

5th Solar and Wind Power Conference

JUNE 11-12, 2025

Merchiston campus, Edinburgh Napier University
Edinburgh, Scotland



Day 1, Wednesday 11th June 2025 - Glassroom B70

8:30 - 9:15 Registration

9:15 - 9:30 Opening Remarks

Dr Nazmi Sellami,
Conference Chair
Edinburgh Napier University

9:35 - 10:15 Keynote talk 1: The Art of Concentrating Energy: Exploring the Frontiers of Solar Thermal Power and Storage

Dr Mohammad Moghimi
Ardekani
University of Staffordshire

Session 1 Chair: Dr Carolina Costa Pereira; Edinburgh Napier University

10:20 - 10:40 Application of Solar Thermal Energy to Processes (ASTEP), Development and Demonstration

Dr Peter Kew
David Reay and Associates

10:40 - 11:00

Break & Networking

11:00 - 11:20 Economic Performance of the ASTEP Solar Thermal System over a period of 30 years: A Case Study

Lisa Gobio-Thomas
Brunel University

11:20 - 11:40 Numerical study of Concentric Solar Power-integrated Thermal Energy Storage system for Hydrogen Generation

Dr Neelesh Soni
Indian Institute of Technology

11:40 - 12:00 Dust-Resistant Solar Panel Coating to Boost Energy Output in Arid Regions

Sharif Alsahbool
The American University in
Cairo

12:00 - 12:20 Enhancing Photovoltaic Panel Performance Using Fresnel Lens Concentration and Passive Cooling: An Experimental Study
(ONLINE)

Dr Mahmoud Eltaweel
University of Hertfordshire

12:20 - 12:40 Enhancing Cybersecurity in Solar Energy Systems with Voting Classifiers

Dr Bhuvaneshwari AJ
Sri Sivasubramaniya Nadar
College of Engineering

12:30 - 13:00 AI-Driven BIPV Potential Prediction: Integrating GIS and Deep Learning for Accelerating Building Decarbonisation

Mohammed Abdulhameed
Edinburgh Napier University

13:00 - 14:00

Lunch & Networking

Session 2 Chair: Dr Taimoor Asim, Robert Gordon University

14:00 - 14:40 Keynote talk 2: Energy on Demand: Integrating Battery Storage into Grid Infrastructure

Prof Mohammed Abusara
Exeter University

14:45 - 15:05 Wind Turbine Reliability Analysis Using SCADA and Maintenance Data

Max Malyi
University of Edinburgh

15:05 - 15:25 Aero-Hydrodynamic Characterisation of Fixed-bottom NREL 5MW Wind Turbine

Jaidon Kurisinkal
Robert Gordon University

15:25 - 15:45

Break & Networking

15:45 - 16:05 The impact of off-shore windfarms on seafloor ecology and integrity

Luke Bradley
Edinburgh Napier University

16:05 - 16:25 Microgrid power management and seamless power transfer control from grid forming to grid following for parallel inverters

Taimoor Khan
Edinburgh Napier University

16:25 - 16:45 Exploring the Feasibility of Waste-to-Energy Technologies Towards the UK's Net Zero

Chika Marvis
Edinburgh Napier University

16:45 - 17:05 Investigating the Self-Cleaning Effect of TiO₂ Coatings on Solar Panel Technologies

Waqar Younas
Edinburgh Napier University



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Day2, Thursday 12th June 2025 - Classroom B70

9:15 - 9:30 Registration

9:30 - 10:10 Keynote talk 3: Bridging Innovation and Implementation: Insights from Industrial Frontlines

NDUKWE HENRY IBIAM

Session 3 Chair: Dr Lina Khaddour; Edinburgh Napier University

10:15 - 10:35 Robust MPPT for 100kW PV System Using ST-SMC with Adaptive P&O: A Performance-Based Evaluation

Ateeb Hassan
Edinburgh Napier University

10:35 - 10:55 Optimised Design of a Boost Converter for a Grid-Connected Solar System Using MPPT with a Perturb & Observe Controller

Mathew, J, A
Edinburgh Napier University

10:55 - 11:15

Break & Networking

11:15 - 11:35 Evaluate solar energy efficiency using advanced satellite imagery and MATLAB/Simulink simulations.

Muhammad Arslan
Edinburgh Napier University

11:35 - 11:55 Evaluation of Performance of Solar Cell Integrated Supercapacitor by Light Intensity Control

Shahina Shareef
Edinburgh Napier University

11:55 - 12:15 Cleaning Methods for Solar PV Systems in Sri Lanka: Economic and Environmental Evaluations

Compannage Fonseka
Edinburgh Napier University

12:15 - 12:35 Solar-Powered Energy Storage Mat

Jeeva Saju
Edinburgh Napier University

12:35 -12:55 Development of a Neural Network Model for Solar PV Power Output Prediction.

Emmanuel Ukura
Edinburgh Napier University

13:00 - 14:00

Lunch & Networking

Session 4: ONLINE

Session 4 Chair: Dr Libu Manjakkal; Edinburgh Napier University (ONLINE)

14:00 - 14:20 Waste Management of Silicon Solar Panels in 2050

OI CHIN
Edinburgh Napier University

14:20 -14:40 An Investigation of the Dynamic Behaviour of Offshore Wind Turbine Support Structures in Harsh Norwegian Marine Environment

Giancarlo Angelopoulos
University of Brighton

14:40 -15:00 Comparative Performance of Floating and Ground-Mounted Photovoltaic Plants: Technology Analysis and Feasibility

Kissilla Guedes
Universidade Estadual Paulista

15:00 - 15:20 Numerical Simulation of a Novel Serpentine Heat Exchanger for Photovoltaic Panels

Dr Edemar Morsch Filho
Universidade Estadual Paulista

15:20 - 15:40 Future-Proofing India's Energy: A Comprehensive Review and Strategy Optimisation for Agrovoltaic Systems

Abubakar Suleiman
Edinburgh Napier University

15:40 - 16:00 A novel topology integrating solar technologies with the 5th Generation District Heating and Cooling network at the load side

Shamsoddin Ghiami
Edinburgh Napier University

16:00 - 16:20 Leveraging GIS-Based Flood Risk Mapping to Strengthen Climate Resilience in Scotland's Critical Solar Energy Infrastructure

Kianda Kalloo
Edinburgh Napier University

16:20 - 16:30

Closing remarks



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