

Second Announcement



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**HIS EXCELENCY DR MOHAMED BIN MUBARAK
BIN DIANA**
Minister of Oil and Environment, SPECIAL ENVOY FOR
CLIMATE AFFAIRS



WREC/WREN

WORLD RENEWABLE ENERGY CONGRESS - WREC-23 MEETING CLIMATE CHANGE, RENEWABLES and ACHIEVING CARBON NEUTRALITY

10-14 November 2024
CROWNE PLAZA, MANAMA, KINGDOM OF BAHRAIN

Mission Statement

World Renewable Energy Network, (WREN) is honoured to work with the Kingdom of Bahrain to encourage the use of Renewable Energy globally and aiming to achieve NET ZERO carbon emission. Renewables are the cornerstone and foundation of a truly sustainable and safe energy future. More than 30% of world countries have achieved 50% of their electricity supply from renewables. Join us to increase this percentage to be 50% before 2030.

Congress Topics

- * Photovoltaic Technology
- * Solar Thermal & Geothermal
- * Sustainable Cities & Low Energy Architecture
- * Biomass & Waste to Energy
- * Policy, Finance, Education & Conservation
- * Meteorology and Solar Data
- * Wind & Hybrid Energy
- * Hydropower & Ocean Energy
- * Hydrogen Technology, Fuel cells & Transport
- * Renewable large Schemes & System

Integration

- * Carbone capture, Utilization and Storage (CCUS)
- * The use of Artificial Intelligence to optimize the use of renewables
- * Energy and Gender



ABSTRACT: Abstracts should not be more than one page, A4, 300-500 words only, single spacing, Ariel font-12. It should contain, title, author/s names, full addresses, email and 6-keywords. It should be sent as soon as possible. Please send your abstract to Prof Ali Sayigh, email: asayigh@wrenuk.co.uk, or Prof Nader Al-Bastaki, email: nalbastaki@ku.edu.bh. You will have an answer within one week. Full paper is required before 30 November 2024. Again, to be sent to Prof Ali Sayigh.

Full Paper: Single column, A4, including, Title, full address, and email, abstract, 6-keywords, graphs and photo should be within the text, conclusions, and references. Please number the references in the text in brackets (), and list them in sequence in the References. If you have an Appendix, then put it at the end of the paper.

Registration online. <https://WREC23.ku.edu.bh>

Please note that due to local administrative circumstances the Congress has been postponed to 10-14 November 2024.

Abstracts Titles from Invited Speakers and Participants received to date:

1- The role of the sustainable use of biomass, bioenergy and biorefining in a circular economy

Prof Anastasia Zabaniotou

Department of Chemical Engineering, Aristotle University of Thessaloniki, Thessaloniki, Greece



2- Photovoltaic Technology: Pathways Toward a 100% Solar Electricity Future

Prof Lawrence L. Kazmerski

Renewable and Sustainable Energy Institute, University of Colorado Boulder, Colorado, USA.



3- Recent Developments in Photovoltaics

Prof Martin A. Green

SPREE, University of New South Wales, Sydney, Australia



4- Application of Micro-Structured Sunlighting Systems in Different Buildings

Prof Helmut F.O. Mueller

Green Building R&D GmbH, Duesseldorf, Germany



5- Increasing the Gain of Bifacial Photovoltaics by Redirection of Solar Radiation

Prof Helmut F.O. Mueller

Green Building R&D GmbH, Duesseldorf, Germany

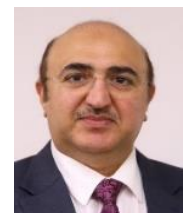
6- Estimating the Rooftop Potential Solar Power using Remote Sensing and GIS for Tala Island at the Kingdom of Bahrain

Naser W. Alnaser^{1*}, Roaya Bubshait², Aysha Alhajeri² and Waheeb E. Alnaser³

¹Department of Architecture and Interior Design, College of Engineering, University of Bahrain, Kingdom of Bahrain.

²National Space Science Agency, Kingdom of Bahrain.

³Department of Natural Resources and Environment, College of Graduate Studies, Arabian Gulf University, Kingdom of Bahrain.



7- Challenges Facing Renewable Energy Potential in The GCC Countries Due to Future Climate Change

Waheeb E. Alnaser^{1*}, Marlene Tomaszkiwicz², Hussein A. Kazem³ and Lawrence Kazmerski⁴

¹ Department of Natural Resources and Environment, College of Graduate Studies, Arabian Gulf University, Kingdom of Bahrain.

²United Nations Economic and Social Commission for Western Asia (UN-ESCWA), Beirut Governorate, Lebanon.

³ Sohar University, Electrical and Computer Engineering, Faculty of Engineering, Sohar, PCI 311, Oman

⁴National Renewable Energy Laboratory (NREL), Renewable and Sustainable Energy Institute (RASEI), University of Colorado, Boulder, Boulder, USA.

8- USE OF CLEAN ENERGY TECHNOLOGIES IN IMPROVING WALKABILITY, NEW HOUSING DEVELOPMENTS AND ORIENTED TOWARDS SUSTAINABLE FUTURE ENERGY SCENARIO

V.K. Sharma* and G. Braccio

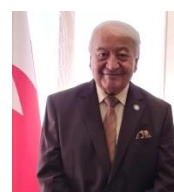
Biorefinery and Green Chemistry, ENEA Research Centre Trisaia, Italy



9- Green Buildings and Renewable Energy are the solutions in reducing, Carbon Footprints in UAE

Prof. Riadh H. AL-Dabbagh

International Environmental Expert, Ajman, UAE



10- Optimizing Grids Demand Reduction through Enhanced Heat Transfer in Low-Temperature Waste Heat Driven ORC System

Cheng Wang^{1*}, Zizeng Gao², Liwei Wang²

¹Shanghai Leadership Refrigeration Technology Company, Shanghai, China,

²Institute of Refrigeration and Cryogenics, Shanghai, China,

^{*}Institute of Refrigeration and Cryogenics, Shanghai, China, email



11- Offshore Wind Energy Improved Technology: A Potential Solution for Bahrain's Energy Security and Sustainability

Prof Abdul Salam K Darwish

University of Bolton, Bolton – UK



12- Investment in Renewable Energy & Environmental Sustainability: Analytical Study for Selected Models

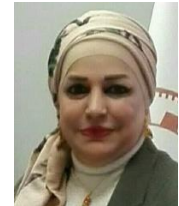
Naghham Hussein Neama^{1*}, Rasha H. Abbood^{2*}, Karrar Azeez AlDaham¹

(1): Dept. of Investment & Business Management, Al-Nahrain University, Baghdad, Iraq

(2): Ministry of Higher Education & Scientific Research, Baghdad, Iraq

(1): Dept. of Investment & Business Management, Al-Nahrain University, Baghdad, Iraq

Email: karar.azez15@gmail.com



13- Digital transition in higher education for the experience of DIGITAL DECATLON Competition to Cooperation partnerships in higher education

Antonella Trombadore*, Gisella Calcagno*, Giacomo Pierucci*, Matteo Bertelli*

*University of Florence Architectural Department, Florence, Italy



14- Modelling the Power Generation of Microbial Fuel Cell Using Machine Learning Based Super Learner Algorithms

S. M. Zakir Hossain^{*1}, Nahid Sultana², Shaker Haji¹, Shaikha Talal Mufeez¹, Sara Esam Janahi¹, Nouf Adel Ahmed¹

¹Dept. of Chemical Engineering, College of Engineering, University of Bahrain, Bahrain.

²Dept. of Computer Science, College of Computer Science and Information Technology, Imam Abdulrahman Bin Faisal University, Saudi Arabia.



15- Case study analysis of improving environmental ethics in Bahrain, using a collaboration toolkit from a UK University

Dr Jason Challender

Director of Estates and Facilities, Salford University, Manchester, UK



16- An examination of dust buildup and mitigation techniques for solar photovoltaic installations

Hussein A. Kazem^{1*}, Waheeb E. Alnaser², and Lawrence Kazmerski³

¹Sohar University, Faculty of Engineering, Sohar, Oman

²Department of Natural Resources and Environment, Arabian Gulf University, Bahrain.

³National Renewable Energy Laboratory (NREL), University of Colorado, Boulder, USA.



17- Policies for upgrading and rehabilitating slum areas, in order to achieve their sustainability – a case study: the city of Damascus.

Wael Al Muhanna, *Manuel Correia Guedes

*Prof. Manuel Correia Guedes, Coordinator of the Course of Architecture

Department of Civil Engineering and Architecture, Instituto Superior Técnico
Lisbon, Portugal



18- High Temperature Heat Pumps for Industrial Applications

Professor Neil J Hewitt

Ulster University, Belfast School of Architecture & The Built Environment, Centre for Sustainable Technologies, Belfast, Northern Ireland, UK



19- An experimental study on the impact of porous media in improving the heat-transfer performance characteristics of photovoltaic panels.

Amjad H. Hamzaw¹, and Qahtan A Abed²

¹Engineering technical college/ Najaf, Al - Furat Al- Awsat Technical University, Najaf, Iraq

²Technical Institute/ Al-Rumaitha, Al - Furat Al- Awsat Technical University, Iraq



20- A Global Renewable Energy Target

– Gamechanger for the Global Transformation towards Renewable Energy? –

Rainer Hinrichs-Rahlwes

Vice-President, European Renewable Energies Federation (EREF),
BELGIUM

Board Member, German Renewable Energy Federation (BEE),
Berline, GERMANY



21-RENEWABLE ENERGY APPLICATIONS IN AGRI- AND HORTICULTURE

Dr Márta Szabó

Hungarian University of Agriculture and Life Sciences,
Institute of Engineering,
Gödöllő, Hungary



22-The use of Artificial Intelligence to optimize the use of Renewable Energy

Prof Saad Znad Darwish

Kingdom University, Bahrain



23- Sources of error in the testing and evaluation of photovoltaic/thermal systems

Ali H A Al-Waeli^{1,†} Hussein A Kazem², Miqdam T. Chaichan³, Kamaruzzaman Sopian⁴

¹Engineering Department, American University of Iraq, Sulaimani, Iraq

²Energy and Renewable Energies Tech. Center, University of Technology, Baghdad, Iraq

³Faculty of Engineering, Sohar University, Oman

⁴Dept. of Mechanical Eng., Universiti Teknologi PETRONAS, Malaysia



24- Graphene and carbon nanotube hybrid structure (GNHS) is one of the promising graphene derivate: Geoexchanger System for Buildings Heating and Cooling

Abdeen Omer

Energy Research Institute (ERI)
Nottingham, United Kingdom

25- Identification, prioritization, and co-development of stakeholders for the transition towards Solar Energy Storage (SES) in Australia

Nikhil Jayaraj

School of Marketing and Management
Faculty of Business and Law
Curtin University

Perth, Western Australia.

26- RESEARCH OF MECHANICAL PROPERTIES FOR BIO COMPOSITES WITH DAMMAR MATRIX

Maria Alexandra IVAN^{1*}, Alexandru BOLCU², Ion CIUCĂ¹, Dumitru BOLCU²,
Marius Marinel STĂNESCU²
Bucharest, Romania

27- Nigeria's energy future: Why investors should look to hydrogen

I. H. Zarma^{1*}, E. J. Bala², A. S. Sambo³, G. O. Unachukwu⁴
^{1,2,.} Energy Commission of Nigeria, Abuja, ³Usmanu Danfodiyo University Sokoto
and University of Nigeria Nsukka, Nigeria, Nigeria



28- Photovoltaic Application in Buildings will be a reality globally by 2030.

Prof Ali Sayigh
Chairman of World Renewable Energy Congress
And Director General of WREN, Brighton, UK



29- Net-Zero Buildings in the Broader Context: Exploring New Boundaries and Opportunities

Derya Oktay¹, James Garrison²
¹Faculty of Architecture and Design, Maltepe University
Istanbul, TURKEY
²School of Architecture, Pratt Institute, Brooklyn, New York, USA



30- Resorption cycles for heat pumps and heat transformers

Prof R.E.Critoph, Dr. G.H. Atkinson, Dr. S.J.Metcalf, School of Engineering,
University of Warwick, UK.



31- Roadmap to Carbon Neutrality: Harnessing RDF from Municipal Solid for Renewable Energy Transition in Nigeria

Muazu Sani^{a*}, Mirzaii Hossein^a, Andy Augousti T^b, Benhadj-Djilali Redha^b,
a, * Renewable Energy Engineering, Kingston University, London, UK
b School of Engineering and the Environment, Kingston University, London, UK

32- From Tradition to Transformation : Green Roofs in the Era of Climate Resilience

Maryam Singery,
School of Architecture and Planning, University of Texas at San Antonio,
San Antonio, Texas, USA, and
Erik Murray,
AIA, WJE, San Antonio, Texas, USA



33- Micro-Scale Sustainability: Investigating Envelope Roofing Strategies; Case Studies in Texas

Erik Murray, AIA, WJE, San Antonio, Texas, USA
Maryam Singery, School of Architecture and Planning, University of
Texas at San Antonio, San Antonio, Texas, USA



34- PRODUCTION OF GREEN HYDROGEN IN MOROCCO FROM SOLAR AND WIND ENERGY: REALITY AND FEASIBILITY

Hassan NFAOUI^{*1} and, Ali SAYIGH²

1. Solar Energy & Environment lab., Sciences Faculty, Mohammed V University, Morocco,
2. Chairman of WREC & Director General-WREN, Brighton, UK.



35- Biomimetic methods used for BIPV-PCM/EG system thermal regulation enhancement

Ming Jun Huang^{*1}, Gerard Obasi¹, Neil J. Hewitt¹

¹ Belfast School of Architecture and the Built Environment, Ulster University, UK



36- Adsorption technology for cooling applications: A review of evaporator behaviour and performance challenges

Mr Ibrahim J.M. Mwasubila

College of Engineering and Tech., University of Dar es Salaam, Tanzania

