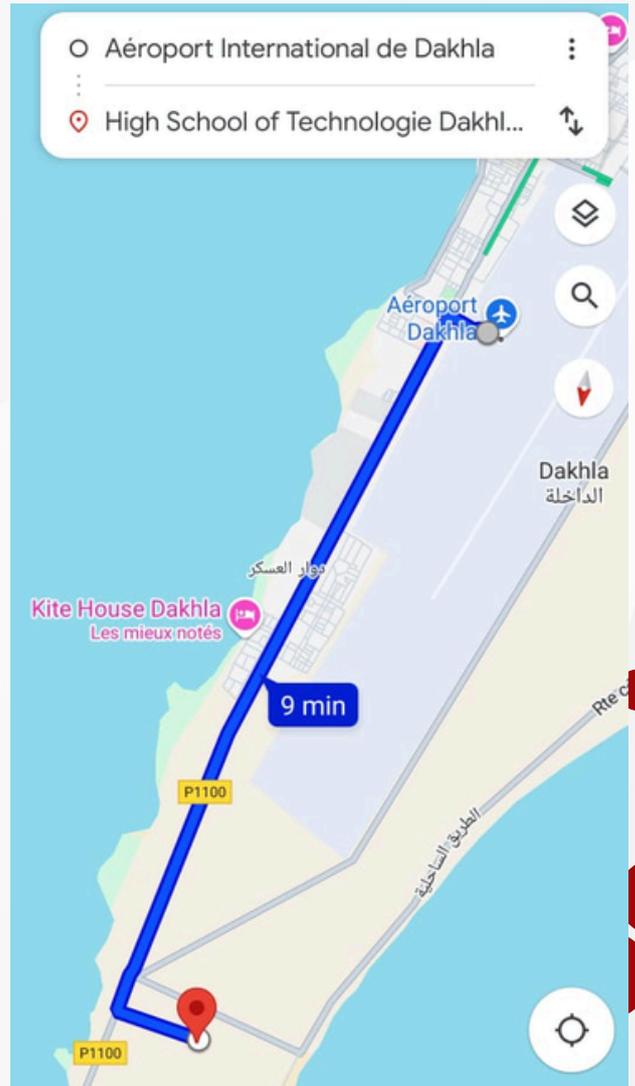
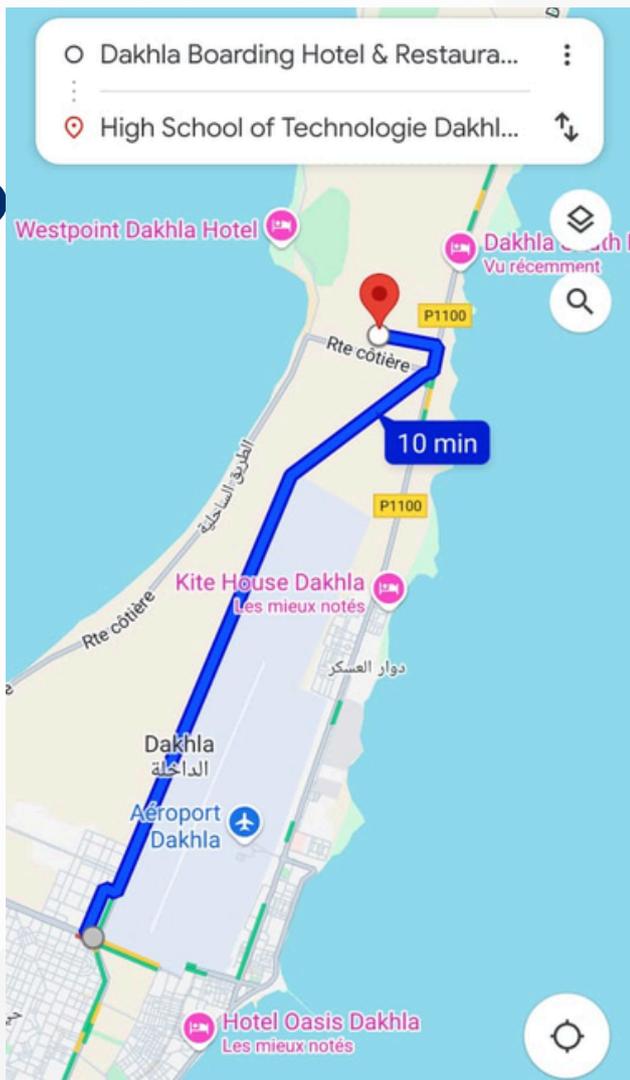




ICESST 2024 VENUE





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ICESST'2024 PROGRAM

WELCOME TO ICESST'2024

01

We are delighted to welcome you to the inaugural edition of the International Conference on Electrical Systems and Smart Technologies (ICESST 2024), taking place in the beautiful city of Dakhla, Morocco, from December 11 to 13, 2024. This conference marks a significant milestone as a global platform for scientists, researchers, and professionals passionate about Electrical Systems and Smart Technologies.

As the first edition, ICESST 2024 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 2024.

GENERAL CHAIRS



Pr. Imad ABOUDRAR

EST Dakhla, IBN ZOHR
University, Morocco



Pr. Ilias OUACHTOUK

ENSAM Casablanca, Hassan II
University, Morocco

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.



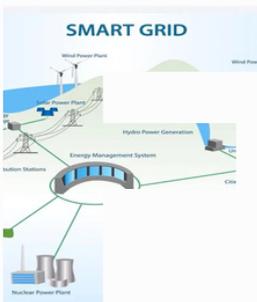
○ **Smart Infrastructure and Renewable Energy Systems**

- 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.



Thanks to our sponsors



HONORARY GUESTS

04



**Azzedine El
Midaoui**

Minister of Higher Education,
Scientific Research, and Innovation



**Pr. Abdelaziz
BENDOU**

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



AZZEDINE EL MIDAQUI

MINISTER OF HIGHER EDUCATION, SCIENTIFIC RESEARCH, AND INNOVATION

Biography : The current Minister of Higher Education, Scientific Research, and Innovation in Morocco. Mr. Azzedine El Midaoui, is a prominent Moroccan academic and politician. He was previously the President of Ibn Tofail University in Kenitra, a position he held from 2014, where he played a pivotal role in developing the university's infrastructure, modernizing its academic programs, and promoting scientific research. He also strengthened partnerships with academic and economic institutions. In 2018, he was elected President of the Conference of Moroccan University Presidents, further solidifying his influence in the higher education sector in Morocco. Thanks to his exceptional career, he was appointed Minister of Higher Education, Scientific Research, and Innovation in the Moroccan government, pursuing his efforts to improve the national education system.

In addition to his administrative responsibilities, Mr. Azzedine El Midaoui is a renowned researcher, particularly in the field of desalination. He has led numerous research projects, securing 34 contracts and agreements that generated 15 million dirhams in funding. He holds two international patents and has received several awards, including the Competitiveness Award for university-business partnership in 2008. Since 2018, he has been a member of the European Academy of Sciences, Arts, and Letters, and has also been a member of the Higher Council for Education, Training, and Scientific Research since 2015.



PR. ABDELAZIZ BENDOU

PRESIDENT OF IBN ZOHR UNIVERSITY, MOROCCO

Biography : Mr. Abdelaziz Bendou, appointed President of Ibn Zohr University by the Government Council on Wednesday, September 9, 2020, was born in 1965 in Taroudant. He is married and the father of three children.

Holder of a Doctorate of State, Mr. Bendou also holds other qualifications, including a Master's degree in Environmental Audit and Management, a Master's degree in Tourism Planning and Management, and certification as an auditor for environmental management systems.

Throughout his career as a teacher-researcher, Mr. Bendou has held several key positions, including Deputy Director of the Higher School of Technology of Agadir (ESTA), Deputy Director of the National School of Applied Sciences of Agadir (ENSAA), and Director of the National School of Commerce and Management of Agadir (ENCGA) for two terms. He also served as Vice President of Ibn Zohr University in Agadir, responsible for scientific research and cooperation.

Academically, Mr. Bendou has authored numerous articles, book chapters, and international presentations and has supervised several doctoral dissertations. He is recognized as an expert evaluator for the CNRST and other national and international research organizations.

Additionally, he coordinated the "Energy and Environment" Master's program and the specialized Master's in "Agri-Food Engineering," oversaw doctoral training programs, and chaired the national entrance examination for management schools.

Throughout his academic career, Mr. Bendou has initiated several research projects funded through national and international calls for proposals, including TEMPUS, TOUBKAL, and CNRST, among others.



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.



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.



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. Qualified 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 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 scientific associations in touch with his domain of research. He is an expert CNRST and Ministry. He was responsible for several academic structures (Director of EST Casablanca, Director of ENSAM Casablanca, Vice Dean FSTM, Head of the Electric Engineering Department).

KEYNOTE SPEAKERS

05



**PR. OSAMA
MOHAMMED**

*FIU
USA*



**PR. FAUSTO PEDRO
GARCÍA MÁRQUEZ**

*University of Castilla
La Mancha, Spain*



**PROF. DR. ING OUAFAE EL
GANAOUI MOURLAN**

*IFP School
France*



**PR. MIKAA BLUGEON-
MERED**

*Sciences Po Paris
France*



**PR. ELHOUSSIN
ELBOUCHIKHI**

*ISEN Yncréa Ouest
Nantes campus, France*



**PR. MOUHSINE
LAKHDISSI**

*FST Settat
Morocco*

“
Energy Cyber-Physical Systems and their Communication
and Control Challenges for Operational Security in
Industrial Systems
”

This talk will describe how the developed solution can protect the power grid and industrial infrastructure from cyber-attacks and build cybersecurity protection into emerging power grid components and services. This includes microgrid and demand-side management components and protecting the network (substations and productivity lines) and data infrastructure (SCADA) to increase the resilience of the energy delivery systems against cyber-attacks. These developments will also help utility security systems manage large amounts of cybersecurity risk data and cybersecurity operations. For these developments to succeed, cybersecurity testbeds and testing methodologies are necessary to evaluate the effectiveness of any proposed security technologies.



Pr. Osama Mohammed
FIU, USA

“
Artificial Intelligence in Renewable Energy
”

To-date, most of the energy sector's transition efforts have focused on hardware: new low-carbon infrastructure that will replace legacy carbon-intensive systems. Relatively little effort and investment has focused on another critical tool for the transition: next-generation digital technologies, in particular artificial intelligence (AI). These powerful technologies can be adopted more quickly at larger scales than new hardware solutions and can become an essential enabler for the energy transition. AI is already proving its value to the energy transition in multiple domains, driving measurable improvements in renewable energy forecasting, grid operations and optimization, coordination of distributed energy assets and demand-side management, and materials innovation and discovery. AI holds far greater potential to accelerate the global energy transition, but it will only be realized if there is greater AI innovation, adoption and collaboration across the industry



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

The ECAV Chair: Advancing Education and Research in Electric, Connected, and Autonomous Vehicles for a Sustainable mobility.



Pr. Ouafae El Ganaoui
Mourlan
IFP School, France

For the future, the Electric, Connected and Autonomous Vehicle (ECAV) will be seen as a means of not only meeting the requirements for individual comfort, safety, and fluidity of transport, but also facing the challenges of environmental issues. There will therefore be significant needs in the future for in-depth scientific knowledge and the creation of new skills in the field of ECAV. The goal is to expand students' skills and make them well prepared to future challenges the industry will have to face. This seminar will provide an overview of the research and teaching activities undertaken since the establishment of the ECAV Chair.

Key topics that will be discussed include the importance of interdisciplinary collaboration, ongoing education and training, and the role of research in driving innovation. We will also explore some of the challenges involved in advancing mobility through electric and autonomous driving projects, such as the development of an Energy Management System for controlling a Smart Microgrid with Electric Vehicles and the simulation and analysis of connected autonomous vehicles crossing a roundabout using V2I architecture. Finally, we will highlight the critical role of AI in achieving these goals.

Smart Technologies, Clean Hydrogen, and Economic Development: From Technological Optimization to Geopolitical Reinvention

The integration of smart technologies into energy systems is a critical necessity to unlock clean hydrogen's full potential as a cornerstone of the energy transition. By optimizing hydrogen production from intermittent renewable sources through AI-driven energy management systems upstream, as well as for the reinjection of hydrogen in local and national electricity grids downstream, these innovations enable more than just the efficient and flexible use of electrolyzers: they enable the power-to-X value chain as a whole by increasing the bankability and marketability of PtX projects. In isolated regions like southern Morocco or desert areas in the Middle East and Africa, this synergy between renewables, hydrogen, EMS and AI fosters sustainable economic growth going even beyond energy as they eventually unlock investments in critical infrastructure and major social co-benefits, starting with new water supply capacity. However, generating and reaping the socio-political benefits of such an ambition PtX strategy requires the alignment of all local stakeholders, which, based on numerous PtX case studies all around the world, often proves to be the biggest challenge.



Pr. Mikaa BLUGEON
MERED
Sciences Po Paris
France

“
From Internal Combustion Vehicles to Electric Mobility:
Advances in Power Electronics for Traction Drives and
Charging Infrastructure
”



Pr. Elhoussin ELBOUCHIKHI
ISEN Yncréa Ouest
Nantes campus, France

The increasing demand for eco-friendly transportation has accelerated the development and deployment of electric and plug-in hybrid vehicles (EVs), making EV charging infrastructure a critical focus for researchers and industry. Challenges such as high battery costs, limited autonomy, charging times, infrastructure deployment expenses, and grid impact have spurred extensive research into advanced power electronics topologies and optimization of charging stations.

This keynote will provide a comprehensive review of major advancements in power electronics architectures for EV traction drives and battery-based charging stations. Key topics include drivetrain power electronics for light-duty EVs, charging station specifications, and state-of-the-art solutions for improving power transfer efficiency and mitigating grid disturbances. Additionally, emerging technologies like inductive recharging, conductive systems, and battery swapping will be discussed, along with the growing role of hydrogen fuel cell EVs. The presentation will conclude with insights into smart charging systems and future research directions for sustainable and efficient EV infrastructure development.

“
AI or Die: AI as an Existential Imperative, Not Just a
Matter of Performance
”



Pr. Mouhsine LAKHDISSI
FST Settat
Morocco

In a world increasingly transformed by artificial intelligence, the impact of AI extends far beyond mere performance gains. This conference delves into the existential imperative of AI, shedding light on the critical challenges that societies and industries must address to remain competitive, resilient, and sustainable. We will explore how AI is redefining electrical infrastructures and smart technologies while questioning the ethical, social, and economic implications of this rapid transformation. Through concrete examples and futuristic projections, this keynote emphasizes the need for proactive AI adoption, not only to optimize systems but also to ensure long-term survival and prosperity.

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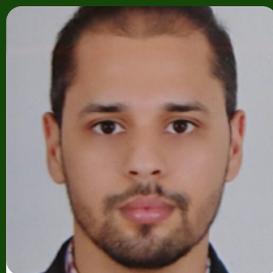
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Program Overview

Program Overview of Wednesday, 11 Dec 2024 (GMT+1)

9h00-10h00	Welcome and Registration
10h00-11h00	Opening Ceremony
10h-10h45	<p><i>Moderators: Prof. Khaoula CHAQUI EL GHOR & Prof. Kaoutar SAIDI ALAQUI</i></p> <ul style="list-style-type: none"> • Opening Speeches by Guests and Chairs • Presentation of trophies to conference guests and sponsors.
11h00- 11h30	Coffee break, visit to stands and discussions with exhibitors.
11h30- 12h30	<p>Plenary sessions</p> <p>Speaker: Prof. Fausto Pedro García Márquez (University of Castilla-La Mancha, Spain): Artificial Intelligence in Renewable Energy</p> <p><i>Plenary session chair: (Prof. Nadia MACHKOUR)</i></p> <p>Speaker: Prof. Ouafae El Ganaoui Mourlan (IFP School, France): The ECAV Chair: Advancing Education and Research in Electric, Connected, and Autonomous Vehicles for Sustainable Mobility</p> <p><i>Plenary session chair: (Pr. Sahar SAOUD)</i></p>
12h30- 13h30	<p>Round Table</p> <p>Theme: Green hydrogen production and regional applications</p> <p><i>Moderator: (Prof. Mourad ZEGRARI)</i></p> <p>Participants :</p> <ul style="list-style-type: none"> • 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.

13h30- 14h30	<p style="text-align: center;">Plenary sessions (Online)</p> <ul style="list-style-type: none"> • Prof. Osama Mohammed (<i>Florida International University, USA</i>): <i>Energy Cyber-Physical Systems and their Communication and Control Challenges for Operational Security in Industrial Systems</i> <p style="text-align: center;"><i>Moderator: (Prof. Soumia El Hani)</i></p>	
14h30-15h30	<p>Lunch break</p>	
15h30- 16h30	<p style="text-align: center;">Guest speaker</p> <ul style="list-style-type: none"> • Representative of Vinci Energies, Morocco : <i>Presentation of Vinci Energies and its activities</i> <p style="text-align: center;">Vinci Energies, Morocco</p> <p style="text-align: center;"><i>Moderator: (Prof. Loubna EL FAQUIH)</i></p> <p style="text-align: center;">Keynote</p> <ul style="list-style-type: none"> • Prof. Mikaa BLUGEON-MERED (<i>Paris, France</i> <i>Coordinator of the Hydrogen Task Force at MEDEF International, Special Advisor to the Hy24 Investment Fund</i>): <i>Smart Technologies, Clean Hydrogen, and Economic Development: From Technological Optimization to Geopolitical Reinvention.</i> <p style="text-align: center;"><i>Moderator: (Prof. Ghita ZAZ)</i></p>	
16h30-17h00	<p>Coffee break</p>	
17h00-18h30	<p>Parallel sessions 1 (On-site – ICESST)</p>	<p>Parallel sessions 2 (Online – Special Sessions)</p>
	<ul style="list-style-type: none"> • Session 1 : Artificial Intelligence and Smart Applications • Session 2: Stability Analysis, Cybersecurity, and Renewable Energy 	<ul style="list-style-type: none"> • Special Session 1: Control and Design of Renewable Energy Systems • Special Session 2: Photovoltaic Systems and MPPT Techniques • Special Session 3: Quantum Properties and Advanced Materials

Program Overview of Thursday, 12 Dec 2024 (GMT+1)

09h30-10h30	Remote keynote	
09h30-10h30	<ul style="list-style-type: none"> • Speaker: Prof. Elhoussin ELBOUCHIKHI: From Internal Combustion Vehicles to Electric Mobility: Advances in Power Electronics for Traction Drives and Charging Infrastructure <i>ISEN Yncréa Ouest, Nantes campus France</i> <i>Moderator: Prof. El Hanafi ARJDAL</i> 	
10h30-11h00	Keynote	
10h30-11h00	<ul style="list-style-type: none"> • Speaker: Prof. Mouhsine Lakhdi (AI Crafter, International IT Consultant, Entrepreneur, and Investor) : Artificial Intelligence and its Role in Sustainable Systems <i>Moderator: (Prof. Radouane MAJDOUL)</i> 	
11h00-11h30	Guest speaker	
11h00-11h30	<ul style="list-style-type: none"> • Speaker: Dr. Zoubida Reghay: Towards Equitable Energy: Gender and Electrical Systems in the Era of Intel-Ligent Technologies <i>Director of King Pelagique Fondation, Dakhla Morocco</i> <i>Moderator: (Pr. Zahra SAAD)</i> 	
11h30-12h00	Coffee break	
12h00-13h30	Parallel sessions (Online – ICESST)	Parallel sessions (Online – Special Session)
	<ul style="list-style-type: none"> • Session 1 : Artificial Intelligence and Digital Innovations • Session 2 : Renewable Energy and Smart Grids 	<ul style="list-style-type: none"> • Special Session 4 : Control Systems and Optimization Techniques • Special Session 5 : Materials Science and Solar PV Applications • Special Session 6 : AI and Computational Techniques
13h30-15h00	Lunch break	

15h00-16h30	Parallel sessions (Online – ICESST)	Parallel sessions (Online – Special Session)
	<ul style="list-style-type: none"> • Session 3 : Advanced Control and Fault Detection Systems • Session 4 : Biomedical Engineering and Smart Health Solutions 	<ul style="list-style-type: none"> • Special Session 7 : Advanced Modeling and Optimization in Energy and Material Systems • Special Session 8 : Solar PV Systems and Parameter Optimization • Special Session 9 : Advanced Control and Optimization in Renewable Energy Systems
16h30-17h00	Coffee break	
17h00-18h30	Parallel sessions (Online – ICESST)	Parallel sessions (Online – Special Session)
	<ul style="list-style-type: none"> • Session 5 : Technological Innovations and Advanced Applications • Session 6 : Stability Analysis and Control Systems • Session 7 : Wireless Technologies, Data Analytics, and Cyber-Physical Systems. • Session 8 : Innovations in Smart Infrastructure and Energy Systems 	<ul style="list-style-type: none"> • Special Session 10 : Materials Science and Quantum Structures • Special Session 11 : AI, IoT, and Intelligent Systems for Enhanced Efficiency

PROGRAM DETAILS

Sessions, 11 December 2024 (17h00-18h30)

On-site

Session 1: Artificial Intelligence and Smart Applications

Prof. Ouafae EL GANAOUI-MOURLAN

Session chairs

Prof. MAHA ANNOUKOUBI

Prof. Ghita ZAZ

17h 00 - 17h 20

Paper ID: 57

Title: Shaping the Future of Brand Management by AI-Powered Predictions

Authors: Zioudi, Omar; Badouch, Mohamed*; Mahmoud, Hasna; Boulmane, Es-said; Boutaounte, Mehdi

17h 20 - 17h 40

Paper ID: 26

Title: Smart Tourism: How AI is Reimagining the Travel Experience

Authors: Badouch, Mohamed*; Boutaounte, Mehdi; Zioudi, Omar; Mahmoud, Hasna

17h 40 - 18h 00

Paper ID: 3

Title: The Future of Travel: A Review of Chatbot Recommender Systems in E-Tourism and Smart Tourism

Authors: Badouch, Mohamed*; Boutaounte, Mehdi; Mahmoud, Hasna; Zioudi, Omar

18h 00 - 18h 20

Paper ID: 63

Title: H-Shaped Terahertz Patch Antenna with Metamaterials for Biomedical Applications

Authors: Saidi Alaoui, Kaoutar*; Siraj, Younes; Foshi, Jaouad

On-site

Session 2: Stability Analysis, Cybersecurity, and Renewable Energy

Session chairs	Prof. Fausto Pedro GARCÍA MÁRQUEZ
	Prof. Nadia MACHKOUR
	Prof. Mouhsine LAKHDISSI
17h 00 - 17h 20	<p>Paper ID: 63 Title: Hydrogen production prediction model based on an artificial neural network for an EMS system in a smart grid: Case of the Dakhla Oued Ed-Dahab region Authors: Omar Chahir , Imad Aboudrar , El Hanafi Arjdal, Mustapha Elyaqouti, El Mehdi Mellouli, Fouad demami, Akram SEDKI</p>
17h 20 - 17h 40	<p>Paper ID: 47 Title: A Bibliometric Review of Research Trends, Challenges and Future Directions in Smart Medical Bracelets Authors: EL AMRI, KAWTAR*; Rabbah, Nabila; Khalfaoui, Ibtissam; Machkour, Nadia; Medromi, Hicham</p>
17h 40 - 18h 00	<p>Paper ID: 32 Title: A Comprehensive Metamodel for Cybersecurity: Based on NIST SP 800-53 Revision 5 Security and Privacy Controls Authors: EL YOUSSEF EL MARZAK*, KHALIFA MANSOURI and SOPHIA FARIS</p>
18h 00 - 18h 20	<p>Paper ID: 5 Title: From Concept to Standard: The Trajectory of CubeSat Space Protocol Standardization Authors: Fadwa Belali</p>

Online – Special Session

Special Session 1 : Control and Design of Renewable Energy Systems

Session chairs	Prof. Demmami Fouad
	Prof. Arjdal El Hanafi
	Prof. Nabil EL FEZAZI
17h 00 – 17h 15	<p>Paper ID: 90 Title: Design and Optimization of Hybrid PV–Wind Systems with Storage for Rural Electrification Authors: Saadaoui, Driss*; Elyaqouti, Mustapha; Choulli, Imade; YDIR, BRAHIM; Lidaighbi, Souad; Elhammoudy, Abdelfattah; Abazine, Ismail; Dris, Ben Hmamou; Arjdal, El Hanafi; Khalid, Assalaou</p>
17h 15 – 17h 30	<p>Paper ID: 89 Title: Electrical Modeling of Photovoltaic Generators for Enhanced Energy Utilization Authors: Elhammoudy, Abdelfattah*; Elyaqouti, Mustapha; Saadaoui, Driss; Ben Hmamou, Driss; Choulli, Imade; Lidaighbi, Souad; Abazine, Ismail; SOUAI, FATIMA EZZAHRAE; BENDRIOUICH, Youssef; El Fatmi, Daoudi; Arjdal, El Hanafi</p>
17h 30 – 17h 45	<p>Paper ID: 93 Title: Enhanced Parameter Estimation for Single–Diode Photovoltaic Models Using Parameter Reduction in Metaheuristic Algorithms Authors: Choulli, Imade*; EL YAQOUTI, MUSTAPHA; SAADAOU, Driss; YDIR, BRAHIM; Arjdal, El Hanafi</p>
17h 45 – 18h 00	<p>Paper ID: 88 Title: Hybrid Particle Swarm Optimization and Numerical Methods for High–Precision Parameter Extraction in Double–Diode Photovoltaic Cell Modeling Authors: Abazine, Ismail*; Elyaqouti, Mustapha; arjdal, el hanafi; Saadaoui, Driss; Ben Hmamou, Dris; Choulli, Imade; Lidaighbi, Souad; Elhammoudy, Abdelfattah; YDIR, BRAHIM</p>
18h 00 – 18h 15	<p>Paper ID: 100 Title: Modeling of the P–V and I–V characteristics of the photovoltaic devices based on metaheuristic approach Authors: Dris, BEN HMAMOU*; EL YAQOUTI, MUSTAPHA; YDIR, BRAHIM; arjdal, el hanafi; Saadaoui, Driss; Ajdour, Amine; Lidaighbi, Souad; Choulli, Imade; Elhammoudy, Abdelfattah; El Fatmi, Daoudi; abazine, ismail; AQEL, Rabya</p>
18h 15 – 18h 30	<p>Paper ID: 146 Title: Analysis and Comparison of Maximum Power Point Tracking Methods in Photovoltaic Systems Authors: Abdelkarim MOUMEN, Farima Boumrir, Abdenbi El Yamani, Abdelkarim Zatni</p>

Online – Special Session

Special Session 2 : Photovoltaic Systems and MPPT Techniques

Session chairs	Prof. Elyaqouti Mustapha Prof. Chalh Zakaria
17h 00 – 17h 15	<p>Paper ID: 84 Title: Advanced Parameter Extraction in PV Systems Using a Bio-Inspired Black-winged Kite Algorithm Authors: YDIR, BRAHIM*; Choulli, Imade; SAADAoui, Driss; Abazine, Ismail; Ben Hmamou, Dris; EL YAQOUTI, MUSTAPHA; Arjda, El Hanafi; Lahlou, Houda</p>
17h 15 – 17h 30	<p>Paper ID: 94 Title: Study of binding energy of a shallow donor impurity in a GaAs/Ga_{1-x}Al_xAs pillbox surrounded by Ga_{1-y}Al_yAs Authors: AMINE, MAZOUZ*; Sali, Ahmed; KAMAL, EL-BAKKARI; Azmi, Hamza; Mohammed, Jaouane; ARRAoui, Reda; Salim, EL OTMANI</p>
17h 30 – 17h 45	<p>Paper ID: 103 Title: The calculation of conduction-band-electron energies in Ruddlesden Popper Perovskites quantum wells Authors: EL-HAMOUCHE, Jamal*</p>
17h 45 – 18h 00	<p>Paper ID: 114 Title: Application of Cuckoo Search for tracking the maximum power point of photovoltaic systems under conditions of partial complex shading Authors: AIT EL OUAHAB, SOUFYANE*; AMGHAR, ABDELLAH; BOUDOUANE, Meriem; EL AIDI IDRISSE, YASSINE</p>
18h 00 – 18h 15	<p>Paper ID: 118 Title: A high-performance photovoltaic system using a super twisting sliding mode control based MPPT with reference generation based on artificial neural networks Authors: EL AIDI IDRISSE, YASSINE*; ASSALAOU, Khalid; Boudouane, Meriem; AIT EL OUAHAB, SOUFYANE; Moustaine, Fatima Zahra; Hani, Achraf; AGDAM, Mohammed</p>
18h 15 – 18h 30	<p>Paper ID: 92 Title: Robust high-order super-twisting sliding mode control for DC-DC step-up converters under time-varying disturbances Authors: El Bouassi, Sanae*; Chalh, Zakaria Pr; Mellouli, El Mehdi; Saka, Abdelmjid</p>
18h 30 – 18h 45	<p>Paper ID: 113 Title: Improving PV system efficiency using MPPT controller based on Herd Horse Optimization algorithm Authors: Boudouane, Meriem*; Elmahni, Lahoucine; AIT EL OUAHAB, Soufyane; EL AIDI IDRISSE, Yassine</p>

Online – Special Session

Special Session 3 : Quantum Properties and Advanced Materials

Session chairs	Prof. Sali Ahmed
	Prof. El Afou Youssef
17h 00 – 17h 15	<p>Paper ID: 70 Title: Image Registration using Corona Virus Search Optimizer for Visual Servoing Robotics Authors: Kmich, Mohamed*; Karmouni, Hicham; Sayyouri, Mhamed</p>
17h 15 – 17h 30	<p>Paper ID: 75 Title: Total optical absorption coefficient of magnetic impurity in CdTe/Cd(1-x)Mn(x)Te semimagnetic double quantum well Authors: Azmi, Hamza*; KAMAL, EL-BAKKARI; AMINE, MAZOUZ; Jaafar, Mohammed Mohammed; FAKKAHI, Abdelghani; Jaouane, Mohammed; Ed-Dahmouny, Ayoub; ARRAOUI, Reda; El Otmani, Salim; Sali, Ahmed</p>
17h 30 – 17h 45	<p>Paper ID: 77 Title: Electron binding energy in multilayered spherical quantum dots: Influence of magnetic field and structural dimensions Authors: FAKKAHI, Abdelghani*; Jaouane, Mohammed; Ed-Dahmouny, Ayoub; ARRAOUI, Reda; KAMAL, EL-BAKKARI; Sali, Ahmed; Azmi, Hamza; El Otmani, Salim; Jaafar, Mohammed Mohammed; AMINE, MAZOUZ; BEN HAMMOU, Omar; El Ghazi, Haddou</p>
17h 45 – 18h 00	<p>Paper ID: 79 Title: Tuning the optoelectronic properties of GaAs/AlGaAs core/shell tetrapod quantum dots with a single dopant Authors: Ed-Dahmouny, Ayoub*; M. Althib, Hind; Sali, Ahmed; ARRAOUI, Reda; FAKKAHI, Abdelghani; Jaouane, Mohammed; Azmi, Hamza; KAMAL, EL-BAKKARI; AMINE, MAZOUZ; A Duque, Carlos</p>
18h 00 – 18h 15	<p>Paper ID: 96 Title: Influence of Electric Field on the Polarizability and Interband Emission Energy of an Exciton in Quantum Dots Authors: KAMAL, EL-BAKKARI*; Azmi, Hamza; Sali, Ahmed; Iqraoun, Elhassan; Jaouane, Mohammed; FAKKAHI, Abdelghani; ARRAOUI, Reda; AMINE, MAZOUZ; El Otmani, Salim; Jaafar, Mohammed Mohammed; Arjdal, El Hanafi</p>
18h 15 – 18h 30	<p>Paper ID: 112 Title: Electronic properties of a donor impurity confined in In_xGa_(1-x)As/GaAs lens-shaped quantum dot Authors: Jaafar, Mohammed Mohammed*; KAMAL, EL-BAKKARI; Jaouane, Mohammed; Azmi, Hamza; FAKKAHI, Abdelghani; Ed-Dahmouny, Ayoub; ARRAOUI, Reda; AMINE, MAZOUZ; El Otmani, Salim; Sali, Ahmed</p>

Sessions, 12 December 2024 (12h00-18h30)

Online - ICESST

Session 1 : Artificial Intelligence and Digital Innovations

Session chairs	Prof. Khalid DAHI
	Prof. Fatih BARKI
	Prof. Ilias OUACHTOUK
12h 00 - 12h 15	Paper ID: 64 Animal Behavior Classification with Transformers – Khalid El Moutaouakil, Nouredine Falih
12h 15 - 12h 30	Paper ID: 20 Efficient IoT Intrusion Detection: Integrating Random Forest Feature Selection with MLP Model Pruning – Kamal Bella, Mouaad Mohy-eddine, Azidine Guezzaz, Said Benkirane, Mourade Azrour
12h 30 - 12h 45	Paper ID: 65 Artificial Intelligence and Digital Infrastructure for Sustainable Industry and Enhanced Corporate Performance: A Bibliometric Analysis of Smart Optimization Technologies – Boussetta Marwane, Ababou Mariame, Faquir Sanae, Rabiai Sara
12h 45 - 13h 00	Paper ID: 13 IoT Security: Cost-effective solution for detecting multiple attacks in IoT network using Machine Learning – Abdelkabir Rouagubi, Elmehdi Benmalek, Omar Enassiri
13h 00 - 13h 15	Paper ID: 45 ANT Colony Optimization with Genetic Algorithm for Solving the Job Shop Scheduling – Mohamed Kriouich, Hicham Sarir
13h 15 - 13h 30	Paper ID: 50 Towards a Practical Digital Twin: A Multi-Model AI-Driven Approach for Manufacturing – Karim Gehad Saadeldin, Radouane Majdoul

Online - ICESST

Session 2 : Renewable Energy and Smart Grids

Session chairs	Prof. Maha ANNOUKOUBI
	Prof. Nabil EL FEZAZI
	Prof. Hicham QABOUCHE
12h 00 - 12h 15	Paper ID: 46 MPPT of Standalone PV System Based on Grey Wolf Optimization (GWO) in Comparison with Traditional Algorithms – Anas El Filali, El Mehdi Laadissi, Elmehdi Benmalek, Malika Zazi
12h 15 - 12h 30	Paper ID: 42 Power Boost Converter Design and Control: Comparative Study of the MPPT Control Algorithms P&O and Incremental Conductance for PV Smart Micro Grid Applications – Mouheddani Hind, Fatima Zahra Bourki, Lhoussine Abaali
12h 30 - 12h 45	Paper ID: 34 Comparison of P&O and Fuzzy Logic Algorithms for Maximizing Solar Photovoltaic Power in Seawater Desalination – Tabsissi Kaouthar, Rabbah Nabila, Semmar Atae, El Ansari Loubna, Laghridat Hammadi, Medromi Hicham, Machkour Nadia
12h 45 - 13h 00	Paper ID: 83 Study of mechanical effects in a PEM fuel cell Authors: Sebbani, Ilham; Ettouhami, Mohamed Karim; Mounir, Hamdi; BOULAKHBAR, Mouaad*
13h 00 - 13h 15	Paper ID: 38 Feasibility of Marine Infrastructure for Zero-Energy Seawater Desalination: Harnessing Hydrostatic Pressure – Achraf El Allaoui, Atae Semmar, Loubna El Ansari, Hammadi Laghridat, Hassan Gziri, Wafaa Dachry, Hicham Medromi
13h 15 - 13h 30	Paper ID: 56 Combined Control by ADRC and DSOGI-FLL of a PMSG Inverter Connected to Grid in Voltage Dip – Mohammed Latifi, Mourad Zegrari, Imad Abouddrar, Radouane Majdoul

Online – Special Session

Special Session 4 : Control Systems and Optimization Techniques

Session chairs	Prof. Mellouli El Mehdi
	Prof. Balboul Youness
12h 00 – 12h 15	<p>Paper ID: 76 Title: Adaptive Sliding Mode Control of Servomotors Using Lyapunov Stability and Particle Swarm Optimization Authors: LAHRACH, Houda*; Mellouli, El Mehdi</p>
12h 15 – 12h 30	<p>Paper ID: 85 Title: Barrier Lyapunov-Based Fuzzy Sliding Mode Control for Autonomous Vehicle Lateral Dynamics Authors: Jennan, Najlae*; Mellouli, El Mehdi</p>
12h 30 – 12h 45	<p>Paper ID: 86 Title: Robust Fixed-Time Sliding Mode Control for Longitudinal Control of Autonomous Vehicles Authors: Khatory, Salma*; Mellouli, El Mehdi; CHAFOUK, HOUCINE</p>
12h 45 – 13h 00	<p>Paper ID: 91 Title: Comparative Analysis of Model Predictive Control, Sliding Mode Control, and Human Driver Performance in Vehicle Trajectory Tracking under Disturbances and Uncertainties Authors: EL KASSMI, Badre*; Mellouli, El Mehdi</p>
13h 00 – 13h 15	<p>Paper ID: 127 Title: Lateral and Longitudinal Dynamics Control using Barrier Function-based Adaptive Sliding Mode with Input Saturation Authors: BELKHEIR, Ayoub*; Mellouli, El Mehdi</p>
13h 15 – 13h 30	<p>Paper ID: 122 Title: AI-Based Techniques for Maximum Power Point Tracking in Photovoltaic Systems Authors: EL AAMERY, Salma*; EL BACHTIRI, Rachid; FRI, Abdelaziz AZIZ; EL HAMMOUMI, Karima</p>
13h 30 – 14h 45	<p>Paper ID: 81 Title: Bidirectional DC/DC converters in electric vehicle onboard chargers: A review of topologies for V2G and G2V applications Authors: EL-HASSOUNI, Hamza*; FRI, Abdelaziz AZIZ; EL BACHTIRI, Rachid; EL HAMMOUMI, Karima</p>

Online – Special Session

Special Session 5 : Materials Science and Solar PV Applications

Session chairs	Prof. Hamin Adil
	Prof. El Afou Youssef
	Prof. Abid Mounir
12h 00 - 12h 15	<p>Paper ID: 71 Title: Elaboration and Characterization of Thin-Film Materials for Photovoltaic Energy Production Authors: BOUTAGOUNT, Sana*; EL FANAOU, Abdeslam; BAKIZ, Bahcine</p>
12h 15 - 12h 30	<p>Paper ID: 73 Title: Optical properties of delta-doped layer within three quantum wells under an electric field Authors: Jaouane, Mohammed*; FAKKAHI, Abdelghani; Ed-Dahmouny, Ayoub; ARRAOUI, Reda; KAMAL, EL-BAKKARI; Azmi, Hamza; AMINE, MAZOUZ; Jaafar, Mohammed Mohammed; El-Otmani, Salim; El Ghazi, Haddou; Sali, Ahmed</p>
12h 30 - 12h 45	<p>Paper ID: 95 Title: Al-Assisted Thermal Study of 2.7 μm Lasing in Er³⁺-Doped Tellurite Fiber Lasers under Different Pumping Schemes Authors: JOUAH, Hmid; ZAKI, Mohamed; EL OUAHBI, Bouazza; Abouricha, Mostafa*; Said, AMRANE</p>
12h 45 - 13h 00	<p>Paper ID: 99 Title: Study of Properties Magnetic in Amorphous Gd₅₂Fe₂₈B₂₀ Alloy Authors: EL OUAHBI, Bouazza; ZAKI, Mohamed; Abouricha, Mostafa*; AMRANE, Said; JOUAH, Hamid</p>
13h 00 - 13h 15	<p>Paper ID: 125 Title: Study of thermal and mechanical properties of microcrystalline cellulose/polyester binary and ternary biocomposites Authors: Khissi, Meryem*</p>
13h 15 - 13h 30	<p>Paper ID: 105 Title: Ultrasonic investigation of the effects of adulteration and temperature on the quality of cosmetic oils Authors: ETTAHIRI, Mohamed*; ADIL, HAMINE; OUACHA, El Houssaine; Mesbah, Hicham; TAFKIRTE, MOUNIR</p>
13h 35 - 13h 45	<p>Paper ID: 145 Title: Modeling of GaSb-Based DFB Lasers with Lateral Gratings: Spatio-Temporal Analysis and Performance Optimization Authors: Abdelkarim MOUMEN, Abdenbi El Yamani, Fatima Boumrit, Abdelkarim Zatni</p>

Online – Special Session

Special Session 6 : AI and Computational Techniques

Session chairs	Prof. EL Benhmamou Dris
	Prof. Sayyouri M'hamed
	Prof. Samira ELHAIFD ALLAH
12h 00 – 12h 15	<p>Paper ID: 55 Title: Necessary and sufficient condition of uniform exponential stabilization for abstract distributed bilinear delayed systems Authors: DELBOUH, Ahmed*, Azzeddine Tsouli</p>
12h 15 – 12h 30	<p>Paper ID: 58 Title: Leveraging Supervised Learning in the Lattice Boltzmann Method via Radial Basis Function Neural Networks Authors: Douich, Yassine*; Silkan, Hassan</p>
12h 30 – 12h 45	<p>Paper ID: 107 Title: AI-Driven People Re-Identification in Video Surveillance: Boosting Tourism Security under Digital Morocco 2030 Authors: IDRISSE ALAMI, MOSSAAB*; EZ-ZAHOUT, ABDERRAHMANE; OMARY, FOUZIA</p>
12h 45 – 13h 00	<p>Paper ID: 108 Title: Review of Artificial Intelligence Applications in PV System Efficiency: Advances in MPPT, Power Conversion, and Grid Integration Authors: MESSGHATI, ZIANI*; FRI, Abdelaziz AZIZ; Mellouli, El Mehdi; EL BACHTIRI, Rachid; EL HAMMOUMI, KARIMA</p>
13h 00 – 13h 15	<p>Paper ID: 120 Title: Digital image encryption based on the combination of multiple chaotic maps Authors: Oumouss, Lahcen*; Asimi, Younes; Asimi, Ahmed; Arjdal, Rguibi</p>
13h 15 – 13h 30	<p>Paper ID: 126 Title: Security Challenges in 5G-Enabled IoT Networks and Potential AI Solutions Authors: Arjdal, Rguibi*; Asimi, Younes; Asimi, Ahmed; Oumouss, Lahcen</p>

Online - ICESST

Session 3 : Advanced Control and Fault Detection Systems

Session chairs	Prof. Fausto Pedro GARCÍA MÁRQUEZ
	Prof. Nadia MACHKOUR
	Prof. Mouhsine LAKHDISSI
15h00 - 15h15	Paper ID: 27 Fault location and Cyber-Attack Detection in smart Power Systems with Wind Generators Using a Multi-Agent System Approach – Azeroual, mohamed*; El Iysaouy, Lahcen; Moughraoui, Fatima Zahra ; El Markhi, Hassane
15h15 - 15h30	Paper ID: 35 Non-Linear Backstepping Controller Design for Hydraulic AGC System of Cold Rolling Mill – Abdelmajid Akil, Ayoub Nouaiti, Nabila Rabbah
15h30 - 15h45	Paper ID: 48 Hybrid Method for Stability Improvement of RDS – Chaymae Makri, Said Guedira, Imad El Harraki, Soumia El Hani
15h45 - 16h00	Paper ID: 31 Enhanced Fault Detection in High-Speed Train Axle Bearings Using Time-Frequency Based Statistical Features: A Test Bench Approach – Meryem Abtane, Khalid Dahi, Hervé Martinez, Mohamed Sedki, Hicham El Kimi, Luciano Fernandes Borges
16h00 -16h15	Paper ID: 51 Multi-Fault Bearing Classification Based Feature Mode Decomposition and Machine Learning – Iman Makrouf, Mourad Zegrari, Khalid Dahi, Ilias Ouachtouk
16h15 - 16h30	Paper ID: 9 Precision Bearing Fault Diagnosis Using Advanced Machine Learning Models and Comprehensive Vibration Signal Feature Extraction – Aychour Soufiane

Online - ICESST

Session 4 : Biomedical Engineering and Smart Health Solutions

Session chairs	Prof. Ouafae El GANAOUI MOURLAN
	Prof. Kaoutar SAIDI ALAOUI
	Prof. Ghita ZAZ
15h00 - 15h15	Paper ID: 44 Challenges and Prospects for Real-Time Glucose Monitoring: Moving Towards Non-Invasive Solutions – Kholoud Fdil, Safae Elhir, Ikram Debbarh, Hicham Medromi
15h15 - 15h30	Paper ID: 54 Systematic Review of Physical, Chemical, and Biological Approaches for Exosome Isolation Towards Optimizing Methods in Clinical Diagnostics – Ayoub Slalmi, Nabila Rabbah, Ikram Debbarh, Ilham Battas, Hicham Medromi, Abdellmjid Abouriche
15h30 - 15h45	Paper ID: 47 A Bibliometric Review of Research Trends, Challenges and Future Directions in Smart Medical Bracelets – El Amri Kawtar, Rabbah Nabila, Khalfaoui Ibtissam, Machkour Nadia, Medromi Hicham
15h45 - 16h00	Paper ID: 8 Hoehn & Yahr Stages Prediction with MFCC and GTCC for Parkinson's Disease Monitoring – Elmehdi Benmalek, Abdelkabar Rouagubi, Omar Ennassiri, Anas El Filali, Jamal El Mhamdi, Atman Jbari, Abdelilah Jilbab
16h00 -16h15	Paper ID: 62 Numerical Investigation of the Relationship Between Environmental Parameters and the Operating Temperature of a Solar Panel – Mohamed Ahliouati, Rabie El Otmani, Khalid Kandoussi, M'Hamed Boutaous
16h15 - 16h30	Paper ID: 6 Innovative Federated Learning approach to secure Internet of Medical Things – Misbah Anass*; Sebbar Anass; Hafidi Imad

Online – Special Session

Special Session 7 : Advanced Modeling and Optimization in Energy and Material Systems

Session chairs	Prof. Demmami Fouad
	Prof. Arjidal El Hanafi
	Prof. Khissi Meryem
15h00 - 15h15	<p>Paper ID: 78 Title: Effects of external perturbations on a donor impurity in a multi-quantum dot system Authors: ARRAOUI, Reda*; Jaouane, Mohammed; Ed-Dahmouny, Ayoub; KAMAL, EL-BAKKARI; FAKKAHI, Abdelghani; Azmi, Hamza; EL-GHAZI, Haddou ; AHMED, Sali</p>
15h15 - 15h30	<p>Paper ID: 87 Title: Correlation between Transient Cavitation Threshold and Particle Removal Efficiency in Single Wafer Cleaning Authors: RHABI, Taha Yassine*; arjidal, el hanafi; Dris, BEN HMAMOU; YDIR, BRAHIM</p>
15h30 - 15h45	<p>Paper ID: 116 Title: Enhancing Battery Performance and Longevity: The Core Functions of Battery Management Systems (BMS) Authors: El allami , Chaimae*; FRI, Abdelaziz; el hammoumi, karima; EL BACHTIRI, Rachid</p>
15h45 - 16h00	<p>Paper ID: 12 Title: A Novel Approach to Modeling Ultrasonic Wave Propagation in Submerged Layered Structures Authors: TAFKIRTE, MOUNIR*; ADIL, HAMINE; Mesbah, Hicham; ETTAHIRI, Mohamed; Akhatar, El Mehdi</p>
16h00 -16h15	<p>Paper ID: 130 Title: Assessment of Solar Photovoltaic Systems under Severe Weather Conditions in the City of Fez Authors: Rharzouz, Soufiane; Yassine, Chaibi*</p>

Online – Special Session

Special Session 8 : Solar PV Systems and Parameter Optimization

Session chairs	Prof. Zakaria Chalh
	Prof. Elyaqouti Mustapha
15h00 - 15h15	<p>Paper ID: 101 Title: A new technic for Parameter Extraction of the Triple Diode Model in Photovoltaic devices Authors: AQEL, Rabya*; arjdal, el hanafi; EL YAQOUTI, MUSTAPHA; Dris, BEN HMAMOU; SAADAQUI, Driss; .lidaighbi, Souad; daoudi, elfatmi; chouli, imade; elhammoudy, abdefattah; YDIR, BRAHIM; abazine, ismail</p>
15h15 - 15h30	<p>Paper ID: 102 Title: Improving Photovoltaic Parameter Extraction: A Novel technique integrating Evolutionary Algorithm with Analytical approach Authors: El fatmi, Daoudi*; arjdal, el hanafi; EL YAQOUTI, MUSTAPHA; Dris, BEN HMAMOU; Saadaoui, Driss; AQEL, Rabya; Lidaighbi, Souad; Choulli, Imade; Elhammoudy, Abdelfattah; YDIR, BRAHIM; Ajdour, Amine; abazine, ismail</p>
15h30 - 15h45	<p>Paper ID: 110 Title: Extraction of Photovoltaic Cell and Module Parameters Using an Iterative Method Authors: SOUAI, FATIMA EZZAHRAE*; EL YAQOUTI, MUSTAPHA; SAADAQUI, Driss; Choulli, Imade; arjdal, el hanafi; YDIR, BRAHIM; Elhammoudy, Abdelfattah; Lidaighbi, Souad; Dris, BEN HMAMOU; Mellouli, El Mehdi</p>
15h45 - 16h00	<p>Paper ID: 123 Title: Hybrid Approach for Electrical Characterization of Photovoltaic Modules Authors: BENDRIOUICH, Youssouf*; YDIR, BRAHIM; arjdal, el hanafi; EL YAQOUTI, MUSTAPHA; Dris, BEN HMAMOU; SAADAQUI, Driss; Lidaighbi, Souad; Choulli, Imade; Elhammoudy, Abdelfattah; El fatmi, Daoudi; abazine, ismail; AQEL, Rabya</p>
16h00 -16h15	<p>Paper ID: 124 Title: Optimization of Photovoltaic Module Parameters Using the War Strategy Optimization Algorithm: An Innovative Approach for High-Performance PV Systems Authors: EL FAHMI, BRAHIM*; SAADAQUI, Driss; Choulli, Imade; Assalaou, Khalid; EL YAQOUTI, MUSTAPHA; arjdal, el hanafi; abazine, ismail</p>

Online – Special Session

Special Session 9 : Advanced Control and Optimization in Renewable Energy Systems

Session chairs	Prof. Mellouli El Mehdi
	Prof. El Afou Youssef
	Prof. ABID Mounir
15h00 - 15h15	<p>Paper ID: 111 Title: Water Electrolysis-Based Hydrogen Production System with Hybrid PV-Battery Integration, Modeling, Control, and Power Extraction Authors: CHAHIR, Omar*; Abouddrar, Imad; Arjidal, El Hanafi; Elyaqouti, Mustapha; Mellouli, El Mehdi; demami, Fouad; SEDKI, Akram</p>
15h15 - 15h30	<p>Paper ID: 131 Title: Solar photovoltaic system topologies used in producing green hydrogen Authors: Yassine, Chaibi*; HANDA, salima</p>
15h30 - 15h45	<p>Paper ID: 133 Title: Enhancing Direct Power Control for Doubly Fed Induction Generator using ANFIS Technique under Dakhla-Morocco City Wind Profile Authors: Yessef, Mourad*; El Ouardi, Souhayla; Ayoubi, Mohamed; Yassine, Chaibi; Elhammoudy, Abdelfattah; arjidal, el hanafi; Chalh, Zakaria</p>
15h45 - 16h00	<p>Paper ID: 132 Title: Energy absorption of TPMS - type porous structures Authors: EL-AMRANI, Mohammed*; fekak, fatima-ezzahra; Moustabchir, Hassane</p>
16h00 -16h15	<p>Paper ID: 134 Title: H infinity Performance of singular systems with time-varying delays Authors: CHAIBI, NOREDDINE*; Bensalem, BOUKILLI; Mohammed, CHARQI</p>
16h15 - 16h30	<p>Paper ID: 106 Title: Thermodynamics Assessment of a Binary System La-Ru: Bridging Ab Initio Calculations and CALPHAD Modeling Authors: Meriam, Boulgana*</p>

Online - ICESST

Session 5 : Technological Innovations and Advanced Applications

Session chairs	Prof. BEN TARLA LAHCEN
	Prof. Sara RABIAI
	Prof. Meriem HOUMER
17h 00 - 17h 15	(Paper ID: 36) Artificial Intelligence in Drone and Anti-Drone Systems: Cutting-Edge Advances and Applications Authors: Ghazlane, YASMINE*
17h 15 - 17h 30	(Paper ID: 30) Development of a Novel Differential Mobile Robot Platform Based on an Original Hoverboard and Experimental Validation of Field-Oriented Control (FOC) for BLDC Motors Authors: Yassine Rhib, Nabila Rabbah, Abdelwahed Touati
17h 30 - 17h 45	(Paper ID: 18) A review on sentiment analysis Approaches Authors: HOURIA, LAAROUSSI*; Fatila, Guerouate; Mohamed, SBIHI
17h 45 - 18h 00	(Paper ID: 68) Environmental AI for Resilient and Sustainable Urban Infrastructures: Rethinking Smart City Transformation Authors: Zehouani Nahid, Ababou Mariame, Faquir Sanae, Rabiai Sara
18h 00 - 18h 15	(Paper ID: 142) Study of energy absorption of TPMS-type porous structures Authors: El-Amrani Mohammed*; Fekak Fatima-Ezzahra; El Alami Eliass; Moustabchir Hassane
18h 15 - 18h 30	(Paper ID: 10) Path Tracking for Self-Driving Cars: Stanley and LQR Controllers Comparison Authors: Bousskoul, Aala Eddine*; Ouachtouk, Ilias; Abdelhafid, AIT ELMAHJOUR

Online - ICESST

Session 6 : Stability Analysis and Control Systems

Session chairs	Prof. Nabila RABBAH
	Prof. TOUATI ABDELWAHED
	Prof. Imad ABOUDRAR
17h 00 - 17h 15	(Paper ID: 39) Finite-time stability analysis of uncertain delayed systems using free-matrix-based integral inequality approach Authors: Aouchicha, El Houssine*; EL FEZAZI, Nabil; El Fathi, Amine; Alvarez, Teresa; Fahim, Mohamed; El Akchioui, Nabil
17h 15 - 17h 30	(Paper ID: 40) Finite-time stability analysis of discrete-time linear systems subject to time-varying delay using a new summation inequality Authors: EL FEZAZI, Nabil; Fahim, Mohamed; Aouchicha, El Houssine; Idrissi, Said; Alvarez, Teresa
17h 30 - 17h 45	(Paper ID: 138) Barrier Lyapunov-Based Fuzzy Sliding Mode Control for Lateral Autonomous Vehicle Dynamics Authors: Jennan, Najlae*; Mellouli, El Mehdi; Arjdal, El Hanafi
17h 45 - 18h 00	(Paper ID: 140) Robust high-order super-twisting sliding mode control for DC-DC step-up converters under time-varying disturbances Authors: El Bouassi, Sanae*; Chalh, Zakaria; Mellouli, El Mehdi; Saka, Abdelmjid
18h 00 - 18h 15	(Paper ID: 141) A Novel Optimal Variable-Gain Sliding Mode Control Using Fuzzy Logic for Autonomous Vehicle Authors: Abdillah, Moussa*; Badre, El Kassmi; Mellouli, El Mehdi; Arjdal, El Hanafi
18h 15 - 18h 30	(Paper ID: 59) MPC Control Technique for Machine-Side and Grid-Side Converters in Grid-Connected PMSG Wind Turbines Authors: EL KASSOUMI, Adil*; Lamhamdi, Mohamed; Abouddrar, Imad; Fdaili, Mohammed; Mouhsen, Ahmed; Mouhsen, Azeddine

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Session 7 : Wireless Technologies, Data Analytics, and Cyber-Physical Systems.

Session chairs	Prof. Bahassine Said
	Prof. Ibtissam Kharchouf
	Prof. Mouaad MOHY-EDDINE
17h 00 - 17h 15	(Paper ID: 11) Rectangular microstrip patch antenna design and performance analysis for wireless applications Authors: Bendaoued, MOHAMMED; Elmajid, Hassan; Essaleh, Anouar; lakrit, soufian; EL FEZAZI, Nabil; alvarez, teresa*
17h 15 - 17h 30	(Paper ID: 19) Credit Card Fraud Detection Comparing Random Forest and XGBoost Models with Explainable AI Interpretations Authors: IKERMANE, Mohamed*; Mohy-eddine, Mouaad; RACHIDI, Youssef
17h 30 - 17h 45	(Paper ID: 23) Novel Metamaterials-Based Patch Antenna for 6G and Biomedical Applications Authors: Siraj Younes, Saidi Alaoui Kaoutar, Foshi Jaouad
17h 45 - 18h 00	(Paper ID: 41) Integrating a Real Time Operating-System Layer to a Memory-Constrained Electrical Power System for a Nanosatellite Authors: ESSETTY, Abdellah*
18h 00 - 18h 15	(Paper ID: 60) Design and Optimization of High-Gain Microstrip Patch Antenna Arrays for GPS Applications Authors: Khouyaoui Ibrahim, Elbathaoui Mouhssin, Mohamed Hamdaoui, Foshi Jaouad
18h 15 - 18h 30	(Paper ID: 83) Firmware Extraction Methods for IoT Devices: An overview Authors: ROUAGUBI, Abdelkadir*; CHOUGDALI, Khalid
18h 15 - 18h 30	(Paper ID: 43) SDN Security On IT & OT Networks : A Systematic Literature Review Authors: Abderrahmane CADI

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Session 8 : Innovations in Smart Infrastructure and Energy Systems

Session chairs	Prof. MAJDOUL RADOUANE
	Prof. Khaoula Chaoui EL GHOR
	Prof. Loubna EL FAQUIH
17h 00 - 17h 15	(Paper ID: 52) Enhancing the Reliability of Kanban Systems with AI Tools in the Automotive Sector: A Case Study Authors: Messour, Manar*; Faycal, fedouaki
17h 15 - 17h 30	(Paper ID: 82) Electric Vehicles and Charging Infrastructures in Morocco: Challenges and Recommendations Authors: BOULAKHBAR, Mouaad*; Oubail, Youssef
17h 30 - 18h 30	Paper ID: 66 _ Title: Unraveling The AI Revolution in Management Control Through Comprehensive Bibliometric Analysis. Authors: RADI, CHAMA*; ABABOU, Mariame; RABIAI, Sara
17h 45 - 18h 00	(Paper ID: 67) Technological innovation in the hospital supply chain Authors: EL AOUIANE, NADA*; SBAI, Abdenabi; ABABOU, Mariame; RABIAI, Sara
18h 00 - 18h 15	(Paper ID: 41) Integrating a Real Time Operating-System Layer to a Memory-Constrained Electrical Power System for a Nanosatellite Authors: ESSETTY, Abdellah*
18h 15 - 18h 30	(Paper ID: 53) Design of Backstepping Control for the Optimisation of VSC Inverters and PWM Rectifiers in HVDC Systems – Elmoudni Youssef, Majdoul Radouane, Touati Abdelwahed

Online – Special Session

Special Session 10 : Materials Science and Quantum Structures

Session chairs	Prof. Sayyouri M'hamed
	Prof. Ahmed Sali
	Prof. Meryem KHISSI
17h 00 - 17h 15	(Paper ID: 74) Electronic properties of a dot-in-rod structure under an electric field Authors: Jaouane, Mohammed*; Sali, Ahmed; ARRAOUI, Reda; Fakkahi, Abdelghani; KAMAL, EL-BAKKARI; Azmi, Hamza; AMINE, MAZOUZ; jaafar, Mohammed; El-Otmani, Salim; EL GHAZI, Haddou
17h 15 - 17h 30	(Paper ID: 115) Effect of size and impurity position on the binding energy in a Pyramidal core/shell/shell quantum dot Authors: BEN HAMMOU, Omar*; FAKKAHI, Abdelghani; Jaouane, Mohammed; EL-HAMOUCHE, Jamal; El Hanafi, Arjdal; SALI, Ahmed
17h 30 - 17h 45	(Paper ID: 104) Temperature-dependent Behavior of Medium-power Thulium Fiber Lasers: A Numerical Investigation Authors: ZAKI, Mohamed*
17h 45 - 18h 00	(Paper ID: 117) Ultrasonic test method for monitoring lubricating oil degradation Authors: Akhatar, El Mehdi*; ADIL, HAMINE; Idrissi, Hafida; Banouni, Hicham; Aboudaoud, Idris; tafkirte, mounir
18h 00 - 18h 15	(Paper ID: 129) Theoretical and experimental study of a traditional prototype desalination system assisted by ultrasound and solar energy Authors: Theoretical and experimental study of a traditionnel prototype desalination system assisted by ultrasound and solar energy
18h 15 - 18h 30	(Paper ID: 143) Experimental validation of a LaBr3 (Ce) and NaI (TI) detector's models developed with Monte Carlo simulations Authors: Issam Mouhti

Online – Special Session

Special Session 11 : AI, IoT, and Intelligent Systems for Enhanced Efficiency

Session chairs	Prof. Mourad Yessef
	Prof. Khaoula Chaoui EL GHOR
	Prof. Benhmamou Dris
17h 00 – 17h 15	(Paper ID: 109) Autonomous vehicles – Software Testing & Automated Testing Authors: SAYYAD, Zakariae*; EL HAMMOUMI, Karima; SABER, Ikram; FRI, Abdelaziz; EL BACHTIRI, Rachid
17h 15 – 17h 30	(Paper ID: 128) Smart Wearable Glove for Enhanced Human-Robot Interaction Using Multi-Sensor Fusion and Machine Learning Authors: HERBAZ, Nourdine*; El Idrissi, Hassan; Badri, Abdelmajid
17h 30 – 17h 45	(Paper ID: 135) Integrating UAV-based Remote Sensing and AI for Enhanced Crop Management Authors: Boufous, Bouchra*; Belaqziz, Salwa; Sekkat, Zouheir ; Refki, Siham
17h 45 – 18h 00	(Paper ID: 13) Optimizing Greenhouse Irrigation for Tomato Cultivation: A Synergy of AI, IoT, and Intelligent Planning Authors: ZLAIGA, Jawad*; Belaqziz, Salwa
18h 00 – 18h 15	(Paper ID: 144) A Survey of Artificial Intelligence Techniques in Intrusion Detection for the Internet of Things Authors: Mourad HANA

PRESENTATION GUIDELINES

- Presentations should be in English. • The time provided for oral presentations is 10 min (10 min for the presentation and 5 min for discussion /Q&A).
- Please save your presentation in PowerPoint or PDF format on a USB drive.
- Presenters are kindly requested to prepare their presentation accordingly, to ensure the smooth running of the conference program. The session chairs will make sure that each presenter is provided the same amount of time.
- ICESST 2024 presenters should give their slides to the session chair before the beginning of each session.
- Verify the date, time, room, and order of your presentation in the final program.



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