جامعة الحسن الثاني بالدار البيضاء
UNIVERSITÉ HASSAN II DE CASABLANCA

15 ans 2011-2026
ENSAM
ÉCOLE NATIONALE SUPÉRIEURE D'ARTS ET MÉTIERS
UNIVERSITÉ HASSAN II DE CASABLANCA

المدرسة العليا للتكنولوجيا - الداخلة
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ÉCOLE SUPÉRIEURE DE TECHNOLOGIE - DAKHLA

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UNIVERSITÉ IBN ZOHR

2nd International Conference on Electrical Systems & Smart Technologies

ICESST 2026

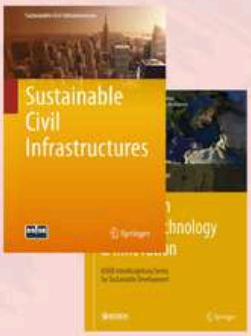


CASABLANCA, MOROCCO

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Program





About the ICESST Conference

The second edition of the International Conference on Electrical Systems and Smart Technologies (ICESST 2026) aims to provide an international forum for researchers, academics, engineers, and industry professionals to present their scientific findings, exchange technological innovations, and strengthen collaboration between academia and industry. The conference focuses on intelligent electrical systems, renewable energy, artificial intelligence, and digital technologies. Its scope covers emerging topics including smart grids, Industry 4.0, electric mobility, the Internet of Things (IoT), and sustainable energy solutions. The program will feature keynote lectures by renowned experts, scientific sessions, and thematic workshops.

Building on the success of its first edition, held in Dakhla in December 2024, ICESST 2026 is organized with the contribution of ENSAM Casablanca and EST Dakhla, aiming to promote scientific research, encourage academic and industrial collaboration, and advance innovative solutions to current industrial and sustainable development challenges.



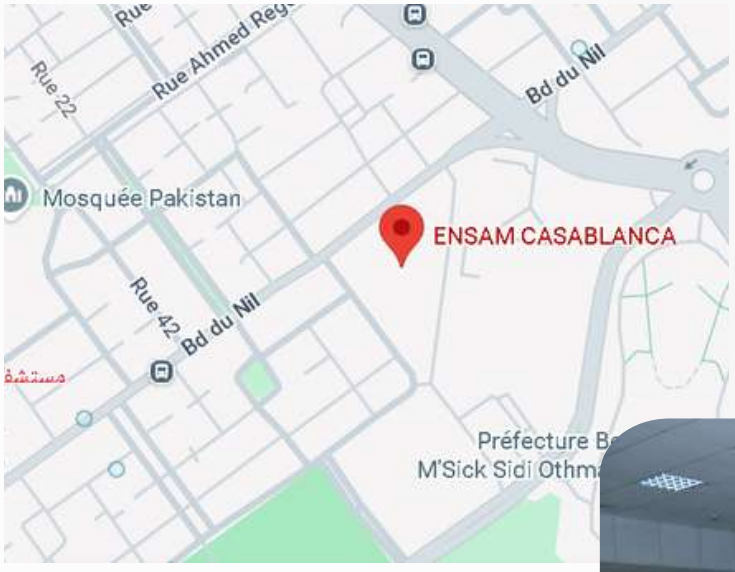
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ICESST 2026 VENUE

ICESST 2026











ICESST 2026

ICESST 2026 VENUE







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WELCOME TO ICESST'2026

We are delighted to welcome you to the 2nd edition of the International Conference on Electrical Systems and Smart Technologies (ICESST 2026), taking place in the beautiful city of Casablanca, Morocco, from November 24 to 26, 2026. This conference marks a significant milestone as a global platform for scientists, researchers, and professionals passionate about Electrical Systems and Smart Technologies.

As the second edition, ICESST 2026 aspires to establish a premier forum for exchanging cutting-edge knowledge, fostering collaboration, and addressing the challenges and opportunities in the rapidly evolving fields of electrical engineering and smart technologies. The event will feature an exciting program, including plenary sessions, technical presentations, and high-level discussions that delve into the latest scientific and technological advancements.

Our heartfelt gratitude goes to our distinguished speakers, dedicated sponsors, tireless volunteers, and everyone whose efforts have been instrumental in making this inaugural conference a success. Your commitment and support have been essential in turning this vision into reality, and we deeply appreciate your contributions to this exciting event.

We look forward to welcoming you to this unique event and sharing moments of inspiration and learning together at ICESST 2026.

GENERAL CHAIRS



Pr. Imad ABOUDRAR

EST Dakhla, IBN ZOHR University , Morocco



Pr. Ilias OUACHTOUK

ENSAM Casablanca, Hassan II University, Morocco

ICESST 2026

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WELCOME TO ICESST'2026

ICESST, 2024_DAKHLA









The first edition of the International Conference on Electrical Systems and Smart Technologies (ICESST 2024), jointly organized by the National School of Arts and Crafts of Casablanca (ENSAM Casablanca) and the Higher School of Technology of Dakhla (EST Dakhla), took place from December 11 to 13, 2024, in Dakhla. The choice of this location was symbolic, carrying several messages and meanings for our country. Dakhla is a true crossroads of cultures and ideas, offering an ideal setting for dialogue, knowledge exchange, and innovation, which are among the conference's fundamental values.

The event provided an opportunity for discussions and the exchange of scientific knowledge and innovations regarding research advancements, as well as current and future challenges and opportunities in the field of renewable and sustainable energy.

The conference brought together numerous participants from academic, industrial, and regional sectors, including researchers, policymakers, engineers, PhD students, and other professionals with an interest in electrical systems and smart technologies. The topics addressed at ICESST 2024 covered a wide range of fields, including renewable energy technologies, energy efficiency, electrical systems infrastructure, computer science, smart technology infrastructure, and artificial intelligence. In addition, several workshops and tutorials were organized during this edition.

WELCOME TO ICESST'2026

ICESST, 2024_DAKHLA




مجلس جهة الداخلة وادي الذهب











CONFERENCE TOPICS

02

At the scientific programme of the conference:

- Plenary lectures and keynote presentations dealing with scientific topics on the following themes:



- **Advanced Electrical Systems Infrastructure in Smart Cities**
  - Smart cities use advanced electrical systems to optimize energy delivery through smart grids, incorporating renewable sources and real-time data from IoT devices. By leveraging AI, cities can predict energy demand and allocate resources efficiently, promoting sustainability.



- **Artificial Intelligence and Optimization in Engineering**
  - Artificial Intelligence (AI) and optimization enhance engineering by improving design, efficiency, and decision-making. AI techniques, like machine learning, model complex systems and automate processes, while optimization algorithms identify optimal solutions to reduce costs and enhance performance.



- **Real-time Monitoring and Biomedical Applications**
  - Real-time monitoring in biomedical applications revolutionizes healthcare by providing continuous, accurate data on patients' vital signs and health metrics. This technology enables early detection of medical issues, personalized treatment plans, and immediate intervention, improving patient outcomes.

CONFERENCE TOPICS



- **Smart Infrastructure and Renewable Energy Systems**
  - Smart infrastructure and renewable energy systems work together to optimize energy efficiency and sustainability in urban environments. These systems integrate technologies like smart grids and IoT sensors to manage energy consumption and distribution effectively.



- **Smart Technologies, E-Mobility, and Industry 4.0**
  - Smart technologies, e-mobility, and Industry 4.0 are transforming industries by enhancing connectivity, automation, and efficiency. E-mobility solutions, such as electric vehicles, contribute to sustainable transportation, while Industry 4.0 leverages IoT and AI to revolutionize manufacturing and supply chains.



- **Advanced Energy Management and Smart Grids**
  - Advanced energy management and smart grids optimize electricity distribution and consumption through real-time data and automation. Smart grids integrate renewable energy sources, improving efficiency and reducing reliance on fossil fuels.

- Thematic sessions highlighting research work presented in the form of presentations and posters.
- Tutorials introducing new themes and topics focusing on innovation.

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ICESST 2026

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Pr. Azzedine El Midaoui

Minister of Higher Education,
Scientific Research, and Innovation



Pr. Nabil HAMINA

President of IBN ZOHR
University, Morocco



Pr. Houssine AZEDDOUG

President of Hassan II
University, Morocco



Pr. Zouhir MAHANI

Director of
EST Dakhla



Pr. Abdelmajid BADRI

Director of
ENSAM Casablanca

HONORARY GUESTS

04

Royaume du Maroc
Ministère de l'Enseignement Supérieur,
de la Recherche Scientifique et de l'Innovation



PR. AZZEDINE EL MIDAOUI

MINISTER OF HIGHER EDUCATION, SCIENTIFIC RESEARCH, AND INNOVATION

Biography : Prof. Azzeddine El Midaoui is the Minister of Higher Education, Scientific Research and Innovation of the Kingdom of Morocco. He holds a Ph.D. from the University of Montpellier, France (1988), and a Doctorat d'État from Mohammed V University in Rabat, Morocco (1991).

He began his academic career at the Faculty of Sciences in Kenitra, where he held several leadership positions, including Vice-Dean, Director of the Doctoral Studies Center in Sciences and Technology (2007–2009), and Vice-President for Scientific Research and Cooperation (2009–2013). He subsequently served as Dean of the Faculty of Sciences in Kenitra (2013–2014).

From 2014 to 2023, Prof. El Midaoui served as President of Ibn Tofail University and President of the Conference of Moroccan University Presidents, contributing to the development and coordination of higher education and scientific research at the national level. He later served as Director of the International Water Research Institute (IWRI) at Mohammed VI Polytechnic University (2023–2024).

Beyond his university leadership responsibilities, Prof. El Midaoui has contributed to national institutions involved in education, research, and academic governance. He has been a member of the Foundation of the Academy of the Kingdom of Morocco since 2017. He also served on the Higher Council for Education, Training and Scientific Research, including as Chair of its Governance Commission (2014–2019), and was a member of the National Commission for the Coordination of Higher Education (2018–2023).

His academic and institutional career reflects extensive experience in university leadership, scientific research management, higher education governance, and the development of Morocco's research and innovation ecosystem.

HONORARY GUESTS

جامعة ابن زهر
UNIVERSITÉ IBN ZOHR



PR. NABIL HAMINA

PRESIDENT OF IBN ZOHR UNIVERSITY, MOROCCO

Biography : Mr. Nabil HMINA is a distinguished Moroccan academic, researcher, and university leader, currently serving as President of Ibn Zohr University in Agadir, Morocco. He holds a PhD in Engineering Sciences from the University and École Centrale de Nantes, France, obtained in 1994, following earlier studies in Physics and Fluid Mechanics. He also obtained his Habilitation à Diriger des Recherches (HDR) from Ibn Tofaïl University in 2002, marking an important milestone in his academic career.

Throughout his professional journey, Professor HMINA has held several prominent academic and administrative positions, contributing significantly to the development and modernization of higher education in Morocco. He served as Vice-President of Ibn Tofaïl University, responsible for academic affairs and information technologies, from 2004 to 2011, and subsequently as Director of the National School of Applied Sciences of Kénitra (ENSA Kénitra) from 2011 to 2018. From 2018 to 2022, he served as President of Sultan Moulay Slimane University in Béni Mellal, where he contributed to institutional development and the improvement of academic and research activities. At the national level, he also chaired the Higher Commission for University Degree Equivalencies and contributed to major university digitalization initiatives, notably the implementation and development of the APOGÉE student information management system.

HONORARY GUESTS



PR. HOUSSINE AZEDDOUG

PRESIDENT OF HASSAN II UNIVERSITY, MOROCCO

Biography : Mr. Houssine Azeddoug has been appointed President of Hassan II University in Casablanca. He earned a Doctorate of State in Genetics and Molecular Biology from Ibn Zohr University in 1994 and a Doctorate from Paris VII University in 1991, specializing in Population Genetics and Evolution.

Mr. Azeddoug previously served as Director of the École Normale Supérieure under Hassan II University in Casablanca, Coordinator of the Academic Affairs Commission of the Hassan II University Council, and Vice President of the Regional University Sports League at Hassan II University in Casablanca.

He has to his credit several national and international scientific publications and communications, holder of 2 restriction enzymes licenses operated by the New England Biolabs Company (USA), Coordinator of the research team in Genetics and Molecular Biology and Director of several State or National thesis as well as president or member in several national thesis juries or in joint supervision.

Azeddoug was also Member or Coordinator of several national or international funded research projects, Expert with several authorities (Ministry of Supervision, ANEAQ, CNRST ...) as well as member of the team responsible for monitoring the Emergency Program of Hassan II Aïn Chock University.

Azeddoug was also President of the Moroccan Society of Genetics and Molecular Biology (since 1996), Vice-President of the Maghrebian Association of Biotechnology (Tunisia, 2005-2009), Institutional Coordinator of the Pole of Competence in Soil Microbiology and plant biotechnology (MiSoBioP), (2002-2008) and member of several national and international scientific societies.

HONORARY GUESTS

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ÉCOLE SUPÉRIEURE DE TECHNOLOGIE - DAKHLA



PR. ZOUHIR MAHANI

DIRECTOR OF EST DAKHLA

Biography : Born in 1979, Professor Zouhir Mahani earned his doctorate in 2008 in the field of applied mathematics and computer science. His academic and professional journey is distinguished by extensive experience and a steadfast commitment to various fields.

In the realm of education, he has held numerous responsibilities, including module coordinator, program director, and department head. He has also made significant scientific contributions, including high-level publications, the supervision of doctoral theses, and the attainment of a patent.

In addition, he has been actively involved in managing and implementing international projects such as Tempus, Erasmus, and PHC. His expertise also encompasses institutional evaluation, further enhancing the quality and influence of academic institutions.

A professor at Ibn Zohr University since 2009, he has served as the director of the École Supérieure de Technologie (EST) in Dakhla since 2021, where he continues to contribute to the advancement of higher education and research.

HONORARY GUESTS



PR. ABDELMAJID BADRI

DIRECTOR OF ENSAM CASABLANCA

Biography : Abdelmajid Badri is a holder of a doctoral degree in Electronics and Image Processing in 1992 at the University of Poitiers– France. In 1996, he obtained the HDR Degree of the authorization to Manage Researches (Habilitation à Diriger des Recherches: HDR) to the University of Poitiers– France, on the image processing. Qualifed by the CNU-France in 61th section (informatics Engineering, Automatic and Signal processing. He is an University Professor (PES-D) at the University Hassan II of Casablanca - Morocco (FSTM, ENSAMC) where he teaches the electronics, the signal processing, image processing and telecommunication (Department of Electric Engineering). He is a member of the laboratory EEA&TI (Electronics, Electrotechnics, Automatic and information Processing) which he managed since 1996.

The research works of A. Badri concerns the communication and Information Technology (Electronics Systems, Signal/Image Processing and Telecommunication). He is President of the Moroccan Association of Information Technology (AMTI). He managed several doctoral theses. He is a co-author of several national and international publications. He is responsible for several research projects financed by the ministry or by the CNRST or by the industrialists. He was member of several committees of programs of international conferences, reviewer of several revues and chairman of several international congresses in the same domain. He is a member and coresponsible in several scientifc associations in touch with his domain of research. He is an expert CNRST and Ministry.

He was responsible for several academic structures (Director of ENSAM Casablanca, Director of EST Casablanca, Vice Dean FSTM, Head of the Electric Engineering Department).

KEYNOTE SPEAKERS



PR. EL BADAOUI MOHAMED

Safran Group Expert, France



PR. FAUSTO PEDRO GARCÍA MÁRQUEZ

University of Castilla La Mancha, Spain



PR. KHALID DAHI

Ecole Centrale Casablanca, Maroc



MIKAA BLUGEON-MERED

Université du Québec à Trois-Rivières (UQTR), Canada



PR. ELHOUSSIN ELBOUCHIKHI

CY Cergy Paris Université / SATIE, France

KEYNOTE SPEAKERS

When Noise Speaks: Decoding Aerospace Faults Through Signal Processing

This keynote explores advanced signal processing techniques for the early detection of faults in rotating machinery, particularly in aerospace applications. Through practical examples, it highlights the benefits of cyclostationarity for extracting weak fault signatures from noisy vibration signals. It also introduces compressed sensing as a promising approach to reducing data acquisition while preserving essential diagnostic information for embedded health monitoring.



Pr. EL BADAOUI Mohamed
Safran Group Expert, France



Pr. Fausto Pedro García Márquez
University of Castilla La Mancha, Spain

The Cloud and the Wind: Artificial Intelligence and the Geometry of Reliability in Turbines

The exponential growth of wind energy demands advanced cloud-based methodologies coupled with artificial intelligence to ensure operational availability and optimize maintenance strategies in wind turbines. This speech presents a comprehensive framework developed within the Ingeniot cloud architecture, integrating AI-driven analytics, Fault Tree Analysis (FTA), efficient conversion to Binary/Multivalued Decision Diagrams (BDD/MDD), and real-time SCADA telemetry. By leveraging artificial intelligence to reduce logical complexity and compute dynamic importance measures (Birnbaum, Criticality, Fussell-Vesely, RAW, and RRW), the cloud platform evaluates system unavailability and prioritizes predictive interventions. This work demonstrates how cloud computing and machine intelligence successfully transform qualitative failure models into quantifiable, automated strategic decisions for the renewable energy sector.

KEYNOTE SPEAKERS

DATA-DRIVEN PREDICTIVE MAINTENANCE IN RAILWAYS: APPLICATION TO CRITICAL COMPONENTS OF HIGH-SPEED TRAIN



Pr. Khalid DAHI
Ecole Centrale Casablanca

High-speed trainsets rely on a small number of safety-critical components whose failure can lead to service disruption or derailment: axle-box bearings, wheels, gearboxes, traction motors and suspensions, mostly concentrated in the bogie. These components degrade slowly. Yet today's wayside hot-box detectors and periodic inspections usually detect faults only close to functional failure, as several derailment investigations have shown. With Morocco's Rail Plan 2040 set to expand the highspeed and conventional network substantially, moving from reactive and preventive maintenance to data-driven predictive maintenance has become a national priority.

This keynote first reviews the state of the art in condition monitoring of critical railway components, from signal processing to machine and deep learning. It then identifies four open scientific challenges: nonstationary, low-SNR signals; scarce labelled fault data and poor generalisation to new operating conditions; multi-sensor data fusion; and explainability for industrial acceptance.
Our group's data-driven contributions are presented within a four-level validation framework running from laboratory benches to real operation:

- Envelope analysis and bearing kinematic frequencies;
- Multisensor fusion of continuous-wavelet scalograms with transfer learning;
- Blind source separation by non-negative matrix factorisation;
- A physics-guided graph neural network for joint diagnosis of motor, gearbox and axle boxes, combining cross-attention with physical indicators and adversarial domain adaptation (95–99.97% per-component accuracy on the BJTU-RAO bench);
- A low-cost portable edge-AI device for bearing diagnosis (99.7% healthy/faulty screening).

The talk closes with open research questions for the community: transfer from bench to fleet, learning from rare faults, prognosis with uncertainty, and trustworthy, certifiable AI for railway maintenance.

Keywords: predictive maintenance; high-speed rail; condition monitoring; bearing fault diagnosis; signal processing; graph neural networks; edge AI.

KEYNOTE SPEAKERS



Mikaa BLUGEON MERED
Université du Québec à Trois-Rivières (UQTR), Canada

Hydrogen, Derivatives & AI: Lessons for Morocco from Hormuz, China, and India

As global hydrogen markets evolve amid geopolitical disruptions, industrial competition, and technological innovation, Morocco faces critical choices in developing its clean hydrogen economy.

Drawing on the geopolitical consequences of the Strait of Hormuz crisis, China's rapidly evolving hydrogen, ammonia, and methanol industries, and India's ambitious clean hydrogen strategy, this keynote explores three sets of strategic lessons for Morocco.

Particular attention will be given to energy security, industrial integration, domestic value creation, and the role of artificial intelligence in optimizing hydrogen production, infrastructure, and emerging industrial ecosystems.

Ultimately, the presentation will examine how Morocco can leverage international experiences to move beyond individual projects and develop competitive, resilient, and interconnected hydrogen value chains, bridging the gap between technical feasibility, economic viability, and industrial scalability.

KEYNOTE SPEAKERS

Powering the Future of Electric Mobility: Innovations in Power Electronics, Traction Drives, and Smart Charging



Pr. Elhoussin ELBOUCHIKHI
CY Cergy Paris Université / SATIE, France

In a global context characterized by the urgent need to address climate change and accelerate the energy transition, the electrification of end-use sectors represents a key strategy for reducing greenhouse gas emissions and achieving international decarbonization targets. The 31st United Nations Climate Change Conference (COP31), scheduled to take place in November 2026 in Antalya, Türkiye, highlights the importance of accelerating this transition, with the ambition of increasing electricity's share of global final energy consumption to 35% by 2035.

In this context, electric mobility plays a pivotal role in transforming the transportation sector, while introducing new scientific and technological challenges related to increasing power and energy requirements, electric vehicle performance, and grid integration. This keynote speech will provide an overview of the major technological advances and innovations shaping the future of electric mobility, with a particular focus on energy requirements, electric vehicle technologies, electric traction systems, and charging infrastructure. Special attention will be devoted to innovations in power electronics, smart charging solutions, and optimal energy management strategies aimed at mitigating the impacts of large-scale electric vehicle integration on power distribution networks. Finally, key technological challenges and future research directions will be discussed to support the development of more efficient, intelligent, and sustainable electric mobility, thereby contributing to the global energy transition and climate change mitigation.

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Program Overview

Program Overview of Tuesday, 24 Nov 2026	
9h00–10h00	**Welcome and Registration**
10h00–11h00	**Opening Ceremony** Moderators : Pr. Ossama MERROUN • Welcome Adress by Presidents and Directors • Opening Speeches by Guests and Chairs
11h00– 11h30	• *Video Recap of the First Edition – ICESST 2024* • *Presentation of trophies to conference guests and sponsors.*
11h30– 12h00	**Coffee break**
12h00– 14h00	**Plenary sessions** Speaker: **Prof. EL BADAOUI Mohamed (Expert Groupe Safran, France):** *When Noise Speaks: Decoding Aerospace Faults Through Signal Processing* *Plenary session chair: Pr. Soumia EL HANI* Speaker: **Prof. Elhoussin ELBOUCHIKHI (CY Cergy Paris Université / SATIE, France):** Powering the Future of Electric Mobility: Innovations in Power Electronics, Traction Drives, and Smart Charging *Plenary session chair: Pr. Radouane MAJDOUL*
14h00– 15h00	**Lunch break**
15h00– 16h00	• Guest speaker: **Oualid Mazouzi – DBM Maroc** ***Representative of Accent Technologies, Morocco :*** *Presentation of Accent and its activities* **Accent Technologies, Morocco** *Moderator: Khaoula CHAOUI EL GHOR*

ICESST'2026 PROGRAM

<table>
<tr><td>16h00- 17h00</td><td colspan="2">Round Table
Theme: Advancing AI Applications Across Industry, Transportation and Education

Moderator : Pr. Mourad ZEGRARI
Participants :
• Decision-making sector: Representatives from government bodies, regional authorities, and policy-making institutions.
• Industrial sector: Key players from energy companies, infrastructure providers, and technology firms.
• Academic sector: Researchers and experts from universities and research institutions specializing in renewable energy and hydrogen technologies.</td></tr>
<tr><td>17h00–17h30</td><td colspan="2">Coffee break</td></tr>
<tr><td rowspan="4">17h30–19h00</td><td>Parallel sessions (On-site – ICESST)</td><td>Parallel sessions (Online – ICESST)</td></tr>
<tr><td>• OS01 : Advanced Control and Fault Detection Systems
• OS02: Intelligent Transportation and Electric Mobility
• OS03 : Wireless Technologies, Biomedical Engineering and Advanced Materials</td><td>• ON01 : Artificial Intelligence, Smart Learning and Management Innovations
• ON02: Renewable Energy and Smart Grids
• ON03 : Advanced Control and Power Electronics</td></tr>
<tr><td>Parallel sessions (Online – Special Sessions)</td><td>Parallel sessions (Online – Special Sessions)</td></tr>
<tr><td>• SS01: Photovoltaic Systems and Parameter Optimization
• SS02 : Artificial Intelligence, Digital Health and Smart Learning</td><td>• SS03 : Advanced Materials, Photonics and Wireless Technologies
• SS04 : Sustainable Energy and Intelligent Control Systems</td></tr>
</table>

ICESST'2026 PROGRAM

Program Overview of wednesday, 25 Nov 2026

09h30-10h00	**Welcome and Registration**	
10h00-11h00	**Keynote Speaker** • Speaker: **Prof. Khalid DAHI** ***(Ecole Centrale Casablanca, Maroc):*** Data-driven predictive maintenance in railways: application to critical components of high-speed train *Moderator: Pr. Abdelhafid AIT ELMAHJOUB*	
11h00-12h00	**Keynote Speaker** • Speaker: **Mikaa BLUGEON MERED (Université du Québec à Trois-Rivières, Canada):** Hydrogen, Derivatives & AI: Lessons for Morocco from Hormuz, China, and India *Moderator: Pr. Loubna EL FAQUIH*	
12h00-12h30	**Coffee break**	
12h30-13h30	**Keynote speaker** • Speaker: **Prof. Fausto Pedro García Márquez** ***(University of Castilla La Mancha, Spain)***: The Cloud and the Wind: Artificial Intelligence and the Geometry of Reliability in Turbines. *Moderator: Pr. Rihab BENAICH*	
13h30-14h30	**Lunch break**	
14h30-16h30	**Parallel sessions (Onsite – ICESST)** • **OS04** : Artificial Intelligence, Language Models and Digital Innovations • **OS05** : Renewable Energy and Smart Microgrids • **OS06** : Industry 4.0, Smart Manufacturing and Digital Trust • **OS07** : Artificial Intelligence, Optimization and Intelligent Decision Systems	**Parallel sessions (Online – ICESST)** • **ON04** : Biomedical Engineering and Smart Health Solutions • **ON05** : Digital Twins, Predictive Maintenance and Smart Mobility • **ON06** : Cybersecurity, Safety and Intelligent Connected Systems • **ON07** : Engineering Optimization, Energy Efficiency and Advanced Applications
16h30-17h00	**Coffee break**	
	Closing Ceremony Best paper awards and closing remarks.	

ICESST'2026 PROGRAM

Online Sessions Links

Main Conference Events & Virtual Access

Venue	Events / purpose	Google Meet link
Main Conference Hall (Amphitheater)	Opening ceremony; plenary keynotes; invited talks; round table; closing ceremony	Join Main Hall

Online Scientific Sessions – Permanent Google Meet Links

Virtual room	Tuesday, 24 Nov | 17:30–19:00	Wednesday, 25 Nov | 14:30–16:30	Meeting link
Room 1	ON01 – Artificial Intelligence, Smart Learning and Management Innovations	ON04 – Biomedical Engineering and Smart Health Solutions	Join Room 1
Room 2	ON02 – Renewable Energy and Smart Grids	ON05 – Digital Twins, Predictive Maintenance and Smart Mobility	Join Room 2
Room 3	ON03 – Advanced Control and Power Electronics	ON06 – Cybersecurity, Safety and Intelligent Connected Systems	Join Room 3
Room 4	SS01 – Photovoltaic Systems and Parameter Optimization	ON07 – Engineering Optimization, Energy Efficiency and Advanced	Join Room 4
Room 5	SS02 – Artificial Intelligence, Digital Health and Smart Learning	No scheduled session	Join Room 5
Room 6	SS03 – Advanced Materials, Photonics and Wireless Technologies	No scheduled session	Join Room 6
Room 7	SS04 – Sustainable Energy and Intelligent Control Systems	No scheduled session	Join Room 7

PROGRAM DETAILS

Tuesday, 24 November 2026 | 17h30 | On-site – ICESST

On-site – ICESST — Room A	
OS01: Advanced Control and Fault Detection Systems	
Session chairs	Elmehdi BENMALEK, Anas HAD, Khalid DAHI
17:30–17:40	**Paper ID:** 28 **Title:** Unsupervised Health-Indicator Construction for Digital Twin-Oriented Induction-Motor Monitoring: A Preliminary Study on the IMS Bearing Dataset **Authors:** Oumaima NOUARI, Mourad ZEGRARI and Ilias OUACHTOUK
17:45–17:55	**Paper ID:** 34 **Title:** Adaptive Kalman Filtering for Robust State-of-Charge Estimation of Aged Lithium-Ion Batteries: A Multi-Cell Comparative Study **Authors:** Hafiz Asadullah Baig, Khadija El Kamouny, Oussama El Fallahi, Ahmed Chebak **Presenter:** Hafiz Asadullah Baig
18:00–18:10	**Paper ID:** 62 **Title:** How Training Scenario Composition Affects the Generalisation of Automatically Tuned Vehicle Lateral Controllers **Authors:** Aala Eddine Bousskoul; Ilias Ouachtouk; Abdelhafid Ait Elmahjoub; Imad Aboudrar
18:15–18:25	**Paper ID:** 92 **Title:** A Graph-Based Multimodal Framework with Physics-Informed Fusion and Domain-Adversarial Learning for Predictive Maintenance of High-Speed Train Bogies **Authors:** Rihabe Kharkhach, Meryem Abtane, and Khalid Dahi
18:30–18:40	**Paper ID:** 91 **Title:** Experimental Sparse Reconstruction of Randomly Sampled Bearing Vibration Signals for Fault Diagnosis **Authors:** Anas HAD; Taieb CHARFI; Mohamed Habib FARHAT; Mohamed EL BADAOUI **Presenter:** HAD Anas
18:45–18:55	**Paper ID:** 88 **Title:** Robust Composite Sliding Mode Control of an Underactuated Single-Link Flexible Manipulator under Actuator Disturbances **Authors:** Lahssan BEN TARLA; Naoufal BOUKTIB; YASSINE ABBOUCH; Abdelhafîd AIT ELMAHJOUB
Presentation format: 10 minutes for the talk + 5 minutes for questions and transition.	

PROGRAM DETAILS

Tuesday, 24 November 2026 | 17h30 | On-site – ICESST

On-site – ICESST — Room B	
OS02: Intelligent Transportation and Electric Mobility	
Session chairs	Mourad ZEGRARI, HICHAM QABOUCHE, LAHSSAN BEN TARLA
17:30–17:40	**Paper ID:** 53 **Title:** A Comparative Evaluation of EKF, UKF, and Particle Filter Sensor Fusion for Vehicle Localization under Simulated Adverse Weather **Authors:** Hind Majdoub; Ilias Ouachtouk; Abdelhafid Ait Elmahjoub **Presenter:** HIND MAJDOUB
17:45–17:55	**Paper ID:** 56 **Title:** Design and Optimization of Fast-Charging Systems for Electric Vehicle Batteries: A Comprehensive Review of Converter Architectures, Charging Strategies, Battery Constraints, and Grid Integration **Authors:** KAILECH Achraf and SAHBANI Sana and KCHIKACH Mustapha **Presenter:** KAILECH Achraf
18:00–18:10	**Paper ID:** 59 **Title:** A Conceptual Framework for Distance-Induced Localization of AGV's in Semi-Dynamic Environments **Authors:** Koffi ADONKO, Hicham QABOUCHE, Mourad ZEGRARI **Presenter:** koffi carlos Adonko
18:15–18:25	**Paper ID:** 79 **Title:** A Generative-AI-Augmented Self-Learning Digital Twin for Energy Optimization and Predictive Maintenance in Railway Traction Chains **Authors:** Mehdi FARAJ; Ihssane CHTOUKI; Houssam Eddine CHAKIR; Hasna NHAILA
18:30–18:40	**Paper ID:** 86 **Title:** A Review of Energy Management Strategies for Battery-Supercapacitor Electric Vehicles **Authors:** Chaimae Dada, Lahssan Bentarla, Yassine ABBOUCH, Abdelhafid Ait Elmahjoub **Presenter:** Dada Chaimae
18:45–18:55	**Paper ID:** 97 **Title:** AI-Assisted H-Shaped Terahertz Patch Antenna with Metamaterials for Biomedical Applications **Authors:** Kaoutar Saidi Alaoui

Presentation format: 10 minutes for the talk + 5 minutes for questions and transition.

PROGRAM DETAILS

Tuesday, 24 November 2026 | 17h30 | On-site – ICESST

On-site – ICESST — Room C	
OS03: Wireless Technologies, Biomedical Engineering and Advanced Materials	
Session chairs	Ilias OUACHTOUK, Soufiane EL MOUMNI, Mouaad MOHY-EDDINE
17:30–17:40	**Paper ID:** 24 **Title:** Comparative Performance Evaluation of TCP CUBIC and TCP NewReno Using ns-3 Under Variable Network Conditions **Authors:** Soufiane Ait Bousselham; Nabil El Fezazi; Mohamed Fahim; Khalid Housni; Douae Zbakh **Presenter:** Soufiane Ait Bousselham
17:45–17:55	**Paper ID:** 27 **Title:** Target Selection in Cardiac Inverse Problems from Non-Invasive Measurements **Authors:** Hermann Agossou; Omar Ailal; Kawtar Zerhouni; Chafik El Kihal; Abdellah Hamdaoui; Noureddine Damil **Presenter:** Hermann Agossou
18:00–18:10	**Paper ID:** 51 **Title:** Development and Comparison of Energy Management Strategies for a Hybrid PV–Wind–Hydrogen Microgrid **Authors:** TIENDREBEOGO Baowendsom Arlette ; MAHA Annoukoubi
18:15–18:25	**Paper ID:** 50 **Title:** Numerical Energy-Flow Assessment and Open-Circuit PMSG Validation for a VAWT Micro-Wind System with P&O MPPT **Authors:** - Elhadj Sékou DICKO; - Maha ANNOUKOUBI
18:30–18:40	**Paper ID:** 74 **Title:** Structural and Optical Tuning of La2NiMnO6 via Yttrium substitution for Photovoltaic Applications **Authors:** Hamza Ouachtouk; Said Azerblou; Amine Harbi; Mohammed Aymane Bossi; El mustapha El-aissi; El mostafa Tace **Presenter:** Hamza Ouachtouk
18:45–18:55	**Paper ID:** 96 **Title:** Beyond Network Lifetime: A Critical Analysis of Performance Metrics in Energy-Efficient Wireless Sensor Networks **Authors:** Hicham QABOUCHE

Presentation format: 10 minutes for the talk + 5 minutes for questions and transition.

PROGRAM DETAILS

Tuesday, 24 November 2026 |17h30 | Online – ICESST

Online – ICESST — Virtual room 1 https://meet.google.com/dzm-rnph-any	
ON01: Artificial Intelligence, Smart Learning and Management Innovations	
Session chairs	Mohamed AZMI, Mourade Azrour, HISSOU Hasna
17:30–17:40	**Paper ID:** 16 **Title:** Artificial intelligence Application in Automotive Supply Chain Management: A systematic literature review **Authors:** TOUMI Salma; SARIR Hicham **Presenter:** TOUMI SALMA
17:45–17:55	**Paper ID:** 22 **Title:** Adaptive Learning Systems in the Age of Generative AI: A Systematic Literature Review and the Seven-Layer Taxonomy **Authors:** Diae Hajib; Badr Hssina **Presenter:** Diae Hajib
18:00–18:10	**Paper ID:** 43 **Title:** Literature review on the evolution of the human factor role from previous industrial revolutions to industry 4.0 **Authors:** Anass Mortada; Aziz Soulhi **Presenter:** Anass Mortada
18:15–18:25	**Paper ID:** 47 **Title:** Mega-Events and Emerging Economies: Companies opinion on Co-Hosting the 2030 FIFA World Cup **Authors:** BENNIS Ghita; RAHIM Zineb; EL AMRAOUI Hanane; EL BELLARI Mounir **Presenter:** Rahim zineb
18:30–18:40	**Paper ID:** 64 **Title:** Machine learning in the service of management control: from learning paradigms to anomaly detection **Authors:** Mariem AMEDJAR, Walid SOUFIANI, Leila EL GNAOUI, Abdessamad DINE, and Abdeljalil SAKAT **Presenter:** Mariem AMEDJAR

Presentation format: 10 minutes for the talk + 5 minutes for questions and transition.

PROGRAM DETAILS

Tuesday, 24 November 2026 |17h30 | Online – ICESST

Online – ICESST — Virtual room 2 https://meet.google.com/mvk-wjbw-ewo	
ON02: Renewable Energy and Smart Grids	
Session chairs	MAHA ANNOUKOUBI, Ahmed EL MOUKHTARI, Marouane RAYYAM
17:30–17:40	**Paper ID:** 15 **Title:** Short-Term Solar Power Forecasting Using a Validation-Weighted Hybrid Tree Ensemble **Authors:** Youssef Sadik; Ali Nejmi; Lahoucine Oumiguil; Mohamed Baite; Issam Chtaitif **Presenter:** Youssef Sadik
17:45–17:55	**Paper ID:** 18 **Title:** Forecast-Assisted ANN–GA Energy Dispatch for a Renewable Urban Microgrid **Authors:** Aymane Amalaoui; Aziz El Mrabet; Mohammed Boussetta
18:00–18:10	**Paper ID:** 75 **Title:** Comparative Study and Smart Optimization of Wind Micro-Grid Systems for Water Pumping Applications **Authors:** Tarik El Allaoui, Lahcen Amri, Smail Zouggar and Mohamed Elhafyani **Presenter:** Tarik El Allaoui
18:15–18:25	**Paper ID:** 85 **Title:** Digital Transformation of Morocco's Power Grid: Current State Assessment, Gap Analysis, and Mitigation Roadmap **Authors:** Hind Lakhal, Mourad Zegrari, Ayoub Bahnasse
18:30–18:40	**Paper ID:** 98 **Title:** Photovoltaic-powered brackish-water desalination in the Drâa-Tafilalet region: optimal combination of PV, storage and grid back-up as a function of salinity and plant size **Authors:** BOUZIANE Nizar Smahi; ELYAAKOUBY Yassine; TILIOUA Amine **Presenter:** BOUZIANE Nizar Smahi

Presentation format: 10 minutes for the talk + 5 minutes for questions and transition.

PROGRAM DETAILS

Tuesday, 24 November 2026 |17h30 | Online – ICESST

Online – ICESST — Virtual room 3 https://meet.google.com/ttb-ztpj-pbx	
ON03: Advanced Control and Power Electronics	
Session chairs	Kaoutar SAIDI ALAOUI, HAMDOUN Ouafae, Ihssane Chtouki
17:30–17:40	**Paper ID:** 9 **Title:** Linear ADRC Control Strategy for V2G, CC and CV Modes in DC/DC Bidirectional Converters for EV Smart Charging Infrastructure **Authors:** Youssef OUBAIL , Imad ABOUDRAR, Adil El KASSOUMI, and Omar; CHAHIR
17:45–17:55	**Paper ID:** 19 **Title:** Modeling and Simulation of the Network-Side Control for a Wind Energy Conversion Chain Based on PMSG **Authors:** EL HAMZAOUI MOHAMED, LAGHRIDAT HAMMADI and BENLAFKIH ABDESSAMAD **Presenter:** EL HAMZAOUI MOHAMED
18:00–18:10	**Paper ID:** 21 **Title:** Toward Intelligent Control of Dual-Star Induction Generators: A Systematic Literature Review and a Modular Multi-Objective Optimization Framework **Authors:** F.Z. LISSANDIN, M. MOUTCHOU, A. ELAFIA **Presenter:** Fatima Zahra LISSANDIN
18:15–18:25	**Paper ID:** 48 **Title:** Output Voltage Regulation and Flying Capacitor Voltage Balancing in a 6S-5L-ANPC Inverter: A Comparative Study of PID and Sliding Mode Control **Authors:** Adnane El-Alami, Sofia Lemssaddak , Abdelhafid Ait Elmahjoub, Radouane Majdoul **Presenter:** Adnane El-Alami
18:30–18:40	**Paper ID:** 87 **Title:** Sliding-Mode-Enhanced Direct Power Control for DC-Link Voltage Regulation of a Three-Phase PWM Rectifier **Authors:** Muhammad Furqan Hameed, Abdullah Al Baki Lamar, Tamanna Islam, Md Zia Uddin Nahid, Khorshed Alam **Presenter:** Abdullah Al Baki
18:45–18:55	**Paper ID:** 110 **Title:** Simulation of Optimal Torque Control Based on an Effective MPPT Tracking Range for High-Power Offshore Wind Turbines with Multiphase PMSGs and a Fuzzy-Controlled Three-Level NPC Inverter **Authors:** aziz rafa

Presentation format: 10 minutes for the talk + 5 minutes for questions and transition.

PROGRAM DETAILS

Tuesday, 24 November 2026 |17h30 | Online – Special Session

Online – Special Session — Virtual room 4 https://meet.google.com/dyr-ttzr-tqc	
SS01: Photovoltaic Systems and Parameter Optimization	
Session chairs	El Mehdi Mellouli, Mohamed SAAOUD, ELYAMANI Abdenbi
17:30–17:40	**Paper ID:** 100 **Title:** Improved Parameter Extraction of Photovoltaic Models via a Hybrid Intelligent Optimization Method **Authors:** SOUAIDI, FATIMA EZZAHRAE; El Yaqouti, Mustapha; Lahboub, Ayoub; Arjdal, El; Abazine, Ismail; Saadaoui, Driss; Choulli, Imade; Elhammoudy, Abdelfattah; Chahir, Omar
17:45–17:55	**Paper ID:** 101 **Title:** Accuracy Assessment of Computational Methods for Five-Parameter Extraction in the Single-Diode Model **Authors:** Lahboub , Ayoub ; Elyaqouti, Mustapha; Souaidi, Fatima Ezzahrae; Arjdal, El Hanafi; Saadaoui, Driss; Choulli, Imade; Elhammoudy, Abdefattah; Abazine, Ismail
18:00–18:10	**Paper ID:** 106 **Title:** Dhole Optimization Algorithm for Parameter Estimation of Single-Diode Photovoltaic Model **Authors:** BENDRIOUICH, YOUSSOUF; Ydir, Brahim; Arjdal, El Hanafi; Ben Hmamou, Dris; Elyaqouti , Mustapha; Chahir, Omar; Mellouli, El Mehdi; Demami, Fouad
18:15–18:25	**Paper ID:** 113 **Title:** Modeling, Hybrid PUMA-Halley Extraction Under STC, and Comparative Assessment of Thermal Translation Frameworks for Photovoltaic Generators **Authors:** abazine, ismail; El Yaqouti, Mustapha; Choulli, Imade; Elhammoudy, Abdelfattah; Lahboub, Ayoub; Souaidi, Fatima Ezzahrae; Saadaoui, Driss; Arjdal, El Hanafi
18:30–18:40	**Paper ID:** 115 **Title:** A Simple and Accurate Approach for Photovoltaic Parameter Estimation Using the Bisection Method **Authors:** Elhammoudy, Abdelfattah; Elyaqouti, Mustapha; Ismail, Abazine; Choulli, Imade; Souaidi, Fatima Ezzahrae ; Lahboub, Ayoub ; Saadaoui, Driss ; Arjdal, El Hanafi
18:45–18:55	**Paper ID**: 118 **Title**: Machine-Learning-Assisted Modeling and Optimization of Ca_3AsN-Based Photovoltaic Device **Authors**: JAMAL KADIMI

Presentation format: 10 minutes for the talk + 5 minutes for questions and transition.

PROGRAM DETAILS

Tuesday, 24 November 2026 |17h30 | Online – Special Session

Online – Special Session — Virtual room 5 https://meet.google.com/uac-twem-ywj	
SS02: Artificial Intelligence, Digital Health and Smart Learning	
Session chairs	ARJDAL El Hanafi, Samir Ait LHADJ LAMINE, Sedki Akram
17:30–17:40	**Paper ID:** 14 **Title:** A Novel GIS-Enabled Community Scouting Framework for Endemic Disease Detection and Spatial Mapping in Low-Resource Settings **Authors:** Babagana-Kyari, Modibbo
17:45–17:55	**Paper ID:** 35 **Title:** Bridging Green AI and Adaptive Learning: A Systematic Review of Energy-Efficient Techniques for Sustainable Personalized Education **Authors:** EL IBRAHIMY Imane
18:00–18:10	**Paper ID:** 60 **Title:** Accelerating Emergency Crowd Simulation with Physics-Constrained Neural Surrogates **Authors:** LAMGHARI ABDELKARIM, Jebrane Aissam
18:15–18:25	**Paper ID:** 61 **Title:** CARDIO-PINN: A Physiology-Informed Neural Network for Cardiac Anomaly Screening from RR Intervals **Authors:** Naciri Ayoub, Benhala Bachir
18:30–18:40	**Paper ID:** 105 **Title:** Classification of Colorectal Polyps by Fourier Frequency Emphasis and SeResNet-50 **Authors:** AASSIF Hamza, Kerkaou Zakaria, Sabraoui Ayoub
18:45–18:55	**Paper ID:** 109 **Title:** Intelligent LLM-Based Learning: The Contribution of RAG and Agentic Systems to Pedagogical Optimization **Authors:** khalifa manal, Bahassine Said, MAWANE Jamal

Presentation format: 10 minutes for the talk + 5 minutes for questions and transition.

PROGRAM DETAILS

Tuesday, 24 November 2026 |17h30 | Online – Special Session

Online – Special Session — Virtual room 6 https://meet.google.com/std-pyia-ixi	
SS03: Advanced Materials, Photonics and Wireless Technologies	
Session chairs	ELYAQOUTI Mustapha, Meriem HOUMER, Abdeslam LACHHAB, MOUMEN Abdelkrim
17:30–17:40	**Paper ID:** 93 **Title:** Magnon-rotation enhanced nonreciprocity of multipartite entanglement in a magnomechanical system **Authors:** HARRAF HAMZA
17:45–17:55	**Paper ID:** 94 **Title:** Intracavitary bidirectional tandem-pump scheme and gain-switched Tm-doped fiber laser at 1700 nm **Authors:** abouricha mostafa
18:00–18:10	**Paper ID:** 99 **Title:** Comparative Performance Assessment of Metamaterial-Loaded and Array-Based Patch Antennas for 6G and Biomedical Applications **Authors:** saidi alaoui kaoutar
18:15–18:25	**Paper ID:** 117 **Title:** Simulation study of negative-capacitance gate-all-around polysilicon nanowire FETs for low-voltage devices **Authors:** BEN MBIRIK, SOUHAILA ; DEMAMI, FOUAD; SEDKI, AKRAM; EL-AMIRI, ASSEYA; ARJDAL, EL HANAFI; ELYAQOUTI, MUSTAPHA; ABOUDRAR, IMAD

Presentation format: 10 minutes for the talk + 5 minutes for questions and transition.

PROGRAM DETAILS

Tuesday, 24 November 2026 |17h30 | Online – Special Session

Online – Special Session — Virtual room 7 https://meet.google.com/oqw-kxis-hng	
SS04: Sustainable Energy and Intelligent Control Systems	
Session chairs	DEMAMI Fouad, Said Kririm, Abdelilah ET-TALEBY, YDIR Brahim
17:30–17:40	**Paper ID:** 121 **Title:** Hybrid Analytical–Genetic Algorithm Strategy Achieves High-Precision Parameter Identification in Single-Diode Photovoltaic Models **Authors:** Daoudi El fatmi
17:45–17:55	**Paper ID:** 103 **Title:** From Energy Optimization to Deep Decarbonization: A Structured Review of Five Complementary Strategies for Energy-Intensive Manufacturing **Authors:** Zahir, Fatima ezahra
18:00–18:10	**Paper ID:** 108 **Title:** Sustainable Biodiesel Production from Waste Animal Fats: Technological Challenges and Perspectives for Biofuel Integration into Renewable Energy Systems **Authors:** Mounir, Abid
18:15–18:25	**Paper ID:** 111 **Title:** Control Methodologies in Mechatronics Systems **Authors:** BERRAHO, Youssra

Presentation format: 10 minutes for the talk + 5 minutes for questions and transition.

PROGRAM DETAILS

Wednesday, 25 November 2026 |14h30 | On-site – ICESST

On-site – ICESST — Room A	
OS04: Artificial Intelligence, Language Models and Digital Innovations	
Session chairs	Loubna EL FAQUIH, Meriem HOUMER, MAHA ANNOUKOUBI
14:30–14:40	**Paper ID:** 80 **Title:** An Empirical Comparison of Lexical and Semantic Representations for Content-Based Recommendation **Authors:** MAJDA EL HASSANI; LOUBNA EL FAQUIH; NADIA MACHKOUR
14:45–14:55	**Paper ID:** 20 **Title:** Evaluating the Stability of SHAP-Based Explanations for Student Dropout Prediction under Training Randomness and Data Perturbation **Authors:** Nora HAKMI; Khalid OQAIDI; Sarah AOUHASSI; Abdelali ZAKRANI **Presenter:** Nora HAKMI
15:00–15:10	**Paper ID:** 38 **Title:** Beyond Benchmarks: Rethinking Evaluation and Generalization in Offensive Language Detection A Critical Analysis of Dataset Bias, Cross-Domain Transfer, and the Fairness Performance Trade off **Authors:** TARIK HADDANE; SAID BAHASSINE; ABDELALI ZAKRANI **Presenter:** TARIK HADDANE
15:15–15:25	**Paper ID:** 41 **Title:** Ontology-Guided Knowledge Graph Extraction from Arabic Text: A Benchmark of Ten Open-Weight Language Models **Authors:** Abdelhakim El Ghayoubi, Achraf Chahboune , Imad Sassi , and Said Bahassine **Presenter:** Abdelhakim EL Ghayoubi
15:30–15:40	**Paper ID:** 17 **Title:** Artificial Intelligence, Data-Driven Urban Governance, and Territorial Communication: A Documentary Analysis of the Casablanca Smart City Project **Authors:** Khaoula CHAOUI EL GHOR **Presenter:** Khaoula CHAOUI EL GHOR

Presentation format: 10 minutes for the talk + 5 minutes for questions and transition.

PROGRAM DETAILS

Wednesday, 25 November 2026 |14h30 | On-site – ICESST

On-site – ICESST — Room B	
OS05: Renewable Energy and Smart Microgrids	
Session chairs	Radouane MAJDOUL, Kaoutar SAIDI ALAOUI, Abdelhafid AIT ELMAHJOUB
14:30–14:40	**Paper ID:** 25 **Title:** Ecological Cycle Optimization-Based Energy Management System for Microgrids **Authors:** Ismael Jrhilifa, R. Naji EL idrissi, S.Charadi, Y.Akarne, and; A.Bouaichi **Presenter:** Ismael Jrhilifa
14:45–14:55	**Paper ID:** 31 **Title:** X-SAC: An Explainable Soft Actor-Critic Framework for Home Energy Management under Joint Photovoltaic and Real-Time Pricing Uncertainty **Authors:** Tarik Baoufa, Mohamed Charmaq, Yassine Chaouki, Mohammed Kasri, Abderrahim Beni-Hssane. **Presenter:** Tarik Baoufa
15:00–15:10	**Paper ID:** 69 **Title:** Coupled Effects of Artificial Roughness and Modified Absorber Geometry on Heat Transfer in a Solar Air Heater **Authors:** Youssef Arkam; Ossama Merroun; Anas Sakim; Ahmed Bouchaala; Said Sobhi **Presenter:** Youssef Arkam
15:15–15:25	**Paper ID:** 77 **Title:** Intelligent Energy Management and Resilient Operation of a PV–Wind–Battery–Hydrogen Microgrid with PEM Fuel Cell Integration **Authors:** Ihssane CHTOUKI; Patrice WIRA; Safiatou Y TOURE; Younes EL FELLAH
15:30–15:40	**Paper ID:** 78 **Title:** Econometric Modeling and Physics-Guided Feature Engineering for Morocco's Energy Planning Strategy Toward 2030 **Authors:** Abdelhadi Bennani, Hind Lakhal; Mourad Zegrari; Ayoub Bahnasse
15:45–15:55	**Paper ID:** 49 **Title:** Optimisation des Systèmes Énergétiques Hybrides pour UAS/UAV à Longue Autonomie en Environnements Exigeants **Authors:** El Majid, Meryeme; Zegrari, Mourad; Ennaji, Mohamed

Presentation format: 10 minutes for the talk + 5 minutes for questions and transition.

PROGRAM DETAILS

Wednesday, 25 November 2026 |14h30 | On-site – ICESST

On-site – ICESST — Room C	
OS06: Industry 4.0, Smart Manufacturing and Digital Trust	
Session chairs	SOBHI Said, Fatih BARKI, Ennaji MOHAMED, Imad ABOUDRAR
14:30–14:40	**Paper ID:** 52 **Title:** TrustGate-CI: Risk-Tiered Safety-Coverage Gating for LLM-Generated CI Repairs **Authors:** Othmane Ait Ami, Abderrazak Boumahdi & Mohamed Azmi **Presenter:** Othmane Ait Ami
14:45–14:55	**Paper ID:** 58 **Title:** Towards Adaptive Production Planning in Pull-Based Manufacturing Systems: An Industry 4.0 Perspective **Authors:** Lanouari Salma; Meddaoui Anwar; Zaki Abdelhamid **Presenter:** Salma Lanouari
15:00–15:10	**Paper ID:** 73 **Title:** Blockchain as an Enabler to Interoperability Integration in Industry 5.0 Era: A Systematic Literature Review **Authors:** Naila Fares **Presenter:** Naila Fares
15:15–15:25	**Paper ID:** 83 **Title:** A Comparative Study of Classic and Agentic Hyperparameter Optimization Methods for the Electric Vehicle Routing Problem with Drones (EVRPD) **Authors:** Imane Hammadi; Hicham El Hassani; Jamal Benhra **Presenter:** Imane HAMMADI
15:30–15:40	**Paper ID:** 116 **Title:** Analysis and Simulation of Environmental Disturbance Effects on CubeSat Attitude in Low Earth Orbit **Authors:** El Montaki Imane
15:45–15:55	**Paper ID:** 122 **Title:** Part I. Physicochemical Characterisation of FDM-Printed PLA-Copper Composites: Effect of Copper Addition and Mechanical Recycling on Thermal, Rheological, and Molecular Properties **Authors:** Taglabout Mohamed Salm, Badia Mohamed, Ennaji Mohamed, Zaz Ghita

Presentation format: 10 minutes for the talk + 5 minutes for questions and transition.

PROGRAM DETAILS

Wednesday, 25 November 2026 |14h30 | On-site – ICESST

On-site – ICESST — Room D	
OS07: Artificial Intelligence, Optimization and Intelligent Decision Systems	
Session chairs	Khaoula CHAOUI EL GHOR, Mohamed AZMI, Rihab Benaich
14:30–14:40	**Paper ID:** 23 **Title:** Artificial Intelligence for Predictive Decision Support and Performance Optimization in Smart Engineering Systems **Authors:** SOUAD TISSIR; HICHAM SARIR **Presenter:** SOUAD TISSIR
14:45–14:55	**Paper ID:** 33 **Title:** From Multi-Agent Systems to Agentic AI in Intelligent Intermodal Passenger Transportation: A Critical Review, Taxonomy, and Research Agenda **Authors:** Khalid Anbri, Mohamed El moufid, Yassine Zahidi, Wafaa Dachry, Hassan Gziri, Hicham MEDROMI **Presenter:** Khalid Anbri
15:00–15:10	**Paper ID:** 45 **Title:** Operator-Tunable Energy-Latency Trade-offs in Smart Computing Infrastructure: A Constrained Multi-Agent Learning Architecture **Authors:** Achraf Chahboune, Abdelhakim EL Ghayoubi, Aissam Jadli, and Said Bahassine **Presenter:** Achraf Chahboune
15:15–15:25	**Paper ID:** 81 **Title:** Beyond Black-Box HPO: A Semantic Multi-Agent debate Framework for Multi-objective Two-Echelon VRP **Authors:** Hiba Mabkhout, Hicham El Hassani, Rajaa Benabbou, Jamal Benhra **Presenter:** Hiba Mabkhout
15:30–15:40	**Paper ID:** 90 **Title:** Artificial Intelligence and Strategic Management: Towards Smarter Organizational Decision-Making **Authors:** Samira EL HAFID ALLAH

Presentation format: 10 minutes for the talk + 5 minutes for questions and transition.

PROGRAM DETAILS

Wednesday, 25 November 2026 |14h30 | Online – ICESST

Online – ICESST — Virtual room 1 https://meet.google.com/dzm-rnph-any	
ON04: Biomedical Engineering and Smart Health Solutions	
Session chairs	Bahassine Said, Ghita ZAZ, LAHSSAN BEN TARLA
14:30–14:40	**Paper ID:** 30 **Title:** Emerging Digital Technologies for Predictive Maintenance of Medical Devices: A Systematic Literature Review **Authors:** Somaia Echalh, Esseddik Elqars, Asmae EL Byere, Abdelmounaime Dachry, Wafaa Dachry, Hassan Gziri and Hicham Medromi **Presenter:** Somaia ECHALH
14:45–14:55	**Paper ID:** 66 **Title:** Toward an Interoperable AI-Driven Telemedicine Platform: A Three-Layer Reference Architecture for Clinical Decision Support **Authors:** Aboubaker Abouelkacim; Ghita Zaz; Samy Housbane **Presenter:** Aboubaker Abouelkacim
15:00–15:10	**Paper ID:** 67 **Title:** Artificial Intelligence for Early Cancer Detection on PET/CT Imaging: Towards Real-Time Embedded Systems **Authors:** Hamza MERROUN; Ghita ZAZ **Presenter:** Hamza MERROUN
15:15–15:25	**Paper ID:** 95 **Title:** Multi-Objective RFID Reader Deployment for Medical Asset Tracking in a Clinic under Electromagnetic Compatibility Constraints **Authors:** Samir Ait Lhadj Lamin; Badr Abou El Majd
15:30–15:40	**Paper ID:** 107 **Title:** Deep Reinforcement Learning for disaster recovery optimization in healthcare systems **Authors:** Mohammed MARBOU **Presenter:** Mohammed MARBOU

Presentation format: 10 minutes for the talk + 5 minutes for questions and transition.

PROGRAM DETAILS

Wednesday, 25 November 2026 |14h30 | Online – ICESST

Online – ICESST — Virtual room 2 https://meet.google.com/mvk-wjbw-ewo	
ON05: Digital Twins, Predictive Maintenance and Smart Mobility	
Session chairs	Abdelwahed TOUATI, Mounir ABID, Abdelhakim Amazirh
14:30–14:40	**Paper ID:** 29 **Title:** An AI-Based Digital Twin Framework for Renewable Energy Maintenance applications **Authors:** Eng. Badredin ELMAYMOUNI **Presenter:** Badredin ELMaymouni
14:45–14:55	**Paper ID:** 82 **Title:** A Hybrid Machine Learning Framework for Predictive Maintenance under Imbalanced Data Conditions **Authors:** Merouane OBAYD , Anass BARODI, Mohammed BENBRAHIM, Abdelkarim ZEMMOURI **Presenter:** Merouane OBAYD
15:00–15:10	**Paper ID:** 84 **Title:** Integrating IoT and OBD-II Telematics into Fleet Management: A Decision Framework for Operational Check-ins, Maintenance Planning, and Fleet Resilience **Authors:** Wissal El Hail; Chifae El Hail; Mustapha El Hamzaoui **Presenter:** Wissal EL HAIL
15:15–15:25	**Paper ID:** 46 **Title:** Impact of Sensor Data Quality on ML-Based PUE Prediction in HPC Data Centers **Authors:** Mouna Nassim, Mohamed Bezza **Presenter:** Mouna Nassim

Presentation format: 10 minutes for the talk + 5 minutes for questions and transition.

PROGRAM DETAILS

Wednesday, 25 November 2026 |14h30 | Online – ICESST

Online – ICESST — Virtual room 3 https://meet.google.com/ttb-ztpj-pbx	
ON06: Cybersecurity, Safety and Intelligent Connected Systems	
Session chairs	Azidine GUEZZAZ, Amina DAGHOURI, Samira EL Hafid Allah
14:30–14:40	**Paper ID:** 57 **Title:** A Red-Teaming Harness for Multi-Step Tool-Use LLM Agents: Live-Validated, Multi-Predicate Attack Search **Authors:** KONE Modibo; AZMI Mohamed; ZEGRARI Mourad
14:45–14:55	**Paper ID:** 68 **Title:** EB-IoV: Edge-Blockchain-Based Architecture for Secure and Low-Latency Geographic Vehicle Distribution in IoV **Authors:** Hicham El Fazni; Rachid Alaoui **Presenter:** Hicham El fazni
15:00–15:10	**Paper ID:** 71 **Title:** Trustworthy Virtual Train Coupling: A Compositional Framework for Train-to-Train Safety Verification **Authors:** Naima Mechouate, Abderrahim Ait Wakrime, Redouane Benaini, Samir Ouchani, and Simon Collart-Dutilleul **Presenter:** Naima Mechouate

Presentation format: 10 minutes for the talk + 5 minutes for questions and transition.

ICESST'2026 PROGRAM

PROGRAM DETAILS

Wednesday, 25 November 2026 |14h30 | Online – ICESST

Online – ICESST — Virtual room 4 https://meet.google.com/dyr-ttzr-tqc	
ON07: Engineering Optimization, Energy Efficiency and Advanced Applications	
Session chairs	Sakim Anas, Badia MOHAMED, LAGHRIDAT Hammadi
14:30–14:40	**Paper ID:** 12 **Title:** Manufacturing-Aware Surrogate-Assisted Multi-Objective Design of Mechanical Parts **Authors:** KHADDA Khadija; ECHCHARQY Younes; Samir Ait Lhadj Lamin **Presenter:** Khadija Khadda
14:45–14:55	**Paper ID:** 76 **Title:** H∞-Based Energy Management and Power Flow Control for a Battery Supercapacitor Hybrid Energy Storage System for Electric Vehicles **Authors:** Hajar MOHTARAM; Lahssan BENTARLA; Abdelhafid AITELMAHJOUB **Presenter:** Hajar MOHTARAM
15:00–15:10	**Paper ID:** 89 **Title:** Multi-Objective PSO-Based Tuning of ADRC for Wind–Battery Green Hydrogen Microgrids: Balancing Electrical Stability and Hydrogen Quality **Authors:** Omar Chahir, Imad Aboudrar, El Hanafi Arjdal, Mustapha Elyaqouti, El Mehdi Mellouli, Abdelhafid El Farnane, Fouad Demami, Akram Sedki, Youssouf Bendriouich, Fatima Ezzahrae Souaidi, Said Mailal. **Presenter:** Omar Chahir
15:15–15:25	**Paper ID:** 102 **Title:** Hourly control of the cascade temperature in a compression–absorption atmospheric water harvester: electricity saving over vapour compression in semi-arid Morocco **Authors:** Zaineb Bouzidi ,El Mustapha Boudi ,Hicham Mastouri; ,Chouaib Ennawaoui
15:30–15:40	**Paper ID:** 114 **Title:** Photovoltaic Generator Modeling, PUMA-Halley Parameter Extraction at STC, and Comparative Evaluation of Thermal Prediction Methodologies **Authors:** ismail abazine

Presentation format: 10 minutes for the talk + 5 minutes for questions and transition.

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