dogan, Enes Duranel, Baris Kahraman
AVL Turkiye Research and Engineering, Turkiye



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ID 76: Machine Learning Based Root Cause Analysis of IUMPR Performance in Automotive OBD Systems

Elifnur Tafrali, Sena Yazan, Gizem Cakirbas, Cemhan Demirci
AVL Turkiye Research and Engineering, Turkiye



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ID 182: A Modified Artificial Bee Colony Algorithm for Dynamic Optimization Problems

Abdulbaki Kartal, Bahriye Akay, Dervis Karaboga
Erciyes University, Turkiye



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Date: **28.11.2025, Friday**

Hours: **10:45-11:30**

Hall: **BAOB Common Hall**

Session: **PS-4**

Subject: **Invited Talk**

Session Chair: Prof. Dr. **Aydogan OZDEMIR**, Kadir Has University, Istanbul, Turkiye

Invited Talk - 4

Developing a Framework for Assessment and Optimal Enhancement of Multi-Microgrid Distribution System Reliability

Prof. Mahmoud Fotuhi-FIRUZABAD
Sharif University of Technology, Tehran, Iran



Abstract – In view of growing demand and dependency on electricity, the need to achieve an acceptable level of reliability has become a critical issue for power system operators. Given that most of the failures and contingencies that lead to customer power outages are related to the power distribution sector, studies on the distribution system reliability with a view to improving the quality of services provided to clients are of great importance. On the other hand, the evolution of distribution systems towards smarter and active grids and the integration of microgrids into them have made the reliability assessment of such systems challenging. Microgrids can enhance energy efficiency in a sustainable power grid as well as the reliability of the distribution system, through supporting high penetration of renewable and distributed energy resources. Focusing on the ability of microgrids (MGs) to provide backup power supply to the distribution system in the event of main grid outages or disruptions, a reliability model for self-controlled distributed energy resource-rich MGs is presented from the perspective of the distribution system to which they are connected.

In this keynote, a model is first presented for the reliability assessment of microgrids from the standpoint of the distribution system. Then, using the proposed model, an analytical framework for evaluating the reliability of distribution systems in the presence of microgrids is presented. Modelling and analyzing microgrids using the proposed methodology result in the simplification and acceleration of computations associated with the reliability assessment of the distribution system. Finally, using the method developed for assessing the distribution system reliability, a framework is presented for the optimal enhancement of the distribution system reliability.



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Date: **28.11.2025, Friday**

Hours: **11:45-13:30**

Hall: **BAOB Common Hall**

Session 16: **RES-2**

Subject: **Renewable Energy Sources-2**

Session Chair: Assoc. Prof. **Ioana PISICA**, Brunel University of London, London,
United Kingdom

ID 160: Adaptive Fast Terminal SMC for V2V Bi-directional Charging System

Ahmet Cakanel, Abdulkarim Ahmet Kaplan
Kirkklareli University, Türkiye



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ID 108: Energy communities as facilitators of demand response applications: Sustainability Survey and Energy Profile of Members of an actual Energy Community in Greece

Georgios Liolios, Konstantinos Kantris, Dimitrios Tsiamitros,
Dimitrios Stimoniariis
University of Western Macedonia, Greece



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ID 126: A New 3D Analytical Method for Calculating the Distribution of Critical Current Density in a High-Tc Superconducting Nanowire Using the Critical State Model

Asma Azzouza¹, Hicham Azzouza², Jean-Paul Yonnet³,
Pascal Tixador³

¹University of Boumerdes, Algeria

²University of Jijel, Algeria; ³University Grenoble Alpes, France



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ID 199: ANN-Based MPPT Trained using Epsilon-INC for PV Systems

Ataberk Bahtiyar, Yunus Emre Yagan, Ayhan Gun
Kutahya Dumlupinar University, Türkiye



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ID 173: Smart Inverter Droop Setting to Solve Voltage Issues in Distribution Networks

Alper Savasci¹, Oguzhan Ceylan², Muhammed Turhan Cakir³,
Alessia Sagripanti⁴, Carmine Rodio⁴, Riccardo Lazzari⁴

¹Abdullah Gul University, Türkiye;

²Kadir Has University, Türkiye; ³Marmara University, Türkiye

⁴Ricerca sul Sistema Energetico, Italy



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Date: **28.11.2025, Friday**

Hours: **11:45-13:30**

Hall: **EMO Hall**

Session 17: **HVT**

Subject: **High Voltage Techniques**

Session Chair: **Dr. Zacharias G. DATSIOS**, Aristotle University of Thessaloniki,
Thessaloniki, Greece

ID 72: Fault Classification and Localization in Series-Compensated Transmission Lines Using Wavelet Features and Machine Learning

Nisarullah Nisar, Korhan Karaarslan
Kocaeli University, Turkiye



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ID 125: Investigation of Shielding Effectiveness in Different Cable Types for Indirect Effects of Lightning

Burak Erciftci, Emirhan Sag, Gokhan Goren, Tolga Ciftci, Serkan Akyuz
Turkish Aerospace, Turkiye



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ID 146: Numerical Analysis of Wind-Induced Particle Adhesion on High-Voltage Insulators Using COMSOL Multiphysics

Irem Gorgoz, Mehmet Cebeci
Firat University, Turkiye



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ID 56: Effect of AC and DC Voltages on Tracking and Erosion Resistance of HTV Silicone Rubber

Taylan Ozgur Bilgic, Ozcan Kalenderli
Istanbul Technical University, Turkiye



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ID 237: Deep Learning-Based Estimation of Arc Length from High-Speed Breakdown Images in 10 m Rod-Plane Air Gap

Saiqa Dilawaiz¹, Aydogan Ozdemir¹, Wahab Ali Shah²

¹Kadir Has University, Turkiye

²Nanjing University of Posts & Telecommunication, China



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Date: **28.11.2025, Friday**

Hours: **11:45-13:30**

Hall: **MMO Hall**

Session 18: **SIP-2**

Subject: **Signal and Image Processing-2**

Session Chair: Prof. Dr. **Tayfun AKGUL**, Istanbul Technical University, Istanbul, TR

ID 59: Normalized FxLMS Algorithm Focused Active Noise Cancellation (ANC) System Approach in Automotive Industry

Alpay Cesur, Ahmet Emre Canbey, Hikmet Karsiyaka,
Omer Faruk Maden
Seger Audio and Electrical Equipment Industry Inc., Türkiye



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ID 112: Noise Suppression in Speech Signals Using a GRU-Based Deep Learning Model

Yahya Sagdic¹, Mustafa Namdar¹, Arif Basgumus²
¹Kutahya Dumlupinar University, Türkiye
²Bursa Uludag University, Türkiye



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ID 147: Improving AI-Based Dental Caries Detection with Limited Data: A Few-Shot Learning Approach

Mehmet Sinan Oruc¹, Imam Samil Yetik¹, Ozgur Karaman
Incekurk², Ahmet Kursad Culhaoglu³, Mehmet Ali Kilicarslan²,
Cengiz Evli², Mehmet Hakan Kurt²
¹TOBB Economics and Technology University, Türkiye
²Ankara University, Türkiye; ³University of Health Sciences



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ID 16: Deep Learning-Based Object Detection for Vehicular Safety: A Comparative Study on COCO, KITTI, and Merged Datasets

Bengisu Yildirim¹, Elif Aydin²
¹Atilim University, Türkiye; ²Cankaya University, Türkiye



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ID 243: Face Liveness Detection Using RGB and Thermal Image Fusion

Merve Ersan^{1,2}, Melike Girgin^{1,3}, Tayfun Akgul^{1,3}
¹Istanbul Technical University, Türkiye
²TUBITAK BILGEM, Türkiye
³ITU Advanced Research on Intelligent Sys.(ARIS) Lab., Türkiye



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Date: **28.11.2025, Friday**

Hours: **11:45-13:30**

Hall: **MO Hall**

Session 19: **PEA-2**

Subject: **Power Electronics and Applications-2**

Session Chair: Prof. Dr. **Ahmet Faruk BAKAN**, Yildiz Technical University, Istanbul, Türkiye

ID 122: Capacitive Wireless Power Transfer for Electric Scooters Using Asymmetrical Plates

Gulin Asri, Sedanur Ozdamar, Ece Yalcin, Timur Aydemir,
Aydogan Ozdemir
Kadir Has University, Türkiye



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ID 124: Performance Analysis and Reactive Power Control of a DFIG Fed by a MC for Wind Energy Applications

Mohamed Alarabi, Sedat Sunter
Atilim University, Türkiye



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ID 175: A SOGI-PLL-Integrated Virtual Oscillator Control for Microgrids: Power Quality Enhancement and Sensitivity Analysis

Mehmet Can Alphan, Gurkan Soykan
Bahcesehir University, Türkiye



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ID 103: Finite Element Analysis of 6-Phase Permanent Magnet Synchronous Generator with Rectifier Load for Marine Applications

Yasin Genc, Taner Goktas, Eyup Akpınar
Dokuz Eylul University, Türkiye



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ID 145: Comparative Loss Analysis of Forward Converters

Tolga Zeren, Ahmet Faruk Bakan
Yildiz Technical University, Türkiye



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Date: **28.11.2025, Friday**

Hours: **11:45-13:30**

Hall: **EMO-S Hall**

Session 20: **AI-4**

Subject: **Artificial Intelligence and Its Applications-4**

Session Chair: Prof. Dr. **Olcay AKAY**, Dokuz Eylul University, Izmir, Türkiye

ID 86: Predicting Hammer Prices in Judicial Real-Estate Auctions on UYAP: A Leakage-Safe CatBoost Baseline with Robust Targeting

Fatih Turan, Bulent Bolat
Yildiz Technical University, Türkiye



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ID 89: An Explainable RL-Based Speed Adaptation Framework for Autonomous Driving Using a Custom CARLA Environment

Begum Sunal Cakan, Emre Kaynar, Tolga Bodrumlu,
Musa Yazar
AVL Türkiye Research and Engineering, Türkiye



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ID 171: From Negative to Positive: Automated Text Style Transfer in Turkish Banking

Gul Tahaoglu¹, Kamil Dilbaz², Tunahan Dogan², Hasan Guner²
¹Karadeniz Technical University, Türkiye
²Mirsis Bilgi Technologies, Türkiye



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ID 228: Prediction of Weaving Defects in the Garment Production Process Using Artificial Neural Networks and Deep Learning: A Comparison on Balanced and Imbalanced Data

Nail Koyun, Gokhan Uckan, Emre Comak
Pamukkale University, Türkiye



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ID 65: Noise Suppression in Speech Signals using Artificial Intelligence

Cihat Can Zivalioglu, Olcay Akay
Dokuz Eylul University, Türkiye



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Social Trips

28.11.2025, Friday

14:30-17:30



Tirilye, Mudanya / Bursa



Golyazi, Nilüfer / Bursa

Conference Dinner

28.11.2025, Friday

19:30-22:30



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November 29, 2025; Saturday



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Date: **29.11.2025, Saturday**

Hours: **09:00-10:30**

Hall: **BAOB Common Hall**

Session 21: **RAS-2**

Subject: **Robotics and Autonomous Systems-2**

Session Chair: Prof. Dr. **Galip CANSEVER**, Altinbas University, Istanbul, Türkiye

Assoc. Prof. **Mehmet Akif SENOL**, Istanbul Topkapi University,
Istanbul, Türkiye

ID 116: Design and Implementation of a Redundant Automatic Flight Control System for a Utility Helicopter

Mutullah Eser, Ahmet Kara, Can Unen, Oguzhan Gultekin,
Umut Ture, Ilgaz Doga Okcu
Turkish Aerospace Industries (TAI), Türkiye



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ID 74: Optimizing Scenario-Based Testing in ADS: Parameter Selection and Sensitivity Analysis Based Parameter Elimination

Namik Zengin, Oguzhan Derebasi, Omer Faruk Temiz
AVL Türkiye Research and Engineering, Türkiye



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ID 168: Unscented Kalman Filter with Adaptation of Scaling Parameter and Noise Statistics

Serhat Karacam, Tugba Selcen Navruz
Gazi University, Türkiye



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ID 97: Swarm Coordination in Hybrid Unmanned Surface Vehicle Platforms Featuring Integrated Drone Deployment

Semanur Bilada, Elif Nur Yildiz, Abdulkarim Akten,
Metin Cavdar, Ozgur Ustun
Piri Reis University, Türkiye



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ID 81: Adaptive Gait Generation Using Echo State Networks and Second-Order Servo Tracking

Gulnur Yilmaz Bingol, Enis Gunay
Erciyes University, Türkiye



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Date: **29.11.2025, Saturday**

Hours: **09:00-10:30**

Hall: **EMO Hall**

Session 22: **EMD-1**

Subject: **Electrical Machines and Drives-1**

Session Chair: Prof. Dr. **M. Timur AYDEMİR**, Kadir Has University, Istanbul,
Türkiye

ID 79: Eccentricity Fault Diagnosis based on Phase and Amplitude Features of Stray Flux in Permanent Magnet Synchronous Generators

Ilyas Aladag¹, Taner Goktas², Muslum Arkan³

¹Osmaniye Korkut Ata University, Türkiye

²Dokuz Eylul University, Türkiye; ³Inonu University, Türkiye



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ID 136: FEA Investigation of Magnetic Slot Wedges in Traction Motor Based on an Experimentally Validated Model

Ezgi Boz^{1,2}, Guven Komurgoz¹

¹Istanbul Technical University, Türkiye

²Aselsan Inc., Türkiye



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ID 139: Impact of Distributed and Concentrated Winding Configurations on Flux Switching Generator

Buse Soydas¹, Tugberk Ozmen², Nevzat Onat², Bati Eren Ergun¹,
Mehmet Onur Gulbahce¹

¹Istanbul Technical University, Türkiye

²Manisa Celal Bayar University, Türkiye



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ID 177: Linear Proportional Actuator Design and Optimization for Aerospace Application: Influence of Ferromagnetic Material on Electromagnetic Force

Isa Yildirim¹, Lale T. Ergene²

¹TAAC Aviation Technologies Inc., Türkiye

²Istanbul Technical University, Türkiye



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ID 21: Electromagnetic Performance Comparison of SPMSM Type Reciprocating Compressor Motors Using ANSYS Motor-CAD

Doga Saadet Karalok¹, Yakup Akyun², Burak Solak²

¹Istanbul Technical University, Türkiye; ²BEKO Inc., Türkiye



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Date: **29.11.2025, Saturday**

Hours: **09:00-10:30**

Hall: **MMO Hall**

Session 23: **SIP-3**

Subject: **Signal and Image Processing-3**

Session Chair: Assist. Prof. **Tuba AYHAN**, MEF University, Istanbul, Turkiye

ID 8: Stress-Testing Face Recognition: Factor-Wise In- vs. Out-of-Distribution Gaps on the CMU Face Dataset

Mustafa Salici, Nihan Kahraman
Yildiz Technical University, Turkiye



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ID 42: A Systematic Comparison of Text and Image Encoders for Visual Question Answering: From RNN to LLM-Based Representations

Sumeyye Zulal Dik, Reyhan Hosavci, Zeliha Kaya Akcelik,
Zeki Kus, Musa Aydin
Fatih Sultan Mehmet Vakif University, Turkiye



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ID 9: Intelligent Monitoring System: Facial Features Based Driver Drowsiness and Distraction Detection

Baris Tuna¹, Murat Kaplan²
¹Marmara University, Turkiye; ²FEV Turkiye, Turkiye



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ID 105: Image Colorization with an Attention-Mechanism-Based Encoder and Decoder Approach

Beksultan Kochkombaev, Bekir Dizdaroglu
Karadeniz Technical University, Turkiye



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ID 44: Comparative Analysis of Multiple CNN Architectures and Transformer (ViT-DINO) Approach for Multi-Class Military Aircraft Classification

Murat Toren, Hakki Mollahasanoglu, Kadir Kurtulus,
Mehmethan Horoz
Recep Tayyip Erdogan University, Turkiye



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Date: **29.11.2025, Saturday**

Hours: **09:00-10:30**

Hall: **MO Hall**

Session 24: **PEA-3**

Subject: **Power Electronics and Applications-3**

Session Chair: Prof. Dr. **Ozgur USTUN**, Piri Reis University, Istanbul, Türkiye

ID 212: Multiport Forward-Flyback Converter for Photovoltaic-Battery Systems with Enhanced Voltage Gain and Continuous Input Current

Hamed Abdi, Ebrahim Babaei, Nagi Rostami
University of Tabriz, Iran



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ID 232: Comparative Performance Analysis of Harmonic Control Array and PR+Notch Controllers in Single-Phase Series Active Power Filters

Mehmet Fatih Cakar¹, Baran Orman², Gokhan Dag²,
Mustafa Onat², Murat Dogruel³
¹Yeditepe University, Türkiye; ²Marmara University, Türkiye
³Istanbul 29 Mayıs University, Türkiye



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ID 217: A Practical Test Platform for the Experimental Characterization of GaN Devices Switching Losses

Aliimza Dasdemir, Baris Yildiz, Mehmet Onur Gulbahce
Istanbul Technical University, Türkiye



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ID 155: Dynamic Performance Assessment of a Grid-Forming IBR in RMS and EMT Domains with User-Defined Control Models

Ramin Ebadi¹, Gokhan Onal¹, Nurhan Rizqy Averous²
¹Lean Power Solutions (LPS), Türkiye
²Lean Power Solutions (LPS), Indonesia



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ID 240: Design and Implementation of Micro Hydroelectric Power System for Battery Charging Applications

Buse Guven, Metin Cavdar, Ozgur Ustun
Piri Reis University, Türkiye



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Date: **29.11.2025, Saturday**
Hours: **09:00-10:30**
Hall: **EMO-S Hall**
Session 25: **SS-1**
Subject: **Special Session**
Session Chair:



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Date: **29.11.2025, Saturday**

Hours: **11:00-12:30**

Hall: **BAOB Common Hall**

Session 26: **SENS**

Subject: **Sensors and Instrumentation**

Session Chair: Prof. Dr. **Sait Eser KARLIK**, Bursa Uludag University, Bursa, Türkiye

ID 236: Low Error-Rate Temperature Prediction with Machine Learning Using LoRaWAN Data

Abdurrahim Nas¹, Omer Yildiz², Sait Eser Karlik²

¹Fenerbahce University, Türkiye;

²Bursa Uludag University, Türkiye



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ID 129: T-Protocol: An Energy-Efficient, Low-Latency Link-Layer Security Suite for Wireless Sensor Networks

Fuat Tore, Beyza Gorkemli Bayram

Erciyes University, Türkiye



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ID 221: False Alarm Suppression of Wind-Induced Vegetation Movements in mmWave FMCW Radar Systems Using K-Nearest Neighbors (KNN) Algorithm

Murat Guder¹, Deniz Temir¹, N. Celal Uslu²

¹Havelsan Technology Radar Inc., Türkiye

²Republic of Türkiye - Ministry of Trade, Türkiye



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ID 82: Monitoring of an Electric Motor through Linear Kalman Filter based Fusion Operation on Delayed Sensors

Duygu Bayram Kara, Deniz Ak, Osman Taha Sen

Istanbul Technical University, Türkiye



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ID 180: AI-Driven Fiber Optic Acoustic Sensing: From 1D CNNs to Spectrogram-Based Architecture

Ramazan Can Sahin, Ahmet Kagan Kaya, Emre Belikirik, Ugur Ataman

Samm Technology Communications Industry and Trade Inc., Türkiye



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Date: **29.11.2025, Saturday**

Hours: **11:00-12:30**

Hall: **EMO Hall**

Session 27: **EMD-2**

Subject: **Electrical Machines and Drives-2**

Session Chair: Prof.Dr. **Ahmet FENERCIOGLU**, Bursa Technical University, Bursa,
Türkiye

**ID 185: Identifying Open-Circuit Fault Symmetries for Six-Phase
Electric Machines**

Muhammed Muhsin Cosdu¹, Ahmet Talha Oztunca²,
Lale T. Ergene³

¹Aselsan Inc., Türkiye; ²Hacettepe University, Türkiye

³Istanbul Technical University, Türkiye



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**ID 51: Thermal Analysis of a Novel Direct Rotor Cooling Method
for an Externally Excited Synchronous Motor**

Ayşe Boduroğlu, Efe Afacan, Enes Cifci, Mahmut Hudai
Seferoğlu, Sena Isik
FEV Türkiye, Türkiye



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**ID 214: Conceptual Design of a Sensorless Closed Loop V/f
Controlled Integrated Induction Motor Drive System**

Tunc Pervanlar¹, Abdullah Polat², Mehmet Onur Gulbahce¹

¹Istanbul Technical University, Türkiye

²WAT Motor Inc., Türkiye



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**ID 178: Design and Optimization of a Multiphase PMSM with
Integrated Charging for Light Electric Vehicles**

Musa Burak Yelek, Murat Yilmaz
Istanbul Technical University, Türkiye



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**ID 153: Comparison of SMO and MRAS-Based Speed Estimation
Methods for High-Speed PMSM Drives**

Secil Eser, İres Iskender
Cankaya University, Türkiye



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Date: **29.11.2025, Saturday**

Hours: **11:00-12:30**

Hall: **MMO Hall**

Session 28: **CON-1**

Subject: **Control Systems-1**

Session Chair: Prof. Dr. **Mehmet Turan SOYLEMEZ**, Istanbul Technical University,
Istanbul, Türkiye

**ID 117: Detection of Limit Cycles in Redundant Actuator Systems
by Quasi-Linearization**

Oguzhan Gultekin, Can Unen, Ahmet Kara, Mutullah Eser,
Umut Ture, Ilgaz Doga Okcu
Turkish Aerospace Industries (TAI), Türkiye



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**ID 120: A Practical Feedforward Decoupling Controller Design for
a Helicopter**

Can Unen, Oguzhan Gultekin, Ahmet Kara, Mutullah Eser,
Umut Ture, Ilgaz Doga Okcu
Turkish Aerospace Industries (TAI), Türkiye



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**ID 18: Sliding Mode Control of Pendulum System Using Different
Sliding Surfaces**

Ibrahim Halil Teke, Nusret Tan
Inonu University, Türkiye



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**ID 94: Integrated Control Strategy Combining Torque Vectoring
and Rear-Wheel Steering for Enhanced Stability and
Maneuverability**

Ahmet Ustaoglu, Onurcan Turhan, Meriç Devranoglu, Elif Atilla,
Emre Sezgin
AVL Türkiye Research and Engineering, Türkiye



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**ID 52: Depth Control Based on PID Using a Pressure Sensor in an
Autonomous Underwater Vehicle**

Engin Can Dursun¹, Serhat Yilmaz¹, Selim Gokcan Karatop²
¹Kocaeli University, Türkiye
²STM, Türkiye



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Date: **29.11.2025, Saturday**

Hours: **11:00-12:30**

Hall: **MO Hall**

Session 29: **EMW-1**

Subject: **Electromagnetics, Microwave-1**

Session Chair: Prof. Dr. **Filiz GUNES**, Yildiz Technical University, Istanbul, Türkiye

ID 133: An EMI Filter Design for DC-DC Converter

Nurcan Yigit¹, Sevim Uslu¹, Merve Gonen¹, Arif Basgumus¹,
Emirhan Sag²

¹Bursa Uludag University, Türkiye

²Turkish Aerospace Industries Inc., Türkiye



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ID 45: Comparative Study of Military and Commercial RF Immunity Test Methods on COTS Equipment Susceptibility

Fatih Ustuner

Istanbul Ticaret University, Türkiye



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ID 36: Dynamic In-Vitro Permittivity Measurement of Various Wood Species via Cavity Perturbation

Temiyemi Amos Oguntunde, Burak Ozbey

Ankara University, Türkiye



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ID 37: Classification of Alcohol Types by a Perturbed Cylindrical Cavity Resonator

Temiyemi Amos Oguntunde, Ceylan Cicek, Burak Ozbey

Ankara University, Türkiye



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ID 87: Design and Electromagnetic Analysis of LVDTs for Aerospace Applications: Influence of Core Material Permeability on Linearity and Sensitivity

Seyidkhadija Mirjafarli

TAAC Aerospace Technologies & Istanbul Technical University,
Türkiye



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Date: **29.11.2025, Saturday**

Hours: **11:00-12:30**

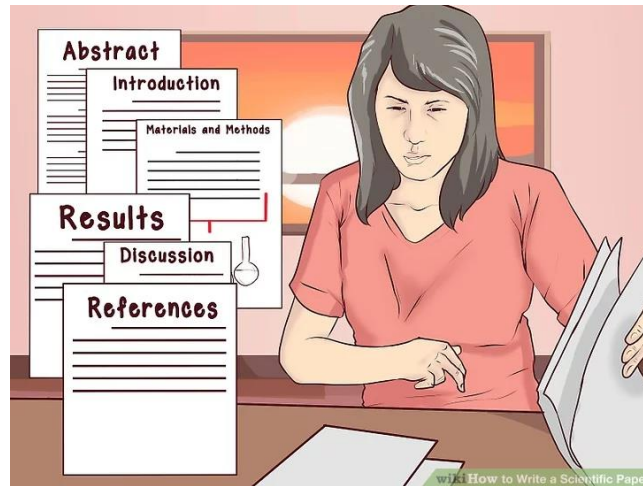
Hall: **EMO-S Hall**

Session 30: **SS-2**

Subject: **Special Session**

Session Chair: Prof. Dr. **Ebrahim BABAEI**, University of Tabriz, Tabriz, Iran

Workshop on Scientific Article Writing





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Date: **29.11.2025, Saturday**

Hours: **13:30-14:45**

Hall: **BAOB Common Hall**

Session: **PS-5**

Subject: **Invited Talk**

Session Chair: Prof. Dr. **Aydogan OZDEMIR**, Kadir Has University, Istanbul, Türkiye

Prof. Dr. **Mustafa BAGRIYANIK**, Istanbul Technical University, Istanbul Türkiye

Invited Talk – 5

Artificial Intelligence for Minute-Scale PV Power
Forecasting with Sky Images: Rethinking Labeling,
Modeling, and Optimization Approaches

Prof. Pavlos S. GEORGILAKIS

National Technical University of Athens (NTUA)
Athens, Greece



Abstract – Accurate minute-scale photovoltaic (PV) power forecasting is crucial for the reliable operation of solar-integrated power systems. Recent advancements in computational power and low-cost data storage have enabled utilization of Ground-based Sky Images (GSIs), which offer high-resolution spatiotemporal insights into cloud dynamics. Simultaneously, breakthroughs in Artificial Intelligence (AI) have revolutionized PV power forecasting, introducing concepts such as deep end-to-end modeling, unsupervised learning, and multi-modal data fusion.

This presentation explores the potential and limitations of AI in GSI-based minute-scale PV power forecasting by addressing three fundamental questions:

1. Can GSIs be automatically classified without pre-defined ground-truth labels?
2. Can deep learning replace traditional cloud motion vectors?
3. Does reliance on gradient-based backpropagation limit model calibration?

To address these questions, a data-driven forecasting pipeline is introduced, integrating GSI classification, Cloud Motion Modeling (CMM), and a hybrid global optimization algorithm. A novel unsupervised learning framework is introduced for automatic multi-class classification of unlabeled GSIs to mitigate dataset imbalance and enhance forecasting accuracy. Additionally, deep convolutional autoencoders are evaluated for their effectiveness in CMM. The hybrid optimization algorithm supports both model calibration and performance enhancements across pipeline components.

Results from two real-world case studies highlight the scalability benefits of unsupervised learning, the pivotal role of global optimization, as well as the importance of downstream evaluation.



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Date: **29.11.2025, Saturday**

Hours: **14:45-16:30**

Hall: **BAOB Common Hall**

Session 31: **MEC + SSA**

Subject: **Mechatronics + Smart System Applications**

Session Chair: Assist. Prof. **Tuba AYHAN**, MEF University, Istanbul, Turkiye

ID 31: Design and Implementation of OTONUMBA: A Portable Autonomous Fire- Extinguishing Robot with Vision-Based Targeting

Tolgahan Akbulut¹, Batuhan Turk¹, Samilislam Ozata²,
Volkan Akkoyun¹, Ahmet Kagizman³, Volkan Sezer¹

¹Istanbul Technical University, Turkiye

²Istanbul Ticaret University, TR; ³Kirklareli University, Turkiye



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ID 70: Active Vibration Control of Cantilever Beam using Multi-input Multi-output PPFR Controller

Arzumhan Can Kutlucan¹, Baran Alikoc², Leyla Goren-Sumer¹

¹Istanbul Technical University, Turkiye

²AVL Turkiye Research and Engineering, Turkiye



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ID 49: Data-Driven Feature Extraction for Anomaly Prediction in Hydrogen-Fueled Internal Combustion Engines

Onur Baris, Salih Bilgin, Gokcen Tuncer, Enis Tanrikulu,
Burak Ustun

AVL Turkiye Research and Engineering, Istanbul, Turkiye



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ID 50: Engine Coolant Temperature Prediction Using Stateful Long Short-Term Memory (LSTM) Networks on Real-World Automotive Data

Mustafa Dogan¹, Salih Bilgin¹, Maximilian Peter²,
Deniz Yildirim¹, Omer Cetin¹

¹AVL Turkiye Research and Engineering, Turkiye

²AVL Deutschland GmbH, Bietigheim-Bissingen, Germany



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ID 163: Enhancing Metal Surface Inspection in Automotive Factories with Privacy-Preserving Federated and Continual Learning

Yernar Seitkamal¹, Muhammed Oz², Cemil Oz¹

¹Sakarya University, Turkiye

²Sakarya University of Applied Sciences, Turkiye



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Date: **29.11.2025, Saturday**

Hours: **14:45-16:30**

Hall: **EMO Hall**

Session 32: **EMD-3**

Subject: **Electrical Machines and Drives-3**

Session Chair: Assoc. Prof. **Duygu BAYRAM KARA**, Istanbul Technical University,
Istanbul, Türkiye

ID 220: Diagnosis of Broken Magnet Faults in Permanent Magnet Synchronous Generators Based on CNN Model

Merve Comert, Abdurrahman Unsal
Kutahya Dumlupinar University, Türkiye



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ID 78: A Hybrid Machine Learning Model based on Start-Up Stator Current and High-Resolution Time-Frequency Images for Mechanical Fault Detection and Classification in Induction Motors

Melih Kadir Makara, Gurcu Nur Ayas, Taner Goktas, Olcay Akay
Dokuz Eylul University, Türkiye



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ID 161: Multi-Objective Switching Frequency and Component Optimization in PAM-Based BLDC Motor Drives

Ege Uzun, Yusuf Baran Subasi, Mehmet Onur Gulbahce
Istanbul Technical University, Türkiye



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ID 229: A High-Performance Driver Design for Brushless DC Motors in E-Scooter Speed Control

Ahmet Kardes, Metin Cavdar, Ozgur Ustun
Piri Reis University, Türkiye



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ID 242: Sensorless IPMSM Control Under Parametric Uncertainty for Washing Machine Drives

Emrah Salman, Murat Yilmaz
Istanbul Technical University, Türkiye



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ID 123: Dynamic Investigation of a Double fed Induction Generator under Faulty Operations

Hamda Abdi Atteyeh¹, Duygu Bayram Kara², Abdoukader Ibrahim Idriss¹, S. Serhat Seker²

¹Université de Djibouti, Djibouti; ²Istanbul Tech. Univ., Türkiye



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Date: **29.11.2025, Saturday**

Hours: **14:45-16:30**

Hall: **MMO Hall**

Session: **CON-2**

Subject 33: **Control Systems-2**

Session Chair: Prof. Dr. **Mehmet Turan SOYLEMEZ**, Istanbul Technical University,
Istanbul, Türkiye

ID 144: PI Controller and Lag Compensator Design and Development for DC-DC Interleaved Boost Converter and Performance Analysis Under Disturbed Conditions

Faruk Kara¹, Ibrahim Aliskan²

¹Istanbul Kultur University, Türkiye

²Yildiz Technical University, Türkiye



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ID 61: Model Predictive Control (MPC) Design for Active Suspension Systems

Sabri Yilmaz, Metehan Vural, Tugcan Celebi, Hadiye Cansu

Emron, Tugce Ozdemir, Furkan Tasci, Canberk Gazioglu

AVL Türkiye Research and Engineering, Türkiye



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ID 188: Energy-Efficient and Actuator-Friendly Control Under Wave Disturbances: Model Reference vs. PID for Thruster Surge

Anil Erdinc Turetken, Hakan Ersoy, Aslihan Kartci

Yildiz Technical University, Türkiye



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ID 195: Development of a New Statistical-Based Estimation Algorithm for Hybrid Control of Position, Speed, and Torque of Permanent Magnet Motors in Discontinuous and Continuous Operation

Abdulkerim Ahmet Kaplan^{1, 2}, Derya Ahmet Kocabas²

¹Kirklareli University, Türkiye

²Istanbul Technical University, Türkiye



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ID 225: Steering Control of an Electric Boat with Brushless DC Motor

Batuhan Penbe, Harun Cem Albayrak, Metin Cavdar,

Ozgur Ustun

Piri Reis University, Türkiye



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Date: **29.11.2025, Saturday**

Hours: **14:45-16:30**

Hall: **MO Hall**

Session 34: **EMW-2**

Subject: **Electromagnetics, Microwave-2**

Session Chair: Prof. Dr. **Gunes YILMAZ**, Bursa Uludag University, Bursa, Türkiye
Dr. **Oguzhan COSKUN**, EMKO Electronics Inc., Bursa, Türkiye

ID 39: Propagation of Gaussian Beam in Anisotropic and Uniaxial Turbulent Media

Husnu Deniz Basdemir¹, Kholoud Elmabruk²

¹Gazi University, Türkiye;

²Sivas University of Science and Technology, Türkiye



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ID 26: Optimization of Electromagnetic Compatibility in Inverter Gate Driver Design

Yeda Olca, Fikret Yilmaz, Asim Yilmaz

AVL Research and Engineering Türkiye, Türkiye



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ID 203: FDTD Simulations on the Single-Mode Operation of Sion-Doped Si Waveguides for LIDAR Applications

Iremnur Duru¹, Atif Kerem Sanli², Metehan Ari¹, Ali Karatutlu¹,

Mustafa Demirtas³, Timucin Emre Tabaru¹

¹Sivas University of Science and Technology, Türkiye

²Abdullah Gul University, Türkiye

³Bursa Uludag University, Türkiye



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ID 200: Kapur's Entropy Thresholding-based Plug-and-Play ADMM for SAR Imaging

Orhan Tunc^{1,2}, Isin Erer¹

¹Istanbul Technical University, Türkiye

²TUBITAK BILGEM, Türkiye



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ID 34: X-band Radar Cross Section Reduction of a Radome Structure via Frequency Selective Surface Integration

Ahmet Resul Metin, Irem Aydin, Egemen Bilgin

Mef University, Türkiye



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Date: **29.11.2025, Saturday**

Hours: **16:45-17:30**

Hall: **BAOB Common Hall**

Session: **PS-6**

Subject: **Invited Talk**

Session Chair: Prof. Dr. **Ozgur USTUN**, Piri Reis University, Istanbul, Türkiye

Invited Talk - 6

**New-Generation Z-Source Converters:
A Paradigm Shift in Power Conversion Systems**

Prof. Ebrahim BABAEI

University of Tabriz, Tabriz, Iran



Abstract – Z-source converters provide efficient means for electric power conversion (dc-dc, dc-ac, ac-dc, ac-ac) between source and load in a wide range of applications. Z-source converters have been experiencing, in terms of research and applications, a constant growth during the last 20 years.

The efforts of research have led to a rapid development of different Z-source converter topologies, modulation techniques, and control strategies. Nevertheless, many interesting aspects, such as efficiency improvement, optimized parameters, and new applications, still require more investigation.

The continuous evolution of power electronics has driven the need for converter topologies that are not only more efficient but also more compact, reliable, and versatile. Among these, Z-source and quasi-Z-source converters have emerged as groundbreaking solutions by integrating unique impedance networks that provide buck-boost capability, enhanced reliability, and immunity against shoot-through conditions.

This talk will present recent advancements in new-generation Z-source converters, highlighting their innovative structures, modulation strategies, and application potential in renewable energy systems, electric vehicles, and future power grids.

Special attention will be given to how these converters overcome the limitations of conventional voltage- and current-source topologies, thereby offering a paradigm shift in high-performance power conversion.



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Date: **29.11.2025, Saturday**

Hours: **17:45-19:15**

Hall: **BAOB Common Hall**

Session 35: **SSA-2**

Subject: **Smart System Applications-2**

Session Chair: Assoc. Prof. **Mehmet Akif SENOL**, Istanbul Topkapi University,
Istanbul, Türkiye

ID 24: Real-Time Intelligent Speed Assistance with Multi-Source Speed-Limit Estimation and Compliance Logic

Onur Kolsuz, Eyup Ates, Tolga Bodrumlu

AVL Türkiye Research and Engineering, Türkiye



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ID 95: Advancing ADAS/AD Development through DevOps: A Framework for Continuous Testing and Simulation-Based Validation

Ali Furkan Aktas, Tahir Eren Mungan, Nurhan Yagci

AVL Türkiye Research and Engineering, Türkiye



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ID 2: Evaluating Spelling-Checking Algorithms for NLP in Technical Texts

Ahmet Toprak¹, Mehmet Toprak², Feyzanur Saglam Toprak³

¹Mission Investment Bank, Türkiye

²Istanbul Ticaret University, Türkiye

³Türkiye Finance Participation Bank, Türkiye



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ID 40: Enhanced Object Detection for Vehicle Safety through Multi-Sensor Fusion

Beyza Nur Erkan, Atacan Akpınar, Berke Ozbay, Doga Tik, Elif Aydin

Cankaya University, Türkiye



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ID 99: An Industrial Digital Twin Concept: Architectures, Use Cases, and Open-Source Testbed

Aykut Cubukcu, Necip Gozuacik, Selim Genctoy, Doga Celme, Erman Eksi, Yagmur Sabucu Sandal, Sibel Malkos

Siemens Industry and Trade Inc., Türkiye



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Date: **29.11.2025, Saturday**

Hours: **17:45-19:15**

Hall: **EMO Hall**

Session 36: **EQE**

Subject: **Energy Quality and Efficiency**

Session Chair: Prof. Dr. **Dimitrios TSIAMITROS**, University of Western Macedonia,
Greece

ID 174: Race Simulation and Energy Management System for a Solar Car

Ege Uzun, Can Akman, Mustafa Cagsak, Ali Eren Dag,
Alper Tolga Calik
Istanbul Technical University, Türkiye



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ID 183: Thermal Analysis and Lifetime Estimation of Solar Inverters

Najaf Najafli^{1,2}, Erdem Akboy¹
¹Yildiz Technical University; ²Win Solar Power, Türkiye



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ID 71: Application of ANN Models for Classifying Single-Phase Nonlinear Loads of Residential Systems under Wide-Ranging Random Voltage Distortions

Damla Agaca, Oktay Karakaya, Sevkett Canturk,
Murat Erhan Balci
Balikesir University, Türkiye



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ID 197: Power Factor-Based Energy Efficiency Approach in Synchronous Reluctance Motors

Helin Kahriman¹, Serhat Eryaman², Mustafa Alpaslan
Karabacak¹

¹Istanbul Beykent University, Türkiye

²Istanbul University-Cerrahpasa, Türkiye



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ID 223: Enhancing Solar Irradiance Prediction: A Physics-Informed Machine Learning Approach with Temporally Focused Training Windows

Jacques Asinyo¹, Oguzhan Ceylan², Alexis Polycarpou³

¹Marmara University, Türkiye; ²Kadir Has University, Türkiye

³Frederick University, Cyprus



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Date: **29. 11.2025, Saturday**

Hours: **17:45-19:15**

Hall: **MMO Hall**

Session 37: **BIOE**

Subject: **Biomedical Electronics**

Session Chair: Assist. Prof. **Aslihan KARTCI OZAKIN**, Yildiz Technical University,
Istanbul, Türkiye

ID 239: Comprehensive Review of RF Power Amplifiers for MRI

Mert Karademir, Fatih Okur, Oguzhan Kizilbey, Baki Karaboce
TUBITAK UME, Türkiye



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ID 152: Tree-Based Classification for Epilepsy Using Prioritized Electrode Combinations

Serhat Ismet Sargin, Mustafa Can Karatas, Aysa Jafarifarmand
Istanbul Bilgi University, Türkiye



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ID 118: Design and Implementation of a Smart Medication Dispensing System with Visual and Weight-Based Verification for Patient Safety

Muhammet Talha Dadak¹, Berker Sahin¹, Ataberk Yilmaz¹,
Sahin Gunduz¹, Ahmet Kagizman², Volkan Sezer¹

¹Istanbul Technical University, Türkiye

²Kirklareli University, Türkiye



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ID 63: A New Ensemble Learning Approach for Non-Invasive Gallstone Risk Prediction

Selahaddin Batuhan Akben, Hilal Yumrutas
Osmaniye Korkut Ata University, Türkiye



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ID 106: Water Quality Assessment Using Bioelectrical Impedance

Begum Ipek, Elif Seher Ipek, Revna Acar Vural, Aslihan Kartci
Yildiz Technical University, Türkiye



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Date: **29.11.2025, Saturday**

Hours: **17:45-19:15**

Hall: **MO Hall**

Session 38: **AI-5**

Subject: **Artificial Intelligence and Its Applications-5**

Session Chair: Prof. Dr. **Bilgin METIN**, Bogazici University, Istanbul, Türkiye

ID 130: Optimization of UAV Positioning: A Comparative Study of PSO, Greedy, and Hybrid Algorithms for Energy Efficiency and Handover Cost

Halil İbrahim Ozdemir¹, Mustafa Namdar², Arif Basgumus³,
Hamdi Melih Saraoğlu²

¹Kutahya Health Sciences University, Türkiye

²Kutahya Dumlupinar University, Türkiye

³Bursa Uludag University, Türkiye



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ID 98: From Text to Road: Fine-Tuned Large Language Models for Generating SUMO Road Networks

Cagri Guzey, Ege Ozdemir, Yahya Kara

AVL Türkiye Research and Engineering, Türkiye



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ID 111: Seamless Agentic Commissioning: AI Enhanced Agentic Collaboration in the Loop

Erdem Cimenoglu, Necip Gozuacik

Siemens Industry and Trade Inc., Türkiye



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ID 4: Automated Document Processing Using LLMs and n8n: An End-to-End Framework

Ahmet Toprak¹, Feyzanur Saglam Toprak²

¹Mission Investment Bank, Türkiye

²Türkiye Finance Participation Bank, Türkiye



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ID 196: Securing Agentic AI with the NIST Cybersecurity Framework 2.0

Bilgin Metin¹, Hikmet Sami Karaca¹, Faisal Iradat²,

Martin Wynn³

¹Bogazici University, Türkiye

²Institute of Business Administration, Pakistan

³University of Gloucestershire, United Kingdom



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