جامعة مولاي إسماعيل
UNIVERSITÉ MOULAY ISMAÏL

EST MEKNES
المدرسة العليا للتكنولوجيا
ÉCOLE SUPÉRIEURE DE TECHNOLOGIE

SUP'MANAGEMENT
ÉCOLE SUPERIEURE DE MANAGEMENT DE COMMERCE ET D'INFORMATIQUE
Reconnue par l'Etat

المركز الوطني للبحث العلمي والتقني
Centre National pour la Recherche Scientifique et Technique

The 1ST INTERNATIONAL CONFERENCE on

RENEWABLE ENERGY, ELECTRICAL ENGINEERING AND INTELLIGENT TECHNOLOGIES

R3EIT'26





NOVEMBER 13–14, 2026 | MEKNES, MOROCCO

https://r3eit.com/

WELCOME MESSAGE-R3EIT'26

It is our great pleasure to welcome you to the First Edition of the International Conference on Renewable Energy, Electrical Engineering and Intelligent Technologies (R3EIT'26), organized as a hybrid event in Morocco on November 13-14, 2026, and hosted by the Higher School of Technology in Meknes, Morocco.

The main objective of R3EIT'26 is to provide a platform for researchers to share their latest research findings in various domains including Electrical and Electronics Engineering, Embedded Systems, Renewable Energy Systems, Energy Storage, Microgrids and Smart Grids, Intelligent Systems, Artificial Intelligence and Robotics and Advanced Materials Science and applications.

This conference reflects our collective commitment to promoting interdisciplinary collaboration and fostering innovative solutions to current scientific and technological challenges, particularly those related to Renewable Energy and intelligent engineering systems.

We are delighted to welcome participants from various countries and institutions whose valuable contributions through oral presentations, discussions, and scientific exchanges will undoubtedly enrich this first edition of R3EIT'26.

We would like to express our sincere gratitude to all keynote speakers, authors, participants, scientific committee members, partners, sponsors, and members of the organizing committee for their dedication and support in making this conference a success.

We hope that R3EIT'26 will offer an inspiring environment for fruitful discussions, networking opportunities, and future collaborations.

We wish you an excellent conference and a pleasant stay in Al Meknes, Morocco.

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Prof. Ayoub NOUAITI



Prof. Mohammed TAOUSSI

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KEYNOTE SPEAKERS



Prof. ALLOUHI Amine

Sidi Mohamed Ben Abdellah University, Morocco

Keynote Title:

Renewable Energy Development: New Strategies and Research Directions

Dr. Amine Allouhi is an Associate Professor specializing in Energy and Sustainability, University Sidi Mohamed Ben Abdellah, Fez, Morocco. Holding a PhD in Energy Engineering, he boasts an impressive academic background and substantial research contributions, with recognition from esteemed institutions. Dr. Allouhi has earned an h-index of 39 and an i10 index of 72, with approximately 5000 citations, and is recognized as a top scientist in the field of Energy. His expertise has been acknowledged by CNRST, designating him a leading researcher in Energy Engineering. With over 9 years of teaching and research experience, he has also made significant contributions to leading energy research projects. Dr. Allouhi maintains global collaborations with researchers from prominent universities worldwide, serves as a peer reviewer for prestigious journals, and is often called upon as an expert for international projects. His dedication to mentoring future talent is evident through his supervision of PhD students, and he has contributed to a comprehensive energy systems encyclopedia. Dr. Allouhi's passion for energy and sustainability positions him as a respected authority in the field, shaping a sustainable future for our world.



Prof. SANJEEVIKUMAR Padmanaban

South-Eastern University, Norway

Keynote Title:

Power Electronics in Renewable Energy Systems

Dr. Sanjeevikumar Padmanaban (Member'12–Senior Member'15, IEEE) received a Ph.D. in electrical engineering from the University of Bologna, Bologna, Italy, in 2012. He is a Full Professor in Electrical Power Engineering at the Department of Electrical Engineering, Information Technology, and Cybernetics, University of South-Eastern Norway, Norway. S. Padmanaban has authored over 750+ scientific papers and received the Best Paper cum Most Excellent Research Paper Award from IET-

SEISCON'13, IET-CEAT'16, IEEE-EECSI'19, IEEE-CENCON'19, and five best paper awards from ETAEERE'16 sponsored by Lecture Notes in Electrical Engineering, Springer book. He is a Fellow of the Institution of Engineers, India, the Institution of Electronics and Telecommunication Engineers, India, and the Institution of Engineering and Technology, U.K., and a Fellow of the European Academy of Sciences (Belgium). He received a Lifetime Achievement Award from Marquis Who's Who – USA 2017 for his contributions to power electronics and renewable energy research. He is listed among the world's top 2 scientists (from 2019) by Stanford University, USA. He received the IEEE Systems Council Outstanding Service Award 2025 for his contributions to visionary leadership and outstanding service to the IEEE Systems Council through transformative educational initiatives and global outreach. Also, he received the IEEE Bozenna Pasik-Duncan Humanitarian Mentorship Award 2025 for his mentorship that extends beyond professional excellence, making a human impact by spearheading inclusion, empathy, and opportunity across global technical communities. He is an Editor/Associate Editor/Editorial Board member for refereed journals, in particular the IEEE SYSTEMS JOURNAL, IEEE Transactions on Industry Applications, IEEE ACCESS, IET Power Electronics, IET Electronics Letters, and Wiley-International Transactions on Electrical Energy Systems. Subject Editorial Board Member—Energy Sources—Energies Journal, MDPI, and the Subject Editor for the IET Renewable Power Generation, IET Generation, Transmission and Distribution, and FACETS Journal (Canada).



Prof. SAOUD Adnane

Mohamed VI Polytechnic University, Morocco

Keynote Title:

What AI can do for Control and what Control can do for AI

Dr. Adnane Saoud is an Assistant Professor at University Mohammed VI Polytechnic (UM6P), Benguerir, Morocco. Between September 2021 and August 2023, he was an Assistant Professor (Maitre de conferences) at CentraleSupelec, France. Between January and August 2021, he was a Postdoctoral Research Fellow at the University of California, Berkeley, USA. Between January and December 2020, he was a Postdoctoral Research Fellow at the University of California, Santa Cruz, USA. He received the Ph.D. degree in Control from CentraleSupelec, France, in 2019. In 2018, he was selected as one of the top three finalists for the Best student paper award (as an author) at the European Control Conference, ECC. In 2020, he was selected as a finalist of the French national Best PhD award Discerned by the GdR MACS. In 2021, he was selected as one of the top three finalists of the EECI PhD award, recompensing the best PhD work in Europe in the field of Control. In 2024, He received the "Best Repeatability Prize" at the

IFAC Conference on Analysis and Design of Hybrid Systems, ADHS. In 2025, he was selected as one of the top three finalists for the Best student paper award (as an advisor) at the European Control Conference, ECC. He obtained the M.Sc. degree in control from CentraleSupelec, France, in 2016, and Electrical Engineering degree from Mohammadia School of Engineers, Morocco, in 2014. His current research interests include formal methods for Cyber-Physical systems and machine learning for control.



Prof. FARAH Fouad

Industrial Expert, Morocco

Keynote Title:

Embedded Systems: introduction to diagnostics UDS services

Fouad Farah was born in Fez, Morocco. He holds a Bachelor's degree in Physical Sciences (Electronics) and a Master's degree in Microelectronics from the Faculty of Sciences Dhar El Mahraz, Fez. He earned his Ph.D. in Electrical Engineering, focusing on the design of Li-ion battery charging interfaces and power management circuits. He has over nine years of experience in embedded systems and software testing, working on industrial projects in the automotive and web domains. Fouad has held engineering positions at ALTEN, Alstom, CGI, and Capgemini Engineering, contributing to large-scale international projects for big custmers like Volvo, BMW, Bosch, Daimler... His research interests include mixed-signal CMOS integrated circuit design, battery management systems, power electronics, and embedded systems. He is the author of several peer-reviewed scientific publications in these fields.

CONFERENCE PROGRAM

Friday, November 13, 2026 (GMT)

8h00-9h00	**Welcoming Participants**
9h00-10h00	Official Opening of The R3EIT'26 Conference Higher School of Technology of Meknes, Morocco Moderator: **Prof. Nabil BELMEKKI** (EST, Meknes, Morocco) • **Prof. Aboubakr BOUAYAD:** President of Moulay Ismail University-Meknes • **Prof. Zakaria CHALH:** Director of the Higher School of Technology of Meknes, Morocco • **Prof. Fatiha REGRAGUI:** Deputy Director of the Higher School of Technology of Meknes, Morocco • **Prof. Mohamed EL AMRAOUI:** Director of the LASMAR laboratory • **Prof. Najib EL OUANJLI:** R3EIT'26 Organizing Committee Chair
10h00-10h30	**Coffee Break & Networking**
Meet Link	***https://meet.google.com/cao-womp-vfy***
10h30-12h00	**Plenary Session 1: In Person & Online** **Moderator: Prof. Ayoub NOUAITI (EST, Mekens, Morocco)** **❖ Speaker 1: Prof. Amine ALLOUHI (EST, Fez, Morocco)** ***"Renewable Energy Development: New Strategies and Research Directions"***
13h15-14h45	**Lunch Break & Networking**
Meet Link	***https://meet.google.com/afa-opur-grk***
14h45-15h30	**Plenary Session 2: In Person & Online** **Moderators: Prof. Ayoub NOUAITI (EST, Mekens, Morocco)** **❖ Speaker 2: Prof. Fouad FARAH (Industrial Expert, Morocco)** ***"Embedded Systems: introduction to diagnostics UDS services"***
15h30-18h00	**Oral Session S-1 (In Person)**
	Oral Session S-2 (In Person)
	Oral Session S-3 (In Person)
	Oral Session S-4 (In Person)
	Oral Session S-5 (In Person)

Saturday, November 14, 2026 (GMT)

Meet Link	***https://meet.google.com/yjj-fwuu-cua***
9h30-10h45	**Plenary Session 3: Online** **Moderator: Prof. Mohammed TAOUSSI (EST, Meknes, Morocco)** **❖ Speaker 3: Prof. Sanjeevikumar PADMANABAN (University of South-Eastern Norway, Norway)** ***"Power Electronics in Renewable Energy Systems"*** **Moderator: Prof. Ibtissam TOUAHRI (EST, Meknes, Morocco)** **❖ Speaker 4: Prof. SAOUD Adnane (UM6P, Ben Guerir, Morocco)** ***"What AI can do for Control and what Control can do for AI"***
10h45-11h15	**Break & Networking**
11h15-13h00	**Oral Session S-6 (In Online)**
	Oral Session S-7 (In Online)
	Oral Session S-8 (In Online)
	Oral Session S-9 (In Online)
	Oral Session S-10 (In Online)
	Oral Session S-11 (In Online)
	Oral Session S-12 (In Online)
13h00-13h30	Best Presentation and Contribution Award Session
13h30	**Closing of the Conference: Round Table and Launch of the R3EIT-2nd Editon**

DETAILED PROGRAM

Oral Session S-1 (In Person)	Electrical and Electronics Engineering & Advanced Technologies Friday, 13 November 2026 --- 15h30-18h00 (GMT)
Moderators	**Prof. Seddik BRI** (EST, Meknes, Morocco), **Prof. Abdelhadi ENNAJIH** (ENSEM, Casablanca, Morocco), **Prof. Aumeur EL AMRANI** (EST, Meknes, Morocco) and **Prof. Abdelhafid YAHYA** (EST, Meknes, Morocco)
52	**Comparative Analysis of Machine Learning and Deep Learning Algorithms for Induction Motor Imbalance Diagnosis** *Soumya Laaouj, Aziz Derouich and Abderrahman El Idrissi*
80	**Design and simulation of a rectangular slotted patch antenna for ISM applications** *Taoufik Buyi, Adiba El Fadl, Yassine Mesbahi and Seddik Bri*
195	**Q-Learning-based energy management for a hybrid PV-battery EV charging station with five-port V2G and G2V bidirectional capability** *Abdelouahed Abounasser, Abdelouahed Mesbahi and Mohamed Khafallah*
203	**Adaptive Fuzzy Logic-Based MPPT and Energy Management of a Hybrid PV/Wind/Battery Microgrid** *Imane Hamza, Mohammed Taoussi, Lahcen Bejjit and Yassine Sirouni*
216	**Design and Analysis of an Ultra-Compact, High-Gain Hexagonal Antenna for 5G and Satellite Communications** *Marius Cyrille Domon, Loubna Rmili, Moustapha El Bakkali, Adel Asselman and Samoudi Bousselham*
Oral Session S-2 (In Person)	**Renewable Energy Systems & Energy Storage** **Friday, 13 November 2026 --- 15h30-18h00 (GMT)**
Moderators	**Prof. Abdelali ED-DAHHAK** (EST, Meknes, Morocco), **Prof. Abdelmajid AKIL** (ENSA, Berrechid, Morocco), **Prof. Mohammed GUERBAOUI** (EST, Meknes, Morocco) and **Prof. Abdeslam LACHHAB** (EST, Meknes, Morocco)
26	**Optoelectronic Properties Optimization of Novel D–π–A Organic Semiconductors for High-Performance Solar Cells** *Adil Ziani, Imane El Mhamedi and Zakaria El Malki*
31	**Optimal PV-Grid Source Switching Control for Wireless Electric Vehicle Charging Systems Using a Grey Wolf Optimizer-Based MPPT Algorithm** *M'barek Lamghari, Najib El Ouanjli, Abdelali Ed-dahhak, Mohammed Guerbaoui and Abdeslam Lachhab*
86	**Improving PV Power Prediction for Digital Twins: Multicollinearity Analysis, Hyperparameter Optimisation and Interpretability of Ensemble Models** *Chaima Ait Abbou, Samira El Faiz, Kenza El Telbissi and Abdeslam Lachhab*
110	**Numerical Comparison of Lumped and Multiphysics Models for Hydrogen Storage in Metal Hydride Reactor** *Amina Belgarni, Bilal Lamrani, Maha Bhouri and Tarik Kousksou*

113	**Experimental Study of Sand-Based Power-to-Heat Storage for Green Hydrogen Applications** *Hajar Fakir, Bilal Lamrani and Younes Chrafih*
123	**Photovoltaic power forecasting with PAC-TiDE: a physically-anchored, capacity-bounded time-series dense encoder** *Ilyas Oudabraim, Abdelwahed Echchatbi and Adil Rizki*
179	**Thermal Management and Electrical Efficiency Enhancement of a Photovoltaic Thermal Panel Using Micro-Channel Cooling: A 3D CFD Investigation** *Soulaymane Choukri, Youness El Mghouchi and Achraf Oukhadda*
215	**Semi-Empirical Modeling of a PEM Electrolyzer Coupled to a PV System for Green Hydrogen Production: Effect of Temperature, Pressure and Membrane Thickness with PSO Based Techno-Economic Optimization** *Abdelghani Ben Touil, Hamza El Hafdaoui, Ahmed Lagrioui and Mourad Yessef*
Oral Session S-3 (In Person)	**Intelligent Systems, Artificial Intelligence and Robotics** **Friday, 13 November 2026 --- 15h30-18h00 (GMT)**
Moderators	**Prof. Abdellatif DAHMOUNI** (EST, Meknes, Morocco), **Prof. Youssef MOUZOUNA** (ENSEM, Casablanca, Morocco), **Prof. Mostafa MERRAS** (EST, Meknes, Morocco) and **Prof. Yassine AYAT** (EST, Meknes, Morocco)
32	**When Sensors Fail: Evaluating Imputation Robustness for Reference Evapotranspiration Forecasting in Semi-Arid Morocco** *Zakaria Bakziz, Ismail Ichou, Mohammed Guerbaoui, Abdeslam Lachhab and Abdelali Ed-Dahhak*
93	**Federated learning for water quality classification: a privacy- preserving approach using multi-basin environmental data** *Salma Hmid, Abdelhadi Ennajih, Youssef Mouzouna, Ikram Daanoune and Sara Hardad*
103	**YOLO-based architectures for mammographic lesion classification: A comparative study** *Mohammed Mechdoud, Abdessamad Ourammou, Abdellatif Dahmouni and Idriss Chana*
112	**An AI-Driven Emotion-Aware Framework for Intelligent Adaptive Systems Using Hybrid Deep Facial Emotion Recognition** *Lamyae Bennis and Hamid Bennis*
135	**Normal-Only Photovoltaic Defect Detection in Electroluminescence Images Using Deep Features and Self-Organizing Maps** *Khalid Salhi, Hamza Khalloufi and Hamid Bennis*
186	**Spatial CNNs collapse under diffusion shift: An empirical audit of deepfake detector generalization** *Youssef Ziani, Adnane Filali, El Arbi Abdellaoui Alaoui, Mostafa Merras et Idriss Chana*
190	**A category-level comparison of retrieval and generative models for medical question answering on MedQuAD** *Sanae Yousfi, Ibtissam Touahri, Idris Chana, and Mostafa Merras*
191	**Artificial intelligence and UAV-based multimodal remote sensing for early crop water stress detection and precision irrigation: a critical review** *Imane Es-saber, Mostafa Merras, Achraf Berrajaa and Idriss Chana*

Oral Session S-4 (In Person)	Advanced Materials Science and Applications Friday, 13 November 2026 --- 15h30-18h00 (GMT)
Moderators	**Prof. Mohamed EL AMRAOUI** (FST, Meknes, Morocco), **Prof. My Chrif EL BOUBAKRAOUI** (FST, Errachidia, Morocco), **Prof. Abdelmajid EL BAKKALI** (FS, Meknes, Morocco) and **Prof. Younes BENHOURIA** (ENA, Meknes, Morocco)
19	**Magnetic properties of a double-layer nanoisland-decorated Ising model: Monte Carlo simulation** *L. Aqachtoul, M. Mouhib, Z. Bentahar, M C El Boubakraoui, B. elayady and A. El Bakkali*
28	**Microwave, ultra-wideband and polarization-insensitive metamaterial absorber for C, X and Ku band application** *Zakariae Bentahar, Lahcen Aqachtoul, My Chrif El Boubakraoui and Abdelmajid El Bakkali*
33	**Tea Tree Essential Oil as a Green Corrosion Inhibitor for Carbon Steel in 1 M HCl: An Experimental and Theoretical Study** *Y. Benaarif, R. El Adnani, B. Youbi, H. Eddoukali, Y. Z. Abalhate, A. Ouedrhiri, A. Adli, I. Mounsif, O. Azhar, I. Souhil, I. Bimaghra and Y. Lghazi*
34	**Chemical Activation of Sawdust for Emerging Pollutant Adsorption: A Comparative Study of Activating Agent** *H. Eddoukali, A. Ouedrhiri, H. Bouderbala, Y. Lghazi, S. Belouaad, M. Chafi and S. Bakkali*
59	**Structural, microstructural, and electrical properties of Zr-doped LLTO for all-solid-state batteries** *Abderrahim Toualeb, Abdelhak Chouiekh, Abdessalam Serati, Mohamed Naji, Nabil Amri and Ali Didi Seddik*
Oral Session S-5 (In Person)	**Advanced Materials Science and Applications Friday, 13 November 2026 --- 15h30-18h00 (GMT)**
Moderators	**Prof. Zakaria EL MALKI** (EST, Meknes, Morocco), **Prof. Hassane CHADLI** (EST, Meknes, Morocco), **Prof. Lahcen BEJJIT** (EST, Meknes, Morocco) and **Prof. Omar IKEN** (EST, Meknes, Morocco)
77	**A Monte Carlo computational study of an AA-type bilayer graphene system** *Mimoun Ameggoun, Seddik Bri, Adiba El Fadl, Majid Mouhib and Boujemaa Elayady*
79	**Impact of the co-substitution of Sr and Zr on the structure and ionic conductivity of the LLTO perovskite solid electrolyte** *Abdessalam Serati, Abdelhak Chouiekh, Abderrahim Toualeb, Ali Didi Seddik, Mohamed Naji and Nabil Amri*
106	**Temperature Effects on the Performance of a Hybrid SPR Sensor for High-Sensitivity Detection** *Fatima Houari, Mohamed El Barghouti, Abdellah Mir and Abdellatif Akjouj*
121	**Development and Characterization of a Gypsum-Based Composite for Thermal Insulation** *Hafsa El Mhaden, Abdelkhalek Kammouni and Fahd Oudrhiri Hassani*
180	**Numerical Modelling and Stability Analysis of Carrier Confinement in a GaAs/InAs/GaAs Quantum Well** *Abderrahmane Rajana, Asmaa Drighil and Abdelmoughit Zaarane*

Oral Session S-6 (Online)	Electrical and Electronics Engineering & Advanced Technologies Saturday, 14 November 2026 --- 11h15-13h00 (GMT)
Moderators	**Prof. Youness EL MOURABIT** (EST, Fez, Morocco), **Prof. Said MAHFOUD** (EST, Khenifra, Morocco), **Prof. Faysal YADEN** (ENSAM, Meknes, Morocco) and **Prof. Abdelilah HASSOUNE** (ENSA, Beni Mellal, Morocco)
Meet Link	***https://meet.google.com/aor-kaun-wpx***
36	**Cascaded Field-Oriented Control of a PMSM Traction Drive for Electric Vehicles with d-q Decoupling and Back-EMF Compensation** *Elmehdi Ennajih, Hakim Allali, Ezzitouni Jarmouni, Hind Tarout and Ayoub Eljafry*
37	**Digital Twin-Based Approaches for Monitoring, Control, and Optimization of Hybrid Electric Vehicles** *Marouane Chgora, Hicham Rouijaa, Mohamed Chabli and Najib El Ouanjli*
56	**Optimal Coordination of Adaptive Protection Systems in Medium-Voltage Networks** *Kenza Telbissi and Samira El Faiz*
60	**Impact of EV Charging Strategy on Photovoltaic Energy Utilization under Fixed Campus Load Profile: ENSEM Case Study** *Kamal Nait Khachat, Abdelouahed Mesbahi and Mohamed Khafallah*
74	**Design and Fabrication of a Rectangular Microstrip Patch Antenna at 2.4 GHz on FR-4 Substrate for ISM Applications** *Yassine Mesbahi, Ayoub Benhamou, Taoufik Buyi, Sanae Habibi, Adiba El Fadel, Mohammed Habibi, Seddik Bri and Omar Mouhib*
91	**Spatiotemporal Reconstruction of Processor Thermal Maps for Predictive Thermal Management** *Azzeddine Maaqoul, salaheddine khamlich and Issam Bidane*
94	**Performance Comparison of Conventional Field-Oriented Control and Sliding Mode Control for PMSM Drives Under Load Disturbances** *Issam Chtaitif, Mohamed Benchagra, Soukaina Essaghir and Jalil Akaaboune*
Oral Session S-7 (Online)	**Electrical and Electronics Engineering & Advanced Technologies** **Saturday, 14 November 2026 --- 11h15-13h00 (GMT)**
Moderators	**Prof. Mahmoud MOSSA** (Minia University, Egypt), **Prof. Kamal ANOUNE** (FST, Settat, Morocco), **Prof. Youness ATIFI** (ENSA, Beni Mellal, Morocco) and **Prof. Ismail EL KAFAZI** (EST, Khenifra, Morocco)
Meet Link	***https://meet.google.com/qhm-hbda-hij***
104	**CST–ADS Co-Design and Nonlinear Performance Assessment of a Dual-Band 3.5/5.8 GHz Rectenna for Low-Power RF Energy Harvesting** *Ayoub Benhamou, Yassine Mesbahi, Kawtar Baroudi, Sanae Habibi, Taha El abdoulli, Mohamed Habibi, Seddik Bri and Omar Mouhib*
108	**Validation of a Longitudinal Battery Electric Vehicle Model for Advanced State Estimation Applications** *Sana Inimlil, Salaheddine Khamlich and Issam Bidane*
109	**Deep Learning-Based Radar-Camera Fusion for Real-Time Object Detection and Tracking in Autonomous Driving** *Safae Faouzi, Salaheddine Khamlich and Issam Bidane*

119	**Large-signal characterization of toroidal inductors used in DC-DC converters for photovoltaic applications** *Koularambaye MBAITELBE, Solalta RANGUEBAYE, Dari YAYA DAGAL*
124	**Performance Improvement of a Compact Microstrip Diplexer Using Split Ring Resonator Metamaterials** *Mohamed Hejja and Nawfal Jebbor*
136	**Performance and Robustness of a Fuzzy Logic-Based DTC for a DFIM in Electric Vehicle Traction under External Disturbances** *Ahmed Chantoufi, Aziz Derouich, Najib El Ouanjli, Said Mahfoud, Abderrahman El Idrissi and Houssam Ech-chaouy*
142	**Dynamic Modelling and Simulation of a Standalone Photovoltaic Water-Pumping System Driven by an Induction Motor** *Fatima Id Ouissaaden, Hamza Kamel, Fahd Elmourabit, Yassine Essakali and Said Dlimi*
Oral Session S-8 (Online)	**Renewable Energy Systems & Energy Storage** **Saturday, 14 November 2026 --- 11h15-13h00 (GMT)**
Moderators	**Prof. Aboubakr EL HAMMOUMI** (EST, Tetouan, Morocco), **Prof. Abdelilah CHALH** (FST, Mohammedia, Morocco), **Prof. Smail CHTITA** (FST, Beni Mellal, Morocco) and **Prof. Mourad LOUCIF** (Tlemcen University, Algeria)
Meet Link	***https://meet.google.com/uob-nzrk-geu***
24	**Theoretical Research on the Development of New Conjugated Compounds for Organic Solar Cells** *Imane El Mhamedi, Adil Ziani and Zakaria El Malki*
48	**Comparative Simulation of a PVT Microgrid with Seasonal Hybrid Battery-Hydrogen Storage under a Rule based EMS: A Souss-Massa versus Fez-Meknes case study** *Jihane El Moussaoui and Amine Amharech*
53	**Design and Experimental Analysis of an IoT Platform for Real-Time Photovoltaic Monitoring and Intelligent MPPT Control** *Abdelmalek Mimouni, Youssef Chahet, Aumeur El Amrani, Mohamed Azeroual, Yassine Ayat, Mohamed El Amraoui and Lahcen Bejjit*
57	**Development and validation of a fuzzy logic controller for fast and stable MPPT operation in photovoltaic systems under changing environmental conditions** *Said El-bot, Yassine El Moujahid and Abdessamad Benlafkih*
76	**First-Principles Investigation of Intermetallic Hydrides for Advanced Solid-State Hydrogen Storage Applications** Youssef Didi, Abdellah Tahiri, Rachid Ahfir and Mohamed Naji
81	**Annual finite volume assessment of hemp wool optimum insulation thickness under future climate conditions: dynamic performance, life-cycle cost and operational carbon emissions** *Abdellah Bendidi, Maryam Dlimi and Rachid Agounoun*
90	**Hybrid Genetic Algorithm–Particle Swarm Optimization for PI Controller Parameter Tuning in DFIG-Based Wind Turbine MPPT Systems** *Mohammed Es-salmi, Mohammed Taoussi and Abdelfatah El Ouadiki*
92	**Metal hydride-PCM thermal coupling: CFD simulation of heat management during green hydrogen absorption in LaNi5** *Nouhayla Jout*

Oral Session S-9 (Online)	Renewable Energy Systems & Energy Storage Saturday, 14 November 2026 --- 11h15-13h00 (GMT)
Moderators	**Prof. Mostafa BOUZI** (FST, Settat, Morocco), **Prof. Abdelilah HILALI** (EST, Fez, Morocco) and **Prof. Hala ALAMI AROUSSI** (EST, Oujda, Morocco)
Meet Link	***https://meet.google.com/dbn-yojp-wss***
115	**Thermal behavior modeling and development of a battery protection for lithium-ion batteries** *Israe Hiddane, Hasnaa Oubnaki, Badia Mounir, Tarik Saidi, Ilham Mounir and Laila Elmazouzi*
122	**Intelligent fault detection and monitoring in DC microgrids with renewable energy and storage** *Hafsa El Meskini, Mohamed Azeroual and Seddik Bri*
125	**Raspberry Pi-Based PID and Fuzzy Energy Management under Renewable Source Dropouts in a DC Microgrid** *Fatima Zahra Moughraoui, Ahlame Mfikra, Mohamed Azeroual and Hassane El Markhi*
204	**Sliding Mode Control Theory Applied to an Active Rectifier** *Slimane Chiboub, Mohamed Khafallah and Jawad Lamterkati*
85	**Predictive-transition INC-Fuzzy MPPT for robust tracking under abrupt irradiance changes in photovoltaic water pumping systems** *Yassine Sirouni, Mohammed Taoussi, Bejjit Lahcen and Hamza Imane*
128	**Intelligent and Renewable Energy-Based Public Lighting Systems: A Comprehensive Systematic Review** *Nouredine Morhli, Imane Bouhaddou, Asmaa Benghabrit and Mohammed Belkadi*
134	**Comparative analysis of the performance of three MPPT Algorithms for photovoltaic systems exposed to different irradiance levels** *Az-eddine Kaiba, Aumeur El Amrani, Najib El Ouanjli, Ayoub Nouaiti and Abdelfettah El-Ghajghaj*
Oral Session S-10 (Online)	**Renewable Energy Systems & Energy Storage Saturday, 14 November 2026 --- 11h15-13h00 (GMT)**
Moderators	**Prof. Soukaina EL DAOUDI** (FS, Marrakech, Morocco), **Prof. Mohamed AZEROUAL** (EST, Meknes, Morocco), **Prof. Assaad EL MAKHLOUFI** (EST, Fez, Morocco) and **Prof. Naoufal EL YOUSSFI** (ERA, Marrakech, Morocco)
Meet Link	***https://meet.google.com/mab-zrdp-wmf***
139	**Improved Sliding Mode Control with a Modified Reaching Law for Grid-Connected PMSG-Based Wind Energy Conversion System** *Loay Sameh, Almoataz Y. Abdelaziz, Ameena Saad Al-Sumaiti and Mahmoud A. Mossa*
140	**Numerical investigation of a glazed water-based photovoltaic/thermal (pv/t) collector: performance comparison in laminar and turbulent flow regimes** *Fatiha Mennioui, Ayoub Nouaiti and Najib El Ouanjli*
141	**Combined SCAPS-1D and DFT investigation of a-Si0.83Ge0.17: H/a-Si: H thin-film solar cells** *Yassine Essakali, Fahd Elmourabit, Fatima Id Ouissaden, Hamza Kamel and Said Dlimi*

150	**Modeling and Performance Analysis of a Transformer less Single-Phase Grid-Connected Photovoltaic System** *Hamza Kamel, Fatima Id Ouissaaden, Fahd Elmourabit, Yassine Essakali and Said Dlimi*
185	**Robust Photovoltaic Parameters Estimation under Varying Irradiance and Temperature Using an Opposition-Based Parent Selection Differential Evolution Algorithm** Youssef Chahet, Abdelmalek Mimouni, Abdellatif Bouaichi, Mohamed El Amraoui, *Aumeur El Amrani and Lahcen Bejjit*
223	**Modelling and Performance Analysis of a Renewable Energy-Based Electrolytic Green Hydrogen Production System** *Moussa Reddak, Ayoub Nouaiti and Said Yadir*
Oral Session S-11 (Online)	**Intelligent Systems, Artificial Intelligence and Robotics** **Saturday, 14 November 2026 --- 11h15-13h00 (GMT)**
Moderators	**Prof. Ibtissam TOUAHRI** (EST, Meknes, Morocco), **Prof. Aziz MOUMEN** (CRMEF, Sefrou, Morocco), **Prof. Samira EL FAIZ** (EST, Meknes, Morocco) and **Prof. Adil BOUHOUCH** (EST, Meknes, Morocco)
Meet Link	***https://meet.google.com/gah-ysta-zbr***
17	**Physics-informed multimodal guided-wave machine learning for quantitative notch-depth estimation in bonded Al–epoxy–Al trilayer cylinders** *Azdine Drissi, Ahmed khayat and Mhammed Elallami*
18	**Contrastive (CLIP) and generative (M3AE) multimodal learning for medical imaging** *Amina Ait M'ha, Farah Oubelkas, Toufik Fouad and Lahcen Moumoun*
47	**Predicting football match outcomes using complex network analysis and machine learning** *Salah-eddine Hammoudi, Abdellatif Dahmouni and Idriss Chana*
68	**Physics-informed machine-learning classification of railway wheel fatigue risk: a surrogate for the Hertz–Basquin model** *Sabah Louragli, Bouchra Abouelanouar and Abdeslam Lachhab*
89	**A multi-dataset machine-learning intrusion detection system for real-time automotive CAN bus monitoring** *Oussama Chiadmi, Yassine Ayat, Ali El Moussati, Meryem Dinar, Bri Seddik, Aumeur El Amrani and Abdelmalek Mimouni*
100	**Architectural Compression of YOLO26n for TinyML-Enabled Smart Farming** *Ayman Khafif, Youssef Mouzouna, Abdelhadi Ennajih, Chaimae Hazman and Mohamed Bousbaa*
117	**Towards Clinical Translation of Artificial Intelligence in Ophthalmic Optical Coherence Tomography: A Systematic Review and Taxonomy of Implementation Barriers** *Hind sajid, Amrane Said, El Khadiri Khalid, Dlimi Said and Kamel Hamza*
205	**Medical large language models: A Review** *Hamza Aouadi, El Habib Nfaoui and Said El Garouani*

Oral Session S-12 (Online)	Advanced Materials Science and Applications Saturday, 14 November 2026 --- 11h15-13h00 (GMT)
Moderators	**Prof. Abdessamad DIDI** (ISSS, Settat, Morocco), Prof. **Adiba El FADL** (ENS, Meknes, Morocco), **Prof. Hamane LEMZIOUKA** (FSDM, Fez, Morocco) and **Prof. Amine LACHHEB** (EST, Meknes, Morocco)
Meet Link	***https://meet.google.com/qrg-dbqu-asc***
71	**Optimizing the Nonlinear Optical Response of Multilayered Spherical Quantum Dots by Structural and Magnetic Engineering** *Fakkahi Abdelghani, Mohamed jaouane, Sali Ahmed, Azmi Hamza and Reda Araoui*
84	**Nanostructured membranes for the direct capture of CO_2 from the air** *Khadija Ichrmad, Inass Elhaouari, Alae Elabed and Lhachmi Khamar*
27	**Finite Element investigation of Microwave Absorption Properties of C-Fe_3O_4/PVDF Composites in X- and Ku-Band Frequencies** *El Hassan Benyachou, Youssef Ouhassan, My Chrif El boubakraoui and Abdelmajid El Bakkali*
98	**Mineralogical characterization of pink minerals from Bou Azzer mine, Morocco** *Mohamed El Omari, Mohamed El Amraoui, Lahcen Bejjit, Aumeur El Amrani, Abdelmajid El Bakkali, Salam Khrissi, Mustapha Haddad and Saadia Ait Lyazidi*
163	**Study of the stability, mechanical, thermal, thermoelectric, electronic and magnetic properties of full Heusler Co2XSn (X = Ti, V): using DFT approximation** *Adil El Galta and R. Masrour*
218	**Laplace Approach to Modeling the Time- and Frequency-Dependent Behavior of Multiphase Viscomagnetoelectroelastic Composite Materials with Imperfect Interfaces** *Youssef El Bachiri and Abderrahmane Bakkali*