

# The 9th International Conference on Environment-Friendly Energies and Applications

## 4-5 December 2025, Newcastle upon Tyne, UK & Online

**4 December 2025**

Time	Room			
8:15-8:45		<b>Registration</b>		
8:45-09:00	Rothbury	<b>Opening - Prof Busawon</b>		
9:00-10:20	Rothbury	<b>Session D1AM1 - Chair Prof Busawon</b>		
		<b>Paper ID</b>	<b>Paper Title</b>	<b>Presenter</b>
		27	Architecting Emission-Aware ML Workflows: Runtime Energy Monitoring and Optimization	Sowparnika Nair
		31	A Machine Learning-Enhanced Management Information System for Predictive Human Resource Management	Urmi Haldar
		79	Risk Mitigation and Grid Incentive Adoption in Battery Electric Bus Operations: A Trade-Off	Vivien Glönkler
	44	Analysis and System Suggestions for Sustainable Transportation in the Era of New Energy Vehicles: a perspective from China	Junjie PAN	
	Belford	<b>Session D1AM2 - Chair Dr Mahdi</b>		
		77	Modeling and Analysis of Multi-Topology DC–DC Converters for Intelligent Power Regulation	Essa Alharthi
		56	Cyberattack Detection in DC Microgrids Using Logical Monitoring Framework	Bandar Mahlawi
		50	Evaluation of Voltage Harmonic Influences from Grid-Connected PV Systems on Induction Motor Drive Efficiency	Abdulaziz Al-Harthi
54	Thermal Management and Efficiency Optimization of PEMFCs under Dynamic Driving Conditions	Ibrahim El-Khalil BOUZIANE		
10:30-11:00	Zio Bar	<b>Break</b>		
11:00-12:20	Rothbury	<b>Session D1AM3 - Chair Prof Dala</b>		
		1	Performance Evaluation of an Optimised Aluminum–Copper Busbar Design for LV Distribution Panels	Lala Rukh
		41	Dynamic Response Analysis and Parameter Estimation of a Governor System of a Synchronous Generator	Theekshana Nikaweratiya
		35	Design and Implementation of a Solar-powered Wireless Charging System for Electric Vehicles: a Sustainable Approach to Green	Veena Madavanathara Narayanan
	60	Interleaved Active Switched Inductor Converter Using Adaptive Delta Modulation Control Loop for Renewable Energy Application	Farag Alargt	
	Belford	<b>Session D1AM4 - Chair Prof Busawon</b>		
		80	Investment planning for sector coupling plants using holistic LCC optimization including empirical cost functions	Georg Gutermuth
		90	Optimal energy storage solution for renewable energy integration	Zi Qian
		42	Data Fusion of IoT Appliance Traces and Satellite Solar Irradiance for Energy-Efficient and Robust PV–Battery Sizing Under Uncertainty	Adewale Ogabi
	46	Selection of the Optimal Hybrid Renewable Energy System using Exergy-based MCDM - a Case Study of Gonyeli	Dumebi Nwajei	
	Jesmond Tyne & Dene	<b>Session D1AM5 - Chair Prof Maheri</b>		
		5	Compressed Hydrogen Storage Cost and Power Modelling Parameters and a Robust Power Balance Analysis Algorithm	Jenson Trow
		21	Pumped Storage Hydropower in High Renewable Energy Penetration Systems	Edwin Gamboa-Pirca
22		A Pathway to Net-zero Power Generation in Barbados Using Hybrid Renewable Energy Systems and Hydrogen	Tré Mason	
23	Decarbonisation of Operation of an Oil & Gas Platform and Repurposing for Green Hydrogen Production	Alireza Maheri		
12:30-13:30	Zio Bar	<b>Lunch</b>		

13:30-14:00	Rothbury	<b>Keynote Talk 1 - Prof Jean-Pierre Barbot</b> <b>Active Fault-Tolerant Control for Renewable Energy Systems</b>		
14:00-15:00	Rothbury	<b>Session D1PM1 - Chair Dr Malik</b>		
		70	Machine Learning-Based Voltage Stability Enhancement in Renewable-Integrated Power Systems	DESHVEER NARWAL
		57	AI-Driven Digital Twins in Microgrid Energy Systems: A Sustainability Perspective with V-PARS	ESRA ÇAKIR
		34	Optimising Data Centre Energy Systems with Onsite Renewables and Battery Storage: A MILP Framework for Decarbonisation	Adib Allahham
	Belford	<b>Session D1PM2 - Chair Dr Mahdi</b>		
		55	Net-Zero Pathways and the Future of GB Electricity Transmission Networks	Shengming Cao
		73	Techno-Economic Design and Implementation of Fuel cell system for Residential Application	Khursheed Sabeel
		40	Socio-Technical, Electrification, and Hydrogen-Driven Pathways for Residential Heating Decarbonisation in the North of Tyne	Mohamed Abuella
	Jesmond Tyne & Dene	<b>Session D1PM3 - Chair Prof Dhundhara</b>		
		28	Current Trends in Intrusion Detection in Smart Grids Using Explainable AI	Sunil Kumar
30		Quicker to Train and Cheaper to Run: Edge-Ready DRL for Microgrid Resilient Energy Management	Mohammad Hossein Nejati Amiri	
61		Three-Layer Hierarchical Control Architecture for Coordinated Multi-ESS Management in Microgrids	Neelu Nagpal	
15:00-15:30	Zio Bar	<b>Break</b>		
15:30-17:10	Rothbury	<b>Session D1PM4 - Chair Prof Bone</b>		
		83	Designing systemic interventions for a Just Transition to Net Zero: Case of the JUST-Systems Programme.	Tavis Potts
		66	Employment Factors in the Energy Transition: Comparative Study of Three Regions	Iyowuna Gobo
		45	Multicriteria Optimisation of District Heating Configurations for Energy Efficiency and Carbon Reduction in High-rise Buildings	Ramin Mansouri
		62	District Heating in High-rise Buildings: A Socio-technical Approach to Reduce Fuel Poverty	Ramin Mansouri
		63	From Reflection to Action: Conceptual Design of a Critical Systems Heuristics Implementation Framework for Energy Transition	Alireza Maheri
	Belford	<b>Session D1PM5 - Chair Dr Dai</b>		
		68	Cloud-Enabled Monitoring and Control of Hydrogen-Based Energy Storage: Challenges and Opportunities	Raffaello Secchi
		17	IoT-based Real-Time Energy Routing Algorithm in The Energy Internet	Dina Emad
		36	Data-Driven Digitalization of Container Ship Electrical Systems for AI-Ready Onshore Power Supply Demand Estimation	Pedro Costa
		91	A Novel Artificial Intelligence Model for Marine Oil Spill Detection	Aruchamy Prasanth
		87	Successive loop control design analysis for LTI systems	Krishna Busawon
	Jesmond Tyne & Dene	<b>Session D1PM6 - Chair Prof Dala</b>		
		11	Energy Transition in Oil-producing Sub-Saharan Africa: The Case of Nigeria	Ajinatswen Dawuda
		12	Assessing Energy Transition Strategies of Germany, Nigeria, Qatar and the United Kingdom	Ajinatswen Dawuda
7		Transition of Isolated Communities to Net-zero: Case of El Pinar on El Hierro in the Canary Islands	Imam Abed	
8		Cost and Power Modelling Parameters of Different Utility Scale Battery Technologies for Design of Hybrid Renewable Energy Systems	Imam Abed	
15	CHP Cost and Emission Modelling Parameters and Power Balance Analysis Algorithm for Design of Multi-vector Energy Systems	Richard Heard		

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Time Room

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8:30-9:00		<b>Registration</b>		
9:00-10:20	Rothbury	<b>Session D2AM1 - Chair Prof Busawon</b>		
		92	Phasing Out of Hydrofluorocarbons: Review and implementation status in Mauritius	Raj Dreepaul
		58	Indirect Torque For Induction Machines Using a Reduced Order Model	Jean-Pierre Makiadi Masala
		86	A comprehensive review of CSR and an environmentally inclusive framework for implementation	Krishna Busawon
		2	The k-index: a fairer assessment of research quality and its societal and environmental impact	Krishna Busawon
	Belford	<b>Session D2AM2 - Chair Dr Qian</b>		
		76	A Techno-Economic Analysis of a Solar-Powered Humidification-Dehumidification Desalination System for Remote Arid Regions	Pak Leung
		78	Adaptive Optimal Control for DC-Bus Integration with A Single-Phase Microgrid Under Uncertain System Dynamics	Abdulelah Alshareef
		84	Stabilization-Triggered Reinforcement Relearning Control for Virtually Coupled Train Sets	Shigen Gao
	Jesmond Tyne & Dene	<b>Session D2AM3 -Chair Prof Ristic</b>		
		4	Design and Development of an Arc Capacitance Level Sensor for Sensitivity Enhancement of Level Measurement Systems	Jayalaxmi Hanni
		59	Dynamic Estimation of Membrane Water Content in a PEM Fuel Cell Using Real-Time Humidity Sensing	Bilal ABDEREZZAK
		88	Reverse Engineering and Core Loss Quantification in an Industrial Synchronous Reluctance Motor Drive	Leposava Ristic
65	Numerical Study of Transient Behavior of a Molten Carbonate Electrolysis Cell (MCEC)	TSIATSIPY Durand Brunel Zozime		
10:30-11:00	Zio Bar	<b>Break</b>		
11:00-12:20	Rothbury	<b>Session D2AM4 - Chair Dr Shen</b>		
		47	Enhancing Wind Tunnel Aerodynamic Testing with User-Defined Signal Functions for Accurate Angle-of-Attack Oscillation	Xiang Shen
		64	Performance of ALK and PEM Electrolysers in Wind- and Solar-Powered Green Hydrogen Production	Ramin Mansouri
		6	Pumped Storage Hydropower Cost and Power Modelling and Power Balance Analysis in Multi-vector Energy Systems	Brian Macleod
		26	Evaluating the Spacial Distribution of Wind Farms in Greece and Their Impacts on the Landscape using G.I.S.	ELIZABETH PARASKEVI CRAWFORD
	Belford	<b>Session D2AM5 - Chair Dr Malik</b>		
		24	Renewable Solar Energy Source; A Solution to Epileptic Power Supply in Mubi	Ali Danladi
		49	Potential Development of Waste Heat Recovery System for Thermal Sand Reclamation Machine by Organic Rankine Cycle.	Chu Hing Wong
		32	Implementation and Analysis of a 3MW Grid-linked PV System	Kayyam Saikumar
	33	Mitigation of Current Harmonics in Grid-Connected PV Systems with Non-Linear Loads using Active Current Coefficient Control	Kayyam Saikumar	
	Jesmond Tyne & Dene	<b>Session D2AM6 - Chair Dr Dai</b>		
		9	Flexural Behaviour of Slender Flexibles in Floating Offshore Energy Devices	Majid Aleyassin
		10	Analysis of Anchor and Fairlead Forces on Offshore Floating Wind Platforms	Majid Aleyassin
48		Power regulation strategy of downwind wind turbines based on cone angle control	Xiang Shen	
75	A Scalable Hybrid LES-ANN Framework for Wake Prediction in Yawed Wind Turbine Arrays	Kiran Perkins		

12:30-13:30	Zio Bar	<b>Lunch</b>		
13:30-14:00	Rothbury	<b>Keynote Talk 2 - Prof Leposava Ristic</b>		
14:00-15:00	Rothbury	<b>Session D2PM1 - Chair Prof Maheri</b>		
		20	A Participatory Multiobjective Optimisation of Hybrid Renewable Energy Systems for Decarbonised Heating and Resilient Energy	Helen Corbett
		51	Atlantis Hybrid Complex: Offshore Wind and Pumped Storage Hydropower for Clean Hydrogen	Gustavo Andrade
		16	Decarbonisation of Ski Resorts: Case of the Lecht Ski Centre in the Scottish Highlands	Richard Heard
	Belford	<b>Session D2PM2 - Chair Prof Dala</b>		
		43	Hardware-in-the-Loop Evaluation of Transition Control for Tilt-Rotor Uncrewed Aerial Vehicles	Yan Zong
		39	Evaluating Static Time-of-Use Tariffs for an Interconnected Mini-grid in Nigeria	Oluwanifemi Ojo
		89	Investigating the Future of Automotive Aftersales	Jorge Eslava-Bautista
	Jesmond Tyne & Dene	<b>Session D2PM3 - Chair Dr Dai</b>		
		53	Optimization of a Solar-Powered Domestic Refrigerator: A Techno-Economic Analysis for Semi-Arid Climates	okba bouaichaoui
		69	Development of Integrated Shipboard Microgrid for Simultaneous Realization of Emission Reduction and Carbon Neutrality	Sachio KUBOTA
		18	Performance Evaluation of Biogas , Electric Driven Hybrid and Direct Mode Solar Dryer	Nayanita Kalita
15:00-15:30	Zio Bar	<b>Break</b>		
15:30-16:50	Rothbury	<b>Session D2PM4 - Chair Prof Busawon</b>		
		29	Feasibility analysis of photovoltaic installation in an experimental agricultural field.	ELISA SANCHEZ CRUCES
		37	A Frequency Stability Predictive Approach with PV Integration. A Case Study for the Republic of Mauritius	Abdul Ahad Jhumka
		19	Building Energy Use Analysis and Modeling Through Dynamic Modeling Tools	Abuelgasim Zakaria
		85	Environmental and energy aspects of subcooled condensate and steam trap operation	Sasa Stasevic
	Belford	<b>Session D2PM5 - Chair Dr Malik</b>		
		94	Use of e-Scooters by University Students	Faheem Malik
		95	Students Attitude towards App based Mobility	Munirah Alobaid
		96	Acute Lymphoblastic Leukaemia Detection using CNN along with Attention Modules	Sheeba Malik
97	Soil quality index under different tillage systems in Temperate Himalayas Through Quantitative Assessment	Ifra Mir		
16:50-17:00	Rothbury	<b>Closing - Prof Busawon</b>		