

2025 International Conference on Advanced Sustainability Engineering and Technology

17 - 18 April 2025 - KENITRA - MOROCCO

- Track 1: Intelligent Control Systems for Power & Energy Management
- Track 2: Smart Cities Infrastructure for Sustainable Urban Development
- Track 3: Advanced Technologies for Smart Cities Management
- Track 4: Mathematics & Optimization for Sustainability
- Track 5: Communication, Networking, & Broadcast Technology
- Track 6: Computing, Processing, and Signal Analysis
- Track 7: Data Science and Cybersecurity
- Track 8: Advanced Technologies and Applications

General Chair

Prof. Dr. Chakib EL MOKHI (EST-UIT, Kenitra, Morocco)

Keynote Speakers

Prof. Dr. Abderrahim LAKHOUIT
University of Quebec in Abitibi-Témiscamingue, Canada
Rupa SINGH
Founder and CEO of The AI Bodhi and AI-Beehive, India

Co-Chairs

Prof. Dr. Hanaa HACHIMI (ENSA-UIT, Kenitra, Morocco)
Prof. Dr. Nabil HMINA (UIT, Kenitra, Morocco)
Prof. Dr. Adnane ADDAIM (EMI, Rabat, Morocco)
Prof. Dr. Anand NAYYAR (DTU, Da Nang, Vietnam)

Partners



Technical Program

Thursday April 17th, 2025 (GMT+1)

08h00 - 09h00	Registration			
09h00 - 10h00	Opening Ceremony			
	Online Link: https://teams.live.com/join/9381287315819?p=kr22TVuWPFU7yfOhaa			
10h00 - 10h30	Coffee Break			
10h30 - 11h30	Keynote Speaker 1			
11h30 - 13h30	Parallel Sessions			
	Session 1	Session 2	Session 3	Session 4
13h30 - 15h00	Lunch			
15h00 - 17h00	Parallel Sessions			
	Session 5	Session 6	Session 7	Session 8

Friday April 18th, 2025 (GMT+1)

08h00 - 09h00	Registration			
09h00 - 10h00	Keynote Speaker 2			
10h00 - 10h30	Coffee Break			
10h30 - 12h30	Parallel Sessions			
	Session 9	Session 10	Session 11	Session 12
13h00 - 14h30	Lunch			
14h30 - 16h30	Parallel Sessions			
	Session 13	Session 14	Session 15	Session 16
16h30 - 17h00	Closing Ceremony			
	Online Link: https://teams.live.com/join/9378315719421?p=PYFQJUOxkEjAwtkBhN			

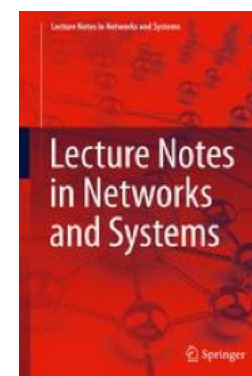


Keynote Speaker 1
Rupa SINGH
Founder and CEO
of the AI Bodhi & AI-Beehive, India
Chair Session: Prof. Dr. Adnane ADDAIM



Keynote Speaker 2
Prof. Dr. Abderrahim LAKHOUIT
University of Quebec
in Abitibi-Témiscamingue, Canada
Chair Session: Prof. Dr. Yasmine ACHOUR

Moderated by Prof. Dr. Bouchra Bouklata



Session 1
Chairs: Prof. Dr. Abdelkader Mezouari, Prof. Dr. Abdelmoula Abouhilal

Paper ID	Authors / Paper Title
5	Kaoutar Ait Chaoui, Oumaima Choukai, Hassan El Fadil, Chakib El Mokhi and Oumaima Ait Omar / Performance Comparison of Deep Learning Models for Forecasting PV Energy Production and Consumption: A Case Study Using CNN, LSTM, and CNN-LSTM Hybrid
7	Ikhlef Jebbor, Zoubida Benmamoun and Hanaa Hachimi / Predicting Automotive Industry Supply Chain Disruptions Using Machine Learning: Challenges and Insights
8	Samar Mouti, Hani Alchalabi, Sulafa Abdalla, Samer Rihawi and Mohamed Abushohada / Dynamic IoT-Enabled Sign-to-Text System for Inclusive and Sustainable Communication in Deaf Communities
31	Mohamed El Adib and Farah Ajana / Factors Influencing the Adoption of Digital Technologies in Moroccan Audit Firms: A Quantitative Analysis
33	Hind Bourass, Outmane Soussi Noufail, Hanaa Hachimi, and Ithri Fettahi / Estimating Moroccan Yield Curve Parameters with the Nelson-Siegel-Svensson Model on Historical Data

Online Link: <https://teams.live.com/join/9366484432246?p=AOfyNnYTZ6wont071Z>

Session 3
Chairs: Prof. Dr. Tomader Mazri, Prof. Dr. Mohammed Kaicer

Paper ID	Authors / Paper Title
184	Muhammad Mohsin, Stefano Rovetta, Francesco Masulli, Alberto Cabri and Abbas Malik / Adaptive Multi-Stage Transfer Learning Approach for Electronic Component Detection in Waste Printed Circuit Boards
63	Youssef Lahouifi, Moulay Youssef Hadi, Redouan Korchiyne and Boukhalfa Alaeddine / Investigating the Security Risks of Enabled Debug Mode in Publicly Accessible Environments
72	Hajar Hardi and Imade Fahd Eddine Fatani / Semantic-Aware HEVC Video Compression: Leveraging Transformer Networks for Enhanced QoS in Real-Time Transmission
73	Mouna El Mkhalet and Nouzha Lamdouar / Data-driven Approach to Seismic Classification of Moroccan Provinces: PCA, k-Means, and hierarchical Clustering
74	Yassine Bouazza and Azza Llajjam / Optimizing Energy through Operations Planning

Online Link: <https://teams.live.com/join/9397192638906?p=8HmUa3iMjJ8I19u6KI>

Session 2
Chairs: Prof. Dr. Youmna El Hissi, Prof. Dr. Zhour Madini

Paper ID	Authors / Paper Title
12	Zineb Elqabli, Oulaid Kamach and Youness Chater / Modeling of schedulers switching dynamics in a multimode system using Switched Linear Differential Systems
25	Oumaima Hansali, Samah Elrhanimi and Laila El Abbadi / A Framework of a Digital Supply Chain Maturity Model for Automotive Industry
35	Malak Dargham, Hanaa Hachimi and Mohamed Jalal / A comparative assessment of content quality between AI and human authors : what is the difference between the content produced by artificial intelligence (AI) and the content produced by human authors?
52	Badreddine Lahlali, Fatima Zohra El Abdelaoui, Nabil Moujibi and Abdelouahhab Jabri / Energy efficiency and cost reduction through parameters cut optimization for finishing phase of multi-pass turning operation
151	Soukaina Essaghir, Tajeddine Khalili and Mustapha Oulcaid / Impact study of Harmonic Analysis of a Grid-Connected Photovoltaic System Feeding Nonlinear Load

Online Link: <https://teams.live.com/join/9351863271001?p=V9LqhB38w3lkv3LniW>

Session 4
Chairs: Prof. Dr. Youness Zouine, Prof. Dr. Mohamed Gouskir

Paper ID	Authors / Paper Title
55	Mohammed Ziani / Electricity Production and the Question of Urban Sustainability : The Case of Jerada
61	Naoual Nassiri, Ayoub Jibouni and Sahar Saoud / Enriching Arabic Educational Data with AraBERT and Similarity Assessment
62	Oumaima El Abidi, Mouna El Mekhalet and Nouzha Lamdouar / Pavement Behavior Using Neural Networks and Monte Carlo Simulations
65	Hajar Bideq, Khaoula Ouaddi and Rachid Ellaia / A bi-colony Ant Algorithm for constrained multi-objective optimization of organizational transport logistics using heterogeneous fleet: a case study
96	Chaimaa Khouya and Rachida Idchabani / ML-Driven forecasting of heating and cooling demand across six Climate zones in Morocco: A simulation-based approach
187	Chakib El Mokhi, Hassane Erguig, Nabil Hmina and Hanaa Hachimi / Intelligent Traffic Management Systems: A Literature Review on AI-Based Traffic Light Control

Online Link: <https://teams.live.com/join/9392791660914?p=sHUITIS4oP8lJK1HF7>

Session 5
Chairs: Prof. Dr. Abdelkarim Zemmouri, Prof. Dr. Nabil Benamer

Paper ID	Authors / Paper Title
105	Ikrame Kiyadi and Hayat El Boukhari / Educational Technology and Adaptive Learning: A Bibliometric Analysis
115	Raja’a Al-Naimi / Refined Inequalities for p-Numerical Radii of Operator Products in Hilbert Spaces
117	Amine Bourhlal and Kaoutar Alhaderi / Digital transformation and SME performance: a systematic literature review
118	Nabil Roussafi, Samah Elrhanimi and Laila El Abbadi / Inventory management: Opportunities of Industry 4.0 technologies application
124	Otman Ait Ihia, Driss Khomsi, Naoual Semlali Aouragh Hassani and Wendin-So Aldric Malgoubri / Modeling Air Pollution from Road Transportation: A Bibliometric Study

Online Link: <https://teams.live.com/meet/9366484432246?p=AOfyNnYTZ6wont071Z>

Session 7
Chairs: Prof. Dr. Anass Barodi, Prof. Dr. Abdellah Nouib

Paper ID	Authors / Paper Title
114	Ahlam Er-rahmani and Aziz Bensbahou / Synergy between E-government and Governance for Sustainable Development in African Countries
119	Ahmed Tgarguifa, Myriam El Mesbahi, Hanaa Hachimi and Abdellatif Hafidi / Deep Learning and Genetic Algorithms for High-Performance Distillation System Optimization
128	Mohsine Kartita, Abdelkarim Zemmouri, Anass Barodi, Mohamed Chahid and Mohammed Benbrahim / Evaluating OpenCL, OpenMP, MPI and CUDA for Embedded Systems
132	Youssef Madkouri, Hamza Sekkat, Youssef El Merabet, Abdellah Khallouqi, Karim Bahhous, Mohammed Aggour and Farida Bentayeb / Qualitative and quantitative analysis for assessing dose and image quality variations between single-shot volume acquisition and helical acquisition in temporal bone and lumbar spine CT imaging: From noise evaluation to radiologists scoring of structures

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Session 6
Chairs: Prof. Dr. Salma Azzouzi, Prof. Dr. My Charaf Hassan

Paper ID	Authors / Paper Title
93	Mohammed Zizi, Anas Chafi and Mohammed El Hammoumi / Quantum Computing for Sustainable Supply Chains: Unlocking Efficiency, Environmental Progress and challenges
97	Hind Settou and Amina Aomari / The electronic opinion leader's contribution to changing subscribers' attitudes
103	Hicham Chbihi Kaddouri, Mohamed Kadous / Exploring the corporate sustainability reporting trends: A bibliometric analysis using Clarivate’s WoS database between 2014 - 2025
106	Meryem Benazzouz and Mohamed El Fatini / Analysis of a stochastic SIRI epidemic model with disease relapse

Online Link: <https://teams.live.com/meet/9351863271001?p=V9LqhB38w3lkv3LniW>

Session 8
Chairs: Prof. Dr. Sara Arezki, Prof. Dr. Mohammed Boutalline

Paper ID	Authors / Paper Title
136	Zakaria Charouh, Amal Ezzouhri, Hamza Mediouni, Mounir Ghogho and Zouhair Guennoun / An Integrated Framework for Remaining Range Forecasting
139	Mouad Abdeslami, Driss Bouggar, Mohamed El Fatini and Raya Noura / Pontryagin’s Principle in Optimal Control for a Stochastic Epidemic System
144	Abdellatif Ahammad, Anouar Bouchal and Maryam Radgui / Mini-Process Cubes: Enabling Real-Time Analysis and Process Discovery in Online Process Mining
154	Soufiane Hajbi, Anass Kharbouche, Madini Zhour and Younes Zouine / A Survey of Handover Approaches in Visible Light-Based V2X Communications
158	Said Ait Faraji, Nouzha Zaoujal / What is the optimal value of the carbon tax for Morocco?

Online Link: <https://teams.live.com/meet/9392791660914?p=sHUITIS4oP8lJK1f7>

Session 9
Chairs: Prof. Dr. Laila El Abbadi, Prof. Dr. My Youssef Hadi

Paper ID	Authors / Paper Title
53	Omayma Ez-zahraouy and Oulaid Kamach / Evaluating Reinforcement Learning and Machine Learning Algorithms for Predicting Product Quality
140	Hayat Bihri, Salma Azzouzi and My El Hassan Charaf / A Multi-Modal Approach for Cardiovascular Disease Prediction by Combining both Images and non-Image Data
141	El Mustapha El Anouar, Mohamed Jallal El Adnani, Mohamed Es-Seqally, Marouane Zouine, Mustapha El Azzabi and Said Laghribi / Does e-learning improve teachers' professionalism?
157	Avinash Yadav, Vishal Chetty and Amit Maurya / Assessing the Cooling Impact of Urban Blue Infrastructure on Land Surface Temperature Using Local Climatic Zones from 2014 to 2024 in Varanasi, India
185	Abdel-Ylah Amazzal, Mohamed El Ghadouia, Mustapha Boumeska and Mustapha Bengrich / Artificial intelligence, decision making and financial performance: Evidence from Moroccan industrial companies

Online Link: <https://teams.live.com/meet/9366484432246?p=AOfyNnYTZ6wont071Z>

Session 11
Chairs: Prof. Dr. Samah Elrhanimi, Prof. Dr. Mostapha Oulcaid

Paper ID	Authors / Paper Title
135	Assioui Driss and El Gouri Rachid / Optimized Sizing of Hybrid Renewable Systems Using Metaheuristics Under Load Variability
164	Ghita Layoune, Asmaa El Hannani, Yassin El Hillali and Fatima Zahra Salmam / Real-Time Driver Inattention Detection: A Comprehensive Analysis of Unimodal Deep Learning Models
165	Yassine El haddioui, Nour Alem, Zhour Madini and Youness Zouine / Monte Carlo-Based Analysis survey of TOF and FMCW LiDAR Systems for Enhanced Performance in Foggy Conditions
167	Zakaria Charouh, Amal Ezzouhri, Mounir Ghogho and Zouhair Guennoun / Toward A Generic Congestion Forecasting Framework

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Session 10
Chairs: Prof. Dr. Habiba Chaoui, Prof. Dr. Wiam Ayrir

Paper ID	Authors / Paper Title
60	Nada Nejjari, Anas Chafi and Salaheddine Kammouri Alami / The lean manufacturing tools within the handicraft industry
89	Ismail Ouahabi, Oulaid Kamach and Widad Fethallah / A New Decision Framework for Sustainable Supplier Selection in the Automotive Industry
134	Younes Koulou, Anas El Attaoui, and Norelislam El Hami / Prediction by Deep Learning - GNN of interdependencies within the SoS
160	Abdessamad Diani, Laila Aligod / Modeling the relationships between green supply chain practices and the financial and environmental performance of the company

Online Link: <https://teams.live.com/meet/9351863271001?p=V9LqhB38w3Ikv3LniW>

Session 12
Chairs: Prof. Dr. Yasmine Achour, Prof. Dr. Ahmed Ait Errouhi

Paper ID	Authors / Paper Title
125	Oussama Hmoudat, Sara Rhouas, Norelislam El Hami and Khalid Choug dali / Enhancing Cybersecurity with Deep Learning: A Study on Intrusion Detection Systems
133	Zineb Sahmi, Laila EL Abbadi / Kaizen 4.0: Leveraging Industry 4.0 Technologies for Continuous Improvement and Digital Transformation in SMEs
137	Saida Ifiss / Artificial Intelligence and Good Governance: A Roadmap for Performance-Driven Public Sector Transformation
147	Raja'a Al-Naimi, Reham Qaralleh and Mutti-Ur Rehman / On Properties of Poly-Quasihomogeneous Toeplitz Operators on the Bergman Space
152	Fouad Issouani, Ayyad Maafiri and Soumia Ziti / Advances in Medical Image Segmentation: A Comparative Study of Hybrid CNN-Transformer Architectures and Specialized AI Models

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Session 13
Chairs: Prof. Dr. Houssam Benbrahim, Prof. Dr. Maria Zemzami

Paper ID	Authors / Paper Title
142	Zoubida Benmamoun, Mahmoud Mistarihi, Raisah Al Ali, Abdulla Al Hammadi and Eissa Al Hammadi / Developing Sustainable AI Policies, Strategies, and Practical Applications
163	Nisrine El Ayat, Adil Tannouche, Hamid Ouanan and Mohammed Boutalline / Exploring Behavioral Patterns and Predicting Academic Success: Insights from Machine Learning in Adaptive Mathematics Learning Systems
168	Fatima Ezzahra Chaou, Zoubida Benmamoun and Mouad Benmamoun / Application of AI and IoT for Predictive Maintenance: A Comparative Study of Algorithms and Model Performance
172	Bouchra Bouayad, Samah Elrhanimi and Laila El Abbadi / Blockchain Implementation for Managing Automotive Supply Chain: Systematic Literature Review
183	Abdelilah Chahid, Youssef El Marzak, Souad Ahriz and Khalifa Mansouri / Enhancing Cloud Security: A Model for Attack Detection and Prevention Using AI Technologies

Online Link: <https://teams.live.com/meet/9366484432246?p=AOfyNnYTZ6wont071Z>

Session 15
Chairs: Prof. Dr. Amal Tarbi, Prof. Dr. Hamad Dahou

Paper ID	Authors / Paper Title
169	Nadir Al Shibli, Arun S Gopinath, Maryam Al Balushi1, Khalifa Al Quri and Joseph Sekhar Santhappan / Remote Area Electrification using PV/Fuel cell /Diesel Hybrid System in Oman – Techno Economic and Environment viability analysis
179	Houda El HadaF, Kaoutar Ajmili and Abdelilah Jraifi / Enhancing spare parts inventory management through Q-Learning algorithm
180	Salim Khammal and Ahmed Khouya / Energy analysis of a Trigeneration and hydrogen plant driven by concentrated photovoltaic thermal system for residential application purposes
100	Yasser Oueld El Haj El Ghali, Abou-bakr Cherki and Chouaib Benqlilou / Thermophysical characterization of new composite material based on Clay and Cactus seeds
186	Mohamed Hachimi, Ismail El Gaabouri, Brahim El Bhiri, Saad Motahhir and Mohammed Boussetta / Cybersecurity Attacks and Defense Techniques in Microgrid Networks: A Comprehensive Survey

Online Link: <https://teams.live.com/meet/9397192638906?p=8HmUa3iMjJ81I9u6KI>

Session 14
Chairs: Prof. Dr. Achour El Hamdaouy, Prof. Dr. Driss Serrou

Paper ID	Authors / Paper Title
107	Kawtar Jellid and Tomader Mazri / Adaptive Approach to Enhance ITS-G5 Protocol Performance in High-Density Environments Using Artificial Intelligence
113	Ouidad Akhrif, Zakariae Saidi, Mohamed Elkhchine and Younes El Bouzekri El Idrissi / Fuzzy Logic for uncertainty management and personalized learning: Applications in Artificial Intelligence and Collaborative Systems
126	Chaymaa Lakouismi, Hamza Ouamna, Zhour Madini, Youness Zouine and Anass Kharbouche / A Review on AI-Driven Dynamic Spectrum Access for Next-Generation Wireless Networks
127	Mohamed Chahid, Abdelkarim Zemmouri, Anass Barodi, Mohsine Kartita and Mohammed Benbrahim / Classification of multiple eye diseases, parallel feature extraction with transfer learning
161	Rasha Hasan and Patricia Iglecias / Looks Sustainable But It Is Not

Online Link: <https://teams.live.com/meet/9351863271001?p=V9LqhB38w3Ikv3LniW>

Session 16
Chairs: Prof. Dr. Oumaima Choukai, Prof. Dr. Abderrahim Tayebi

Paper ID	Authors / Paper Title
34	Bochra Labiad, Mariam Tanana, Abdelaziz Laaychi, and Abdelouahid Lyhyaoui / The Evolution of Web Vulnerability Detection: From Manual Scrutiny to Machine Learning Automation
58	Hagar Mohamed and Amina Toumi / Leverage of latest technological advancements in Cancer care: Prevention, Diagnosis, Treatment, and Prognosis
91	Ouassima Erefai, Hinde Hami, Sanae Elkafssaoui, Amina Boufars, Abdelmajid Soulaymani, Abdelrhani Mokhtari, Sara Sennani and Rachid Fares / Exploring Healthcare Professional’s Engagement with E-Health in Oncology: Toward Smarter and Connected Healthcare System
95	Ahmed Khoumsi and Mohammed Erradi / Optimal patient distribution enforced by blockchain
174	Merouane Obayd, Abdelkarim Zemmouri, Anass Barodi, Mohammed Benbrahim / Advanced Diagnostic Techniques for Automotive Systems: Innovations and AI-Driven Approaches

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