



**IEEES-13**  
13th International Exergy,  
Energy and Environment  
Symposium

رؤية  
VISION  
2030  
المملكة العربية السعودية  
KINGDOM OF SAUDI ARABIA



# CONFERENCE PROGRAM

**THE 13TH INTERNATIONAL  
EXERGY, ENERGY AND  
ENVIRONMENT SYMPOSIUM  
(IEEES-13)**

**14 - 17 MARCH 2022**

**UMM AL-QURA UNIVERSITY  
MAKKAH - SAUDI ARABIA**



# DAY 1

March 2022 ,14 | MONDAY

## OPENING SESSION

Time (GMT+3)

Presentation

03:30pm - 04:00pm

**Opening Ceremony**

Video about UQU

**UQU President**

Prof. Maadi Al Madhab

**Engineering Dean**

Dr. Mohammad Al-Sheikh

**IEEEES13 Chair**

Dr. Abdullah A. AlZahrani

## PLENARY SESSION - 1

Chair: Dr. Khaled H. Almotairi

Time (GMT+3)

Presentation

04:00pm - 04:45pm

The Evolving Tension between Energy and Attaining Sustainability: An Overview

**Prof. Feridun Hamdullahpur**

University of Waterloo, Canada

Former president and vice-chancellor (2010-2021),

04:45pm - 05:00pm

**Break**

Chair: Dr. Faisal A .Osra

05:00pm - 05:45pm

Why Integrated Energy Systems for Multigeneration?

**Prof. Ibrahim Dincer**

Ontario Tech University, Ontario, Canada

President, Hydrogen Technologies Association

Editor-in-Chief, International Journal of Energy Research

Editor-in-Chief, International Journal of Exergy

# END OF DAY 1



# DAY 2

March 2022 ,15 | TUESDAY

## PRESENTATIONS SESSION - 1

Session Chair: Dr. Dhia Suker - Session Co-Chair: Dr. Bandar Fadhl

Time (GMT+3)	Presentation
08:30am - 08:45am	<b>IEEES13 - P165</b> Exergoeconomic Analysis of an Ammonia Fuel Cell-Based Integrated System with Two Organic Rankine Cycles <u>Khaled Al-Hamed</u> and Ibrahim Dincer
08:45am - 09:00am	<b>IEEES13 - P132</b> Controlling the rejection of protein during membrane filtration by adding polyvinyl pyrrolidone (PVP) <u>Hizba Waheed</u> and Amir Mukhtar
09:00am - 09:15am	<b>IEEES13 - P57</b> Thermodynamic analysis of Maisotsenko cycle (M-cycle) under weather conditions of Jeddah <u>Saleh S. Baakeem</u> , Saleh A. Bawazeer and A. A. Mohamad
09:15am - 09:30am	<b>IEEES13 - P133</b> Optimization of Cefotaxime Loaded Nanoparticles for In-Vitro Drug Release Application <u>Sana Javaid</u> , Nasir Ahmad, Shafi Ur Rehman and Hizba Waheed
09:30am - 09:45am	<b>IEEES13 - P147</b> A Large-Scale Energetic, Economic and Environmental (3E) Comparisons of Solar Adsorption Cooling System (Silica-Gel/Water) and Conventional Vapor Compression Cycle <u>Abdullah Bawazir</u> and Daniel Friedrich
09:45am - 10:00am	<b>Break</b>

## PLENARY SESSION - 2

Chair: Prof. Mohammed Wasel Alhazmi

Time (GMT+3)	Presentation
10:00am - 10:45am	Self-Cleaning of Surfaces for Energy Harvesting Applications <b>Prof. Bekir Yilbas</b> Distinguished Professor at KFUPM, Saudi Arabia
10:45am - 11:00am	<b>Break</b>

## PRESENTATIONS SESSION - 2

Session Chair: Prof. Mohamad Hassan - Session Co-Chair: Dr. Kamel Guedri

Time (GMT+3)	Presentation
11:00am - 11:15am	<b>IEEES13 - P178</b> Investigation of the Effect of Diesel Fuel / N-Amyl Alcohol Blends on the Emissions of a Turbocharged Common Rail Engine <u>Mehmet Selman Gökmen</u> and Hasan Aydogan
11:15am - 11:30am	<b>IEEES13 - P101</b> Green Energy-Powered Multi-Edge Computing Networks; A Resource Allocation for Video Caching and Transcoding Approach <u>Emmanuel Osei-Mensah</u> , Taiwo Ajagunsegun, Saqr Khalil Saeed Thabet, <u>Olusola Bamisile</u> , Emelia Asiedu-Ayeh, Humphrey Adun

11:30am - 11:45am **IEEES13 - P136**  
Experimental Investigation of performance and emission characteristics of a gasoline engine fueled with HHO gas  
[Kirankumar K R](#) and [Saleel Ismail](#)

11:45am - 12:00pm **IEEES13 - P80**  
Waste Management during COVID-19  
[Sami Goren](#)

12:00pm - 12:15pm **IEEES13 - P66**  
Energy Analysis of an Integrated Plant based on Solid Oxide Fuel Cell, Metal Hydride System, Rankine Cycle and Absorption Refrigeration System  
[A.Sai Kaushik](#) and [Satya Sekhar Bhogilla](#)

12:15pm - 12:30pm **IEEES13 - P52**  
Three-dimensional thermal interaction model of ultrafast-laser train focused beams with human skin tissues  
[Kamel Guedri](#) and [Abdullah AlZahrani](#)

12:30pm - 12:45pm **IEEES13 - P78**  
NUCLEAR ENERGY: NECESSITY, SAFETY AND SECURITY  
[Faisal Osra](#) and [Abdul-Wali Ajlouni](#)

12:45pm - 01:00pm **IEEES13 - P90**  
Optimal Decentralized Controller for Four-Area Power System Using Q-Parameterization Technique Based on Multi-Verse Optimization Algorithm  
[Ashraf Abdelhamid](#), [Ahmed Diab](#) and [Ahmed Elgaafary](#)

01:00pm - 01:15pm **IEEES13 - P92**  
The effect of drying bagasse on its calorific value for bioenergy production  
[Mehmood Ali](#), [Mubashir Ali Siddiqui](#) and [Umme Sahar](#)

01:15pm - 01:30pm **IEEES13 - P171**  
Mathematical Modeling and Characterization of the PEM Fuel Cell  
[Ahmed Zouhir Kouache](#) and [Ahmed Djafour](#)

01:30pm - 01:45pm **IEEES13 - P102**  
A Detailed Comparative Parametric Study of Nanofluid's Performance in Solar Flate Plate and Parabolic Trough Collectors  
[Olusola Bamisile](#), [Michael Adedeji](#), [Humphrey Adun](#), [Qi Huang](#), [Mukhtar Mustapha](#), [Foyin Olubiyo](#) and [Mustafa Dagbasi](#)

01:45pm - 02:00pm **Break**

## PLENARY SESSION - 3

Chair: Dr. Raed Shalwala

 Time (GMT+3)

Presentation

02:00pm - 02:45pm Accelerating Energy and Low-Carbon Transitions  
**Prof. Benjamin K. Sovacool**  
Professor of Energy Policy at the University of Sussex, United Kingdom.

02:45pm - 03:00pm **Break**



# PRESENTATIONS SESSION - 3

Session Chair: Dr. Bandar Fadhl - Session Co-Chair: Dr. Saleh Abobakur Bawazeer

 Time (GMT+3)	Presentation
03:00pm - 03:15pm	<b>IEEES13 - P59</b> Speed control of induction motor for pump supplied by photovoltaic generator <u>Taleb Hamdi</u> , Hafedh Abid and Khaled Elleuch
03:15pm - 03:30pm	<b>IEEES13 - P135</b> A SURVEY ON SPACE CRAFT NUCLEAR REACTORS Sümer Şahin
03:30pm - 03:45pm	<b>IEEES13 - P21</b> Removal of Zinc ions Zn (II) from aqueous solution by biopolymer membranes <u>Yamina Zouambia</u> and Hamida Maachou
03:45pm - 04:00pm	<b>IEEES13 - P96</b> Enhanced Extraction of Lead and Cadmium from Low Permeable Marine Sediments: A Case Study on the use of Electrokinetic Decontamination Process <u>Muhammad Saleem</u> and Suleiman Al-Bifari
04:00pm - 04:15pm	<b>IEEES13 - P131</b> Micro photovoltaic concentrators: Promises and challenges <u>Salima El Ayane</u> and Ali Ahaitouf
04:15pm - 04:30pm	<b>IEEES13 - P97</b> Preparation and characterization of Activated carbon from Acacia latea tree branches by microwave induced phosphoric acid and low temperature phosphoric acid activation: A comparative study Muhammad Saleem
04:30pm - 04:45pm	<b>IEEES13 - P104</b> Facile Synthesis of High-yield Petroleum Coke Derived Activated Carbon for Supercapacitor Applications <u>Syed Shaheen Shah</u> , Md. Abdul Aziz and Zain Hassan Yamani
04:45pm - 05:00pm	<b>IEEES13 - P44</b> Analytical Studies for Thermo-Physical Properties of Nanofluids Based Water with Different Nanoparticles Concentrations <u>Muath Alsahil</u> , Muafaq Oreijah and Mohammed Hasan
05:00pm - 05:15pm	<b>IEEES13 - P35</b> Optimal Design for Minimization of Entropy Generation of Flows Through Treelike Networks Antonio F. Miguel
05:15pm - 05:30pm	<b>IEEES13 - P85</b> Synthesis of Environmental-Friendly Cellulose Hanan Makallawi
05:30pm - 05:45pm	<b>IEEES13 - P55</b> INFLUENCE OF POLYETHYLENE COVER DEGRADATION UNDER SEMI-ARID CLIMATIC FOR GREENHOUSE <u>Salah Bezari</u> , Mohamed Aissa, Asma Adda and Kaddour Abdel Majid
05:45pm - 06:00pm	<b>Break</b>



## PLENARY SESSION - 4

Chair: Dr. Faisal A .Osra

Time (GMT+3)	Presentation
06:00pm - 06:45pm	<b>Water for Food, Energy, Environment and Livelihoods—Can we have them all?</b> <b>Dr. Olcay Unver</b> Professor of Practice, Arizona State University, USA
06:45pm - 07:00pm	<b>Break</b>

## PRESENTATIONS SESSION - 4

Session Chair: Dr. Emad Makki - Session Co-Chair: Dr. Ahmed Backar

Time (GMT+3)	Presentation
07:00pm - 07:15pm	<b>IEEES13 - P20</b> Examination of the Effect of Different Window Types on Energy Use in Turkish Apartment Buildings <u>Ismail Caner, Okan Kon and Shady Attia</u>
07:15pm - 07:30pm	<b>IEEES13 - P2</b> Smart greenhouse prototype powered by solar energy: Case study of Madinah City, KSA <u>Mohamed Benghanem and Adel Mellit</u>
07:30pm - 07:45pm	<b>IEEES13 - P63</b> A comprehensive study of the effects of various operating parameters on the performance and emission indices of a biogas-diesel dual fuel engine <u>Feroskhan M and Saleel Ismail</u>
07:45pm - 08:00pm	<b>IEEES13 - P51</b> Adding Chilled Water Storage System for Load Enhancement of Chiller Plants in a Local Establishment <u>Muath Alsahil and Muhammed Radhwi</u>

# END OF DAY 2





# DAY 3

March 2022 ,16 | WEDNESDAY

## PRESENTATIONS SESSION - 5

Session Chair: Prof. Adel Abdeen - Session Co-Chair: Prof. Mohamad Hassan

Time (GMT+3)	Presentation
08:30am - 08:45am	<b>IEEES13 - P134</b> Critical temperature effect at the wet working fluids in the subcritical ORC performance <a href="#">Aram Ahmed</a> and <a href="#">Attila Imre</a>
08:45am - 09:00am	<b>IEEES13 - P168</b> A Comparative Analysis of Dual Fuel and Conventional Marine Diesel Engines <a href="#">Oguz Kagan Goculu</a> and <a href="#">Murat Emre Demir</a>
09:00am - 09:15am	<b>IEEES13 - P42</b> The challenge in damage claim in Brazilian energy sector - customers and service providers responsibilities <a href="#">Carlos Alberto Froes Lima</a> , <a href="#">Maria Isabel Campos</a> , <a href="#">Erico Izar Marson</a> , <a href="#">Stanley Alencar Santos</a> , <a href="#">Jamil Haddad</a> and <a href="#">Nelson Kagan</a>
09:15am - 09:30am	<b>IEEES13 - P3</b> Hybrid solar desalination system: Case study of Madinah City, KSA <a href="#">Mohamed Benghanem</a> and <a href="#">Adel Mellit</a>
09:30am - 09:45am	<b>IEEES13 - P166</b> Analysis and Feasibility of Employing a New and Novel Hybrid Solar Chimney Power Plant (HSCPP) - KSA Case Study <a href="#">Emad Abdelsalam</a> , <a href="#">Fadwa Kassem</a> , <a href="#">Shadwa Ibrahim</a> , <a href="#">Asma Alkhasawneh</a> and <a href="#">Fares Almomani</a>
09:45am - 10:00am	<b>Break</b>

## PLENARY SESSION - 5

Chair: Dr. Mohammed S .Alshaikh

Time (GMT+3)	Presentation
10:00am - 10:45am	<b>Towards Sustainable and Environment-Aware Wireless Networks</b> <b>Prof. Mohamed-Slim Alouini</b> Distinguished Professor of Electrical and Computer Engineering, KAUST, Saudi Arabia
10:45am - 11:00am	<b>Break</b>

## PRESENTATIONS SESSION - 6

Session Chair: Dr. Saleh Abobakur Bawazeer - Session Co-Chair: Dr. Emad Makki

Time (GMT+3)	Presentation
11:00am - 11:15am	<b>IEEES13 - P119</b> Tracking system in concentrator photovoltaic (CPV): Specific design and performances issues <a href="#">Imane Ourraoui</a> and <a href="#">Ali Ahaitouf</a>
11:15am - 11:30am	<b>IEEES13 - P170</b> A Brief Study on Cobalt-Chlorine Thermochemical Hydrogen Production Cycle <a href="#">Onur Oruç</a> and <a href="#">Ibrahim Dincer</a>

11:30am - 11:45am

**IEEES13 - P73**

A Decentralized Adaptive Power Sharing Control Algorithm for Multiterminal Direct Current (MTDC) System

Hasan Alrajhi, Mohammad Saad Alam, Essam A. Al-Ammar and Ahmed N. M. Alahmadi

11:45am - 12:00pm

**IEEES13 - P129**

Life Cycle Assessment of Various Energy Storage Systems for Renewable Energy Sources

Manal Alshafi and Yusuf Bicer

12:00pm - 12:15pm

**IEEES13 - P93**

Environmental Impact of Nuclear Energy Industry

Abdul-Wali Ajlouni, Tasahil Albishi and Naseem Assiri

12:15pm - 12:30pm

**IEEES13 - P9**

Comparison between ranking and rating weighting methodologies in GIS based

Mazari Ait Kaci, Tammam Khadadj, Amel Alioua Berrebbah, Housseyn Medjahed, Nawel Kouadria, Fatma Belhoucine and Nadia Bouredja

12:30pm - 12:45pm

**IEEES13 - P137**

Industrial Nuclear Hydrogen Production

Sümer Şahin and Hacı Mehmet Şahin

12:45pm - 01:00pm

**IEEES13 - P12**

Night Natural ventilation and energy saving in high thermal mass historical building in hot dry climate

Bencheikh Hamida and Chakali Meriem

01:00pm - 01:15pm

**IEEES13 - P126**

Minutes Time Interval Based Prediction of Solar Radiation Using Machine Learning Algorithms

Olusola Bamisile, Chukwuebuka Ejiyi, Ariyo Oluwasanmi, Sandra Obiora, Chiagoziem Ukwuoma and Qi Huang

01:15pm - 01:30pm

**IEEES13 - P89**

Evaluation Quality of Drinking Water from Coolers of AL- Sabeel water in public places in Medinah, Saudi Arabia

Mohammed Emad and Mohamed Benganem

01:30pm - 01:45pm

**IEEES13 - P113**

Role of Energy Policies in Development of Renewable Energy in Gulf Countries

Amjad Ali, Fahad A. Alsulaiman, Kashif Irshad, Md Hasan Zahir, Md Shafiullah and Muhammad Zeeshan Malik

01:45pm - 02:00pm

**Break**

## PLENARY SESSION - 6

Chair: Prof. Hamdy Youssef

 Time (GMT+3)

**Presentation**

02:00pm - 02:45pm

Smart Grid Applications and Their Future Implementation in Saudi Arabia

**Dr. Omar AbdulAziz Hafez**

Assistance Professor of Renewable Energy, Smart Grid, and Electric Vehicles – Umm Al- Qura University

02:45pm - 03:00pm

**Break**





# PRESENTATIONS SESSION - 7

Session Chair: Prof. Mohamad Hassan - Session Co-Chair: Dr. Kamel Guedri

 Time (GMT+3)	Presentation
03:00pm - 03:15pm	<b>IEEES13 - P60</b> On the Enhancement of the Aerodynamic Behavior of Savonius Turbine by Using Auxiliary Blades <u>Khaled Abdelaziz</u> , Mohamed Nawar, Ahmed Ramadan, Youssef Attai and Mohamed Mohamed
03:15pm - 03:30pm	<b>IEEES13 - P49</b> Numerical Investigation of the Morphological Characteristics of Nighttime Thermo-Electric Generators <u>Taqi Cheema</u> , Shahvaiz Khan and Malik Hassan
03:30pm - 03:45pm	<b>IEEES13 - P152</b> Thermodynamic Performance and Economic Analysis of a Gas Turbine Power Plant Coupled with Evaporative Cooling System <u>Sunday Oyedepo</u> , Joseph Dirisu, Emmanuel Umeh, Moromoke Adekanye, Shoaib Khanmohamadi and Anish Khan
03:45pm - 04:00pm	<b>IEEES13 - P122</b> Analysis Cyber-Attack Methods and Risk of Electric Vehicles in Smart Grids Dr. Cevat Özarpa and <u>Dr. İsa Avci</u>
04:00pm - 04:15pm	<b>IEEES13 - P4</b> Analysis and optimization of the CIGS / ZnS structure for photovoltaics Applications <u>Abdelkader Aissat</u> , Rachid Amraoui and Jean Pierre Vilmot
04:15pm - 04:30pm	<b>IEEES13 - P143</b> Gas Turbines Coupled with Mechanical Vapor Compression System under Ambient Conditions of Riyadh, Saudi Arabia Saleh S. Baakeem, Jamel Orfi, Hany Al-Ansary, and <u>A. A. Mohamad</u>
04:30pm - 04:45pm	<b>IEEES13 - P26</b> Treatment of Pharmaceutical Liquid Effluents by biosorption using a vegetable biomaterial <u>Maachou Hamida</u> , Benaissa Faiza and Tchikou Baya
04:45pm - 05:00pm	<b>IEEES13 - P54</b> Latent heat storage in a random porosity metal foam filled with a phase change material Mehdi Fteiti
05:00pm - 05:15pm	<b>IEEES13 - P163</b> Thermophysics analysis of recuperative heat exchanger based miniature J-T cooler applicable to IR devices <u>Mayank Singhal</u> , Rajesh Kumar, Ravinder Walia and Sanjay Pandey
05:15pm - 05:30pm	<b>IEEES13 - P28</b> Selective hydrogenation of 2-methyl-3-butyne 2-ol in microcapillary reactor for fine organic synthesis. Effect of support doping on stability and kinetic parameters <u>Lyudmila Okhlopkova</u> , Mikhail Kerzhentsev and Zinifer Ismagilov
05:30pm - 06:00pm	<b>Break</b>



## PLENARY SESSION - 7

Chair: Dr. Mowffaq Oreijah

Time (GMT+3)	Presentation
06:00pm - 06:45pm	<p>Coordinated Planning of Transportation and Electric Power Networks with the Proliferation of Electric Vehicles</p> <p><b>Prof. Mohammad Shahidehpour</b> Distinguished Professor, Illinois Institute of Technology, Chicago, USA</p>
06:45pm - 07:00pm	<b>Break</b>

## PRESENTATIONS SESSION - 8

Session Chair: Dr. Basim Makhdoum - Session Co-Chair: Dr. Dhia Suker

Time (GMT+3)	Presentation
07:00pm - 07:15pm	<p><b>IEEES13 - P110</b></p> <p>Performance Optimization of a Thermoelectric Air Conditioning System for Energy Efficient Building Application by Using Variable-Pulse Current Technique</p> <p><u>Kashif Irshad</u>, <u>Amjad Ali</u> and <u>Md. Hasan Zahir</u></p>
07:15pm - 07:30pm	<p><b>IEEES13 - P87</b></p> <p>Preparation of carbon nanotubes with deposited bimetallic oxide nanoparticles: the effect of a metal precursor and a support on the stability to thermal decomposition</p> <p><u>Lyudmila Okhlopkova</u>, <u>Lyudmila Khitsova</u> and <u>Zinfer Ismagilov</u></p>
07:30pm - 07:45pm	<p><b>IEEES13 - P181</b></p> <p>Design and evaluation of a new solar-biomass based energy system for a small community</p> <p><u>Khalid Altayib</u> and <u>Ibrahim Dincer</u></p>
07:45pm - 08:00pm	<p><b>IEEES13 - P103</b></p> <p>Effect of butanol addition in biogas-biodiesel fuelled engine for dual fuel, RCCI and HCCI modes</p> <p><u>Gobinath N</u> and <u>Feroskhan M</u></p>

# END OF DAY 3





# DAY 4

March 2022 ,17 | THURSDAY

## PRESENTATIONS SESSION - 9

Session Chair: Dr. Bander Fadh - Session Co-Chair: Dr. Dhia Suker

Time (GMT+3)	Presentation
08:30am - 08:45am	<b>IEEES13 - P167</b> Solar Chimney Power Plant Integrated with Water Desalination Plant - Qatar Case Study <a href="#">Emad Abdelsalam</a> , <a href="#">Fadwa Kassem</a> and <a href="#">Fares Almomani</a>
08:45am - 09:00am	<b>IEEES13 - P172</b> Blending Renewable Hydrogen with Black Sea Natural Gas: A Case Study <a href="#">Merve Ozturk</a> and <a href="#">Ibrahim Dincer</a>
09:00am - 09:15am	<b>IEEES13 - P118</b> Functionalised Oil Fly Ash-Derived Carbon Nanoparticles Produced via High-Energy Ball-Milling for Different Applications <a href="#">Saleh Alluqmani</a> , <a href="#">Mehrez Loulou</a> , <a href="#">Jalel Ouerfelli</a> , <a href="#">Ahmed Alshahrie</a> and <a href="#">Numan Salah</a>
09:15am - 09:30am	<b>IEEES13 - P64</b> Numerical Simulation and optimization of an Innovative Solar Adsorption Ice-Maker <a href="#">Mohammed Baharith</a> and <a href="#">Adel Abdel Dayem</a>
09:30am - 09:45am	<b>IEEES13 - P46</b> Analysis of a co-generation parabolic trough solar power plant using reheat Rankine power cycle <a href="#">Talal M. Alsufyani</a> and <a href="#">Abdullah Alzahrani</a>
09:45am - 10:00am	<b>Break</b>

## PLENARY SESSION - 8

Chair: Dr. Hamzah Alharthi

Time (GMT+3)	Presentation
10:00am - 10:45am	E-Waste Management Awareness, Opportunities and Actions <b>Prof. Emad Felmban</b> Professor in Computer Engineering Department of Umm Al-Qura University, Saudi Arabia
10:45am - 11:00am	<b>Break</b>

## PRESENTATIONS SESSION -10

Session Chair: Dr. Dhia Suker - Session Co-Chair: Prof. Adel Abdeen

Time (GMT+3)	Presentation
11:00am - 11:15am	<b>IEEES13 - P10</b> Modeling and Improvement of Nanostructures for Optoelectronic Components <a href="#">Abdelkader Aissat</a> , <a href="#">Lynda Chenini</a> and <a href="#">Jean Pierre Vilcot</a>
11:15am - 11:30am	<b>IEEES13 - P81</b> Cyber-attacks and Measures in SCADA Systems on Smart Natural Gas Grids <a href="#">Dr. İsa Avci</a> and <a href="#">Dr. Cevat Özarpa</a>

11:30am - 11:45am

**IEEES13 - P201**

Thermodynamic Performance of Parabolic Trough Collector using Supercritical CO<sub>2</sub> as Heat Transfer Fluid

[Ali Alaidaros](#) and [Abdullah A. AlZahrani](#)

11:45am - 12:00pm

**IEEES13 - P13**

Design of CSP-PV Hybrid Solar Plant for Low LCOE and Round the Clock Power Generation

[Satya Sekhar Bhogilla](#) and [Hakeem Niyas](#)

12:00pm - 12:15pm

**IEEES13 - P108**

Predictability of Wind Speed with Heights using Recurrent Neural Networks

[Mohamed Mohandes](#), [Shafiqur Rehman](#), [Hilal Nuha](#) and [Floris Schulze](#)

12:15pm - 12:30pm

**IEEES13 - P98**

Utilization of surplus power for Hydrogen production in case of the high share of renewable energy sources by EnergyPLAN model

[Aqsa Rana](#) and [Gyula Grof](#)

12:30pm - 01:00pm

**Break**

01:00pm - 01:15pm

**IEEES13 - P94**

Modeling and Analysis of a Geothermal-Wind Hybrid Multigeneration System: A 4-E, Steady-State, and Transient Performance Study

[Olusola Bamisile](#), [Dongsheng Cai](#), [Qi Huang](#), [Jian Li](#), [Nasser Yimen](#), [Xiaoguang Wang](#), [Ji Duo](#) and [Rui Cao](#)

01:15pm - 01:30pm

**IEEES13 - P105**

Advantages and disadvantages of techniques used for water desalination methods

[Mohamed Benghanem](#), [Mohammed Emad](#), [Bernd Abel](#) and [Yasser Riyadh](#)

01:30pm - 01:45pm

**IEEES13 - P95**

Aggregating Heterogeneous capacity of DERs through Virtual Power Plants (VPPs)

[Tabish Imtiaz](#), [Mohammad Saad Alam](#), [Hasan Al Rajhi](#), [Essam Al Ammar](#), [Samir Shariff](#) and [Prof. Salman Hameed](#)

01:45pm - 02:00pm

**IEEES13 - P173**

Assessment of Hydrogen and Natural Gas Blending for Use in Different Locations

[Fatih Sorgulu](#) and [Ibrahim Dincer](#)

02:00pm - 02:15pm

**IEEES13 - P182**

A comparative economic study of hydrogen production methods using Hydrogen Economy Evaluation Program (HEEP)

[Ahmed A. Alabaddi](#), [Omar A. Obaid](#), [Abdullah A. AlZahrani](#)

02:15pm - 02:30pm

**IEEES13 - P106**

Energy-efficiency Estimation using Data Envelopment Analysis: A Comparative Study of Saudi Arabia and some African Countries

[Ali Alarjani](#) and [Teg Alam](#)

02:30pm - 02:45pm

**IEEES13 - P41**

Evaporation of a binary liquid film flowing down a vertical plate covered with a thin porous layer

[Abdelaziz Nasr](#)

02:45pm - 03:00pm

**IEEES13 - P47**

Radiant Floor Heating Using Different Phase-Change Material Configurations: A Comparative Study

[Abdulrahman Alghamdi](#)

**03:00pm - 03:15pm** **IEEES13 - P169**  
The potential of recycling food waste, with an automatic composter and its use for sustainable agriculture  
Nurzat Totubaeva


**03:15pm - 03:30pm** **IEEES13 - P88**  
An Economic Preventive Maintenance Policy for a solar Photovoltaic System  
Lahcen Mifdal, Amir Baklouti, Sofiene Dellagi, Ilias Majdouline and Anis Chelbi

**03:30pm - 03:45pm** **IEEES13 - P79**  
Thermoeconomic and Thermo-Environmental Analyses and Optimization of Energy Systems - A Critical Review  
Sunday Oyedepo, Oluwaseun Kilanko, Phillips Olufemi Babalola, Joseph Dirisu, Mufutau A Waheed, David O Samuel and Fidelis I Abam

**03:45pm - 04:00pm** **Break**


## PLENARY SESSION - 9

Chair: Dr. Abdulmuin Abdullah

 Time (GMT+3)	Presentation
<b>04:00pm - 04:45pm</b>	Advances in Net-Zero Energy and a Status Report <b>Prof. SA Sherif</b> Professor of Mechanical and Aerospace Engineering, University of Florida, USA
<b>04:45pm - 05:00pm</b>	<b>Break</b>

## PRESENTATIONS SESSION -11

Session Chair: Dr. Yasser O. Assolami

 Time (GMT+3)	Presentation
<b>05:00pm - 05:15pm</b>	<b>IEEES13 - P180</b> Performance Analysis of A New Solar Based Integrated Mobile System For Caravan Applications Ali Erdogan Karaca and Ibrahim Dincer
<b>05:15pm - 05:30pm</b>	<b>IEEES13 - P38</b> Techno-Economic Feasibility Study of integrating Solar Heated Feed Water to a Conventional Steam Power Plant Yasir Hawsawi and Adel Abdeen
<b>05:30pm - 05:45pm</b>	<b>IEEES13 - P209</b> Computational Assessment of the Thermal Performance of 3D Printed Concrete Walls with Various Structures Abdullah A. AlZahrani, Abdalrahman A. Alghamdi, Ahmed A. Basalah
<b>05:45pm - 06:00pm</b>	<b>IEEES13 - P120</b> Analysis and Optimization of Unbalanced Distribution Systems Ahmad Eid

06:00pm - 06:15pm

**IEEES13 - P99**

Opportunities for Recycling of Heavy Oil Fly Ash (HOFA) Generated in Power Stations  
Eskander Howsawi, Saied Harb and [Ashraf Bakkar](#)

06:15pm - 06:30pm

**IEEES13 - P50**

Thermodynamic performance of a solar-driven poly-generation system for use in Saudi remote areas  
[Salim Mokraoui](#), Jamel Orfi and Emad Ali

06:30pm - 07:00pm

**Closing**

- Announcement of best papers.  
- Recommendations and closing remarks



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UMM AL-QURA UNIVERSITY



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