



## ORGANIZING COMMITTEE

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## ORGANIZING INSTITUTIONS

National University of Sciences and Technology (NUST)  
National Hydrogen Association (NHA)

## COOPERATING INSTITUTIONS

International Association for Hydrogen Energy (IAHE)  
Ontario Tech University

## UNDERGRADUATE STUDENT VOLUNTEERS

Ghulam Muhammad Palli (Team Lead)  
Saad Karim (Vice Lead)  
Taimur Shahzad Gill (Web Management Lead)  
Muhammad Umar (Web Management Member)  
Narmeen Sabah Siddiqui (Management Member)

Usamah bin Irsalan (Web Management)  
Syed Umer Majeed (Publication Lead)  
Niranjan Chawla (Management Lead)  
Talha Aamir (Publication member)

## GRADUATE VOLUNTEERS

Muhammad Sabbar Hassan



# Sunday-11 December 2022



CONFERENCE REGISTRATION	
10:00 - 18:00 (GMT+5)	SUNDAY - WEDNESDAY



# Monday-12 December 2022



10:00-10:30 GMT+5	<p align="center"><b>OPENING CEREMONY</b></p> <ul style="list-style-type: none"> <li>• Dr. Tahir Abdul Hussain Ratlamwala (<i>Conference Chair</i>)</li> <li>• Tauqeer Ahmed Khwaja (<i>Commandant PNEC-NUST</i>)</li> <li>• Prof. Ibrahim Dincer (<i>President NHA</i>)</li> <li>• Dr. Hamood Ur Rahman (<i>Director of Research and Development, NUST</i>)</li> </ul>
10:30-10:50 GMT+5	<b>BREAK</b>
10:50-11:30 GMT+5	<p align="center"><b>OVERVIEW TALK</b> Session Chair: Dr. Tahir Abdul Hussain Ratlamwala</p> <p align="center"><b>TOPIC: HYDROGEN 1.0: A REVOLUTIONARY START</b></p> <p align="center">By: Prof. Ibrahim Dincer</p>
11:30-13:00 GMT+5	<p align="center"><b>KEYNOTE SESSION 1</b> Session Chair: Dr. Tahir Abdul Hussain Ratlamwala</p> <ol style="list-style-type: none"> <li>1. TOPIC: PROGRESS AND CHALLENGES IN SOLID OXIDE ELECTROLYSIS FOR THE LOW CARBON ENERGY TRANSITION By: Prof. Nigel Brandon</li> <li>2. TOPIC: TRANSITION FROM FOSSIL TO RENEWABLE ENERGY AND THE ROLE OF HYDROGEN By: Prof. Andreas Züttel</li> </ol>
13:00-15:00 GMT+5	<b>LUNCH</b>
15:00-16:10 GMT+5	<p align="center"><b>INVITED SPEAKER SESSION 1</b> Session Chair: Dr. M. Asif</p> <ol style="list-style-type: none"> <li>1. TOPIC: DISTRIBUTED WASTE TO POWER GENERATION SYSTEM FOR HYDROGEN PRODUCTION By: Prof. Nadeem Ahmed Sheikh</li> <li>2. TOPIC: LOW-HANGING FRUITS OF THE HYDROGEN ECONOMY By: Mr. Taufiq Khan</li> </ol>
16:10-16:30 GMT+5	<b>BREAK</b>
16:30-18:00 GMT+5	<p align="center"><b>KEYNOTE SESSION 2</b> Session Chair: Dr. Asad Ali Zaidi</p> <ol style="list-style-type: none"> <li>1. TOPIC: ADVANCES IN SUSTAINABLE HYDROGEN PRODUCTION WITH OFFSHORE APPLICATIONS By: Prof. Greg F. Naterer</li> <li>2. TOPIC: HYDROGEN FUEL CELL FOR SUSTAINABLE AVIATION By: Prof. Xianguo Li</li> </ol>



<p>10:00-10:45 GMT+5</p>	<p align="center"><b>KEYNOTE TALK</b> Session Chair: <i>Dr. Salman Naqvi</i></p> <p align="center"><b>TOPIC: PHOTOCATALYTIC WATER SPLITTING TO PRODUCE SOLAR HYDROGEN ON A LARGE SCALE</b> By: <i>Prof. Kazunari Domen</i></p>		
<p>10:45-11:30 GMT+5</p>	<p align="center"><b>PARALLEL SESSION – 1</b></p>		
	<p align="center"><b>TRACK 1: RENEWABLE HYDROGEN</b> Session Chair: <i>Dr. Abbas Hussain</i></p>	<p align="center"><b>TRACK 2: FUEL CELL</b> Session Chair: <i>Dr. Adil Loya</i></p>	<p align="center"><b>TRACK 3: HYDROGEN PRODUCTION</b> Session Chair: <i>Dr. Mohsin Ali</i></p>
	<p><b>FROM VARIOUS BIO-SOURCES TO GREEN HYDROGEN PRODUCTION: A CRITICAL TECHNICAL COMPARISON AND DISCUSSION</b> <i>Letitia Petrescu, Stefan Cristian, Galusnyak, Calin-Cristian Cormos.</i></p> <p><b>SUSTAINABLE DEVELOPMENT IN GREEN ENERGIES, AND THE ENVIRONMENT</b> <i>Abdeen Omer</i></p> <p><b>A NUMERICAL STUDY ON THE DYNAMIC RESPONSE BEHAVIOR OF PROTON EXCHANGE MEMBRANE WATER ELECTROLYZERS UNDER RENEWABLE ENERGY FLUCTUATIONS</b> <i>Boshi Xu, Yang Yang, Jun Li, Xun Zhu, Liang Zhang, Qiang Liao.</i></p>	<p><b>A HYBRIDIZED SHIP-POWERING SYSTEM WITH FUEL CELLS USING HYDROGEN AND METHANE</b> <i>Shaimaa Seyam,, Ibrahim Dincer, Martin Agelin-Chaab</i></p> <p><b>DENSE METALLIC MEMBRANES FOR HIGH-DENSITY HYDROGEN PRODUCTION FROM DIFFERENT FEEDSTOCKS FOR PEM FUEL CELLS POWER GENERATION</b> <i>Edward Gobina, Habiba Shehu, Ifeyinwa Orakwe, Muktar Ramalan, Tamunotonye Williamwest, Woyintonye Igbagara, Idris Hashim, Priscilla Ogunlode, Ofasa Abunomah, Evans Ogoun, Florence Aisueni</i></p> <p><b>TRANSPORT-ENHANCED BIOINSPIRED METHANOL STEAM REFORMING MONOLITHIC CATALYST SUPPORT BASED ON TRIPLY PERIODIC MINIMAL SURFACES</b> <i>Jiaxuan Li, Yang Yang, Xun Zhu, Dingding Ye, Rong Chen, Qiang Liao.</i></p>	<p><b>ANALYSIS OF THE ENERGETIC, ECONOMIC, AND ENVIRONMENTAL PERFORMANCE OF HYDROGEN PRODUCTIONS</b> <i>Maurizio Fermeglia, Elena Barbera, Andrea Mio, Alberto Bertucco, Alessandro Massi Pavan.</i></p> <p><b>PERFORMANCE ASSESSMENT OF A HYBRID SULFUR-BROMINE CYCLE-BASED HYDROGEN GENERATION FOR RESIDENTIAL USE</b> <i>Fatih Sorgulu, Ibrahim Dincer.</i></p> <p><b>SOLAR PHOTOVOLTAIC SYSTEMS THERMAL EFFICIENCY IMPROVEMENT THROUGH LOW-GRADE HEAT EXTRACTION AND HYDROGEN PRODUCTION THROUGH METHANOL STEAM REFORMING</b> <i>Saeed Iqbal, Ali Javaid, Muhammad Sajid, Muhammad Jawad Khan, Yasar Ayaz, Adeel Waqas</i></p>
<p>11:30-11:50 GMT+5</p>	<p align="center"><b>BREAK</b></p>		
<p>11:50-13:00 GMT+5</p>	<p align="center"><b>INVITED SPEAKERS SESSION 2</b> Session Chair: <i>Dr. Muntazir Abbas</i></p> <p align="center">1. <b>TOPIC: GASIFICATION OF HIGH-ASH SEWAGE SLUDGE FOR HYDROGEN PRODUCTION: EXPERIMENTAL, SENSITIVITY, AND PREDICTIVE ANALYSIS</b> By: <i>Dr. Salman Raza Naqvi</i></p> <p align="center">2. <b>TOPIC: MEMBRANE TECHNOLOGIES IN DECARBONIZED HYDROGEN PRODUCTION</b> By: <i>Dr. Adolfo Iulianelli</i></p>		
<p>13:00-14:30 GMT+5</p>	<p align="center"><b>LUNCH</b></p>		

		<b>PARALLEL SESSION - 2</b>		
		<b>TRACK 4: MULTIGENERATION</b> <i>Session Chair: Dr. Shaheryar Atta Khan</i>	<b>TRACK 5: AI AND CONTROL IN HYDROGEN</b> <i>Session Chair: Dr. M. Abid</i>	<b>TRACK 6: HYDROGEN STORAGE</b> <i>Session Chair: Dr. Tayyab Zafar</i>
<b>14:30-16:00</b> <b>GMT+5</b>		<p><b>DEVELOPMENT OF A LINEAR FRESNEL-BASED MULTIGENERATIONAL SYSTEM WITH SOLID-OXIDE ELECTROLYSIS FOR HYDROGEN PRODUCTION</b></p> <p><i>Mert Temiz, Ibrahim Dincer.</i></p>	<p><b>AN ASSESSMENT OF HYDROGEN PRODUCTION BY HARVESTING WIND ENERGY IN A SUBURBAN ENVIRONMENT: A MACHINE LEARNING APPROACH</b></p> <p><i>Ali Javaid, Muhammad Sajid, Emad Uddin, Yasar Ayaz, Adeel Waqas.</i></p>	<p><b>RECONFIGURED METALLIC MEMBRANE TECHNOLOGY FOR MAINTAINING HYDROGEN CONCENTRATION BELOW 4% IN FUEL DEBRIS CANISTERS</b></p> <p><i>Edward Gobina, Habiba Shehu, Florence Aisueni, Tamunotonye Williamwest, Muktar Ramalan, Evans Ogoun, Priscilla Ogunlode, Woyintonye Igbagara, Idris Hashim, Ifeyinwa Orakwe, Ofasa Abunomah.</i></p>
		<p><b>AN INTEGRATED WASTE-TO-ENERGY MULTIGENERATION SYSTEM BASED ON PLASTIC WASTES PYROLYSIS</b></p> <p><i>Mohamed Ismail, Ibrahim Dincer.</i></p>	<p><b>THERMODYNAMIC ANALYSIS OF A GEOTHERMAL-BASED INTEGRATED MULTI-GENERATION SYSTEM AND PREDICTION OF OUTPUTS VIA BACK PROPAGATION NEURAL NETWORK USING MATLAB</b></p> <p><i>Abdul Shakoor, Assad Anis</i></p>	<p><b>A COMPARISON ANALYSIS OF THE PRODUCTION AND STORAGE OF LIQUIFIED SYNTHETIC NATURAL GAS AND HYDROGEN WITH BOIL-OFF GAS RECOVERY</b></p> <p><i>Mohammed Al-Breiki, Yusuf Bicer.</i></p>
		<p><b>DESIGN OF A NEW CEMENT PLANT MULTIGENERATIONAL SYSTEM WITH HYDROGEN PRODUCTION</b></p> <p><i>Andre Bolt, Dr. Ibrahim Dincer, Dr. Martin Agelin-Chaab.</i></p>	<p><b>ENERGY AND EXERGY ANALYSIS OF RENEWABLE SOURCE MULTIGENERATION SYSTEM</b></p> <p><i>M. Murtaza Magsi, Talha Aamir, Zubair Ul Haq, Khalid Saleem, Mudassir Rasool.</i></p>	<p><b>MXENE / NI POROUS COMPOSITES FOR HYDROGEN PRODUCTION AND ENERGY STORAGE APPLICATION</b></p> <p><i>Sergii Sergiienko, Daniela Lopes, Gabriel Constantinescu, Andrei Kovalevsky.</i></p>
		<p><b>THERMODYNAMIC ANALYSIS OF A PARABOLIC TROUGH SOLAR COLLECTOR (PTSC) BASED INTEGRATED MULTI-GENERATION SYSTEM.</b></p> <p><i>Ayyaz Ahmed Mirza, Sheharyar Waseem.</i></p>	<p><b>DESIGN AND ANALYSIS OF A MULTIGENERATION SYSTEM WITH CONCENTRATING PHOTOVOLTAIC THERMAL (CPV/T) AND PROTON EXCHANGE MEMBRANE FUEL CELL (PEMFC) WITH THE INCORPORATION OF PID CONTROLLER IN MATLAB/SIMULINK</b></p> <p><i>Saad Karim, Umer Majeed, Mohammed Sameer Bin Abrar, Ghulam Muhammad Palli.</i></p>	<p><b>MATERIAL RELIABILITY IN HYDROGEN STORAGE APPLICATIONS AND TRANSPORTATION- A REVIEW</b></p> <p><i>Farhan Ashraf, Muntazir Abbas, Sarhan Al Shammari.</i></p>
		<p><b>DEVELOPMENT AND EXERGO-ECONOMIC ANALYSIS OF AN INNOVATIVE SOLAR-AIDED INTEGRATED WASTE-TO-ENERGY PLANT FOR MULTIPLE OUTPUTS</b></p> <p><i>Muhammad Khan, Muhammad Abid, Mi Yan, Sadia Yousuf.</i></p>		<p><b>GAS TRANSPORT IN LOW-CONTENT PLATINUM-DISPERSED POROUS MEMBRANES</b></p> <p><i>Ifeyinwa Orakwe, Habiba Shehu, Edward Gobina.</i></p>
<b>16:00-16:15</b> <b>GMT+5</b>	<b>BREAK</b>			

		<b>PARALLEL SESSION - 3</b>		
		<b>TRACK 7: HYDROGEN POLICY</b> <i>Session Chair: Dr. Muhammad Sajid</i>	<b>TRACK 8: HYDROGEN PRODUCTION</b> <i>Session Chair: Dr Muhammad Nasir Bashir</i>	<b>TRACK 9: RENEWABLE HYDROGEN</b> <i>Session Chair: Dr. Aqueel Shah</i>
<b>16:15-17:00</b>  <b>GMT+5</b>	<p style="text-align: center;"><b>EFFECT OF CHANGE IN TARRIF AND TAX POLICIES ON PV SYSTEM FEASIBILITY FOR AN AVERAGE CONSUMER IN PAKISTAN</b></p> <p style="text-align: center;"><i>Abdul Kashif Janjua, Muhammad Shahzad Younis.</i></p> <p style="text-align: center;"><b>MEMBRANE TECHNOLOGY ENHANCING INTEGRATION OF HYDROGEN IN HARD-TO-ABATE SECTORS OF THE GLOBAL ECONOMY</b></p> <p style="text-align: center;"><i>Prof Edward Gobina, Habiba Shehu, Ifeyinwa Orakwe, Ayo Giwa, Adam Ben-Aron.</i></p> <p style="text-align: center;"><b>A PRACTICAL APPROACH TO DETERMINE THE OFF-GRID CONDITIONS FOR ENERGY STORAGE INTEGRATED SOLAR-DRIVEN POWER SYSTEMS</b></p> <p style="text-align: center;"><i>Dogan Erdemir and Ibrahim Dincer.</i></p>	<p style="text-align: center;"><b>PRODUCTION AND USE OF HYDROGEN IN A PHOSPHORIC ACID FUEL CELL EMPLOYED IN A COMMERCIAL DOMAIN, ANALYSED USING A MATLAB/SIMULINK ENVIRONMENT</b></p> <p style="text-align: center;"><i>Mohaimin Daud Channa, Muhammad Sohaib Umer, Muhammad Tehami Khan, Muhammad Haris.</i></p> <p style="text-align: center;"><b>INNOVATIVE RENEWABLE ENERGY-BASED TRIGENERATION SYSTEM FOR ELECTRICITY, LNG, AND HYDROGEN PRODUCTION</b></p> <p style="text-align: center;"><i>Muhammad Khan, Muhammad Abid, Mi Yan, Saadia Yousuf. A</i></p> <p style="text-align: center;"><b>INVESTIGATION OF H2 PRODUCTION FROM FLUE GAS METHANE REFORMING USING NANOPARTICLE MAGNESIUM OXIDE MODIFIED GAMMA ALUMINA MEMBRANE</b></p> <p style="text-align: center;"><i>Habiba Shehu, Edward Gobina, Ifeyinwa Orakwe.</i></p>	<p style="text-align: center;"><b>PERFORMANCE ENHANCEMENT OF A COMPACT SOLAR REFORMING MEMBRANE REACTOR ENHANCED WITH MULTI-HELICAL INSERTS</b></p> <p style="text-align: center;"><i>Xin-Yuan Tang, Yong-Jian Yang, Wei-Wei Yang, Ya-Ling He</i></p> <p style="text-align: center;"><b>RESPONSE SURFACE OPTIMIZATION AND TRANSIENT ANALYSIS OF A SOLAR METHANE REFORMING REACTOR WITH PASSIVE THERMAL MANAGEMENT</b></p> <p style="text-align: center;"><i>Yong-Jian Yang, Xin-Yuan Tang, Wei-Wei Yang, Ya-Ling He.</i></p> <p style="text-align: center;"><b>EVALUATION OF BIOELECTROCHEMICAL HYDROGEN PRODUCTION FROM VARIOUS FEEDSTOCK</b></p> <p style="text-align: center;"><i>Veera Gnaneswar Gude.</i></p>	
<b>17:00-18:00</b>  <b>GMT+5</b>	<p><b>KEYNOTE TALK</b> <i>Session Chair: Dr. Khurram Kamal</i></p> <p><b>TOPIC: TERNARY OXIDE SEMICONDUCTORS AND ALLOYS FOR SOLAR HYDROGEN GENERATION</b> <i>By: Prof. Krishnan Rajeshwar</i></p>			



		PARALLEL SESSION - 4		
		TRACK 10: FUEL CELL Session Chair: <i>Dr. M. Asif</i>	TRACK 11: HYDROGEN PRODUCTION Session Chair: <i>Dr. Antash Najib</i>	TRACK 12: MULTIGENERATION Session Chair: <i>Dr. Junaid Ahmed</i>
<b>10:00-11:30 GMT+5</b>	<b>HYDROGEN TRANSPORT FROM GAS TO LIQUID PHASE (WATER): COMPARISON OF PALLADIUM AND PLATINUM MEMBRANE CATALYST SYSTEMS IN THREE-PHASE REACTIONS</b>  <i>Ifeyinwa Orakwe, Habiba Shehu, Edward Gobina.</i>	<b>MULTI-OBJECTIVE OPTIMIZATION OF A GEOTHERMAL-BASED HYDROGEN PRODUCTION SYSTEM</b>  <i>Sheikh Muhammad Ali Haider.</i>	<b>OPERATING VAPOR ABSORPTION CYCLE FROM TWIN SPOOL BIODIESEL POWERED GAS TURBINE EXHAUST</b>  <i>Uzair Bhatti, Mustafa Maqsood, Hamza Aamir, Mohammad Fahad</i>	
	<b>THIN FILMS: PREPARATION, CHARACTERIZATION, AND APPLICATION AS ANODE MATERIALS FOR DIRECT METHANOL FUEL CELLS</b>  <i>Yeşim Aydın Dursun, Ramazan Solmaz</i>	<b>MODELLING AND SIMULATIONS OF PEMFC ALONG WITH THE COMBINATION AND UTILIZATION OF VARIOUS RENEWABLE ENERGY RESOURCES TO PRODUCE POWER TO RUN A GREEN CAMPUS ON MATLAB SIMULINK</b>  <i>Usama Khan, Hammad Mushtaq Malik, Muhammad Bilal Masood, Sajid Bilal, Rao M Danish.</i>	<b>ANALYSIS OF OCEAN THERMAL AND SOLAR ENERGY BASED MULTIGENERATION SYSTEM FOR SUSTAINABLE COMMUNITY: ENERGY AND EXERGY PERSPECTIVES</b>  <i>Faraz Neakakhtar, Muhammad Umar Khan, Sheharyar Waseem, Mahesh Kumar</i>	
	<b>THERMODYNAMIC ANALYSIS OF HIGH-TEMPERATURE PROTON EXCHANGE MEMBRANE FUEL CELL (HT-PEMFC) WITH CONSIDERATION OF EFFICIENT ENERGY RECOVERY SYSTEM</b>  <i>Muhammad Huzaifa Khan, Syed Ashir Ahmad, Salman Hashim Khan, Muhammad Shakaib.</i>	<b>DESIGN AND ANALYSIS OF A NOVEL BIOMASS-BASED MULTIGENERATION SYSTEM USING A MEMBRANE GAS SEPARATION-BASED BIOREACTOR FOR BIOHYDROGEN PRODUCTION</b>  <i>Saad Karim, Umer Majeed, Mohammed Sameer bin Abrar, Mohammed Osama.</i>	<b>SIMULINK MODEL MULTI-GENERATION SYSTEM BASED ON PHOSPHORIC ACID FUEL CELL STACK, STEAM TURBINE, AND WIND POWER GENERATION</b>  <i>Umer Fayhan, M Saad Ammar, Fazal E Ahad, M Umar Nawaz, Ahmer Ashfaq.</i>	
	<b>PEMFC WASTE HEAT INCORPORATED INTO THE REGENERATIVE RANKINE CYCLE</b>  <i>Bilal Noor, Muhammad Zafar, Sarmad Saleem, Zain Abid.</i>	<b>FEASIBILITY OF A RENEWABLE MULTI-POWER ENERGY SYSTEM INVOLVING THE USE OF FUEL CELLS IN A MULTI-PURPOSE FARM-HOUSE ENVIRONMENT VIA SIMULATION IN MATLAB/SIMULINK.</b>  <i>Ahmed Khan, Talhah Atiq, Talha Afzaal, Raja Abuhurraira</i>	<b>DESIGN AND THERMODYNAMIC ANALYSIS OF A MULTI-GENERATION SYSTEM PRODUCING HYDROGEN, ELECTRICITY, HEATING, AND COOLING.</b>  <i>Muhammad Osama, Talha Siyal</i>	
	<b>MODELING AN EFFICIENT SHIP SYSTEM</b>  <i>Hamza Malik.</i>	<b>ANALYSIS AND PERFORMANCE EVALUATION OF A HYDROGEN-PRODUCING RENEWABLE BASED MULTI-GENERATION SYSTEM</b>  <i>Yasir Qazi, Syed Muzzammil Ali, Gopal Parkash, Armaghan Shahzad</i>	<b>HYDROGEN PRODUCTION USING A MULTI-GENERATION SYSTEM WITH PID STABILISERS</b>  <i>Armaghan Shahzad, Muhammad Ahmed, Yasir Qazi, Syed Muzzammil Ali</i>	
	<b>11:30-11:45 GMT+5</b>	<b>BREAK</b>		

	<b>PARALLEL SESSION 5</b>		
	<b>Track 13: RENEWABLE HYDROGEN</b> Session Chair: <i>Dr. M. Bilal Khan</i>	<b>Track 14: FUEL CELL</b> Session Chair: <i>Dr. Kunwar Faraz</i>	<b>Track 15: HYDROGEN PRODUCTION</b> Session Chair: <i>Dr. Mohamad Ramadan</i>
<b>11:45-13:15</b>  <b>GMT+5</b>	<p style="text-align: center;"><b>HYDROGEN POTENTIAL FROM HYBRID SOLAR AND HYDRO-PIEZOELECTRIC ENERGY HARVESTING SYSTEM</b></p> <p style="text-align: center;"><i>Ali Javaid, Muhammad Sajid, Emad Uddin, Yasar Ayaz, Adeel Waqas.</i></p> <p style="text-align: center;"><b>WATER FOOTPRINT OF RENEWABLE HYDROGEN PRODUCTION TECHNOLOGIES</b></p> <p style="text-align: center;"><i>Muhammed Iberia Aydin, Ibrahim Dincer.</i></p> <p style="text-align: center;"><b>ULTRASONIC PRETREATMENT OF ALGAL BIOMASS FOR ENHANCED BIOGAS AND BIOHYDROGEN PRODUCTION VIA ANAEROBIC DIGESTION</b></p> <p style="text-align: center;"><i>Asad A. Zaidi, Sohaib Z. Khan, Hamad Almohamadi, Mohammad Rehan, Muhammad Abdul Qyyum.</i></p> <p style="text-align: center;"><b>OPTIMIZATION OF NAOH-UREA PRETREATMENT FOR BIOGAS ENHANCEMENT FROM KITCHEN WASTE ANAEROBIC DIGESTION</b></p> <p style="text-align: center;"><i>Asad A. Zaidi, Sohaib Z. Khan, Hamad Almohamadi, Mohammad Rehan, Muhammad Abdul Qyyum</i></p> <p style="text-align: center;"><b>ENERGY &amp; EXERGY ANALYSIS OF ELECTRICITY &amp; HYDROGEN GENERATION SYSTEM USING GEOTHERMAL SOURCED ORC WITH ZEOTROPIC MIXTURE FOR THE LOCAL DISTRICT IN PAKISTAN</b></p> <p style="text-align: center;"><i>Muhammad Furqan Siddiqui, Ayyaz Ahmed Mirza, Muhammad Ali.</i></p>	<p style="text-align: center;"><b>PHOSPHORIC ACID FUEL CELL-BASED CCHP SYSTEM FOR A SUSTAINABLE COMMERCIAL FARM AND CROP RESEARCH FACILITY</b></p> <p style="text-align: center;"><i>Aleena Amin Khuwaja, Muhammad Arsal, Muhammad Maaz, Zeeshan Khurshid.</i></p> <p style="text-align: center;"><b>Modeling and Simulation of Proton Exchange Membrane Fuel Cell (PEMFC) and utilizing its output in an Industry</b></p> <p style="text-align: center;"><i>Muhammad Umer, Muhammad Hassan Umar, Mohammad Khizar Saeed, Syed Maaz Ali.</i></p> <p style="text-align: center;"><b>CONCEPT DESIGN OF LOW-EMISSION FUEL CELL-BASED SHIP PROPULSION SYSTEM FOR THE MARITIME EXPORT INDUSTRY</b></p> <p style="text-align: center;"><i>Asif Raza, Muntazir Abbas, Syed Sajjad Haider Zaidi, Asif Khan</i></p> <p style="text-align: center;"><b>HOTEL POWER SUPPLY USING MOLTEN CARBONATE FUEL CELL</b></p> <p style="text-align: center;"><i>Muhammad Saad, Muhammad Ehsan, Muhammad Hanzala Ahmed, Armaghan.</i></p> <p style="text-align: center;"><b>THE REVOLUTIONIZING MATERIAL - BUCKY PAPER IN HYDROGEN FUEL CELL</b></p> <p style="text-align: center;"><i>Tanzila Younas and Nasreen Bano</i></p>	<p style="text-align: center;"><b>NUMERICAL INVESTIGATION OF SUGARCANE BAGASSE AS POTENTIAL FEEDSTOCK IN PAKISTAN FOR BIOHYDROGEN PRODUCTION THROUGH GASIFICATION</b></p> <p style="text-align: center;"><i>Abeer Fawad, Muhammad Abdul Qyyum , Absaar Ul Jabbar.</i></p> <p style="text-align: center;"><b>PRODUCTION AND PERFORMANCE ANALYSIS OF HYDROGEN AS A FUEL BY ARTIFICIAL PHOTOSYNTHESIS WITH SOLAR ENERGY</b></p> <p style="text-align: center;"><i>Muhammad Ihsan Shahid, Muhammad Fahad Sheikh.</i></p> <p style="text-align: center;"><b>ANALYSIS AND PERFORMANCE ASSESSMENT OF A HYDROGEN-PRODUCING MULTI-GENERATION SYSTEM INTEGRATED WITH A REHEAT BRAYTON CYCLE</b></p> <p style="text-align: center;"><i>Syed Muzzammil Ali, Gopal Parkash, Armaghan Shahzad, Yasir Qazi.</i></p> <p style="text-align: center;"><b>POTENTIAL OF A LIQUID AIR ENERGY STORAGE AND MULTIGENERATION SYSTEM BASED ON ADVANCED EXERGY ANALYSIS</b></p> <p style="text-align: center;"><i>Michael Adedeji, Muhammad Abid and Mustafa Dagbasi Improvement</i></p> <p style="text-align: center;"><b>GEOTHERMAL-SOLAR INTEGRATED MULTIGENERATION SYSTEM WITH HYDROGEN PRODUCTION CAPABILITIES: COMPARATIVE STUDY ON HEAT TRANSFER WORKING FLUIDS</b></p> <p style="text-align: center;"><i>Syed Sulman Ahmad, Sheharyar Waseem, Yawar Salman, Syed Zahid Ahmad, Syed Ali Raza.</i></p>
<b>13:15-14:00</b>  <b>GMT+5</b>	<b>LUNCH</b>		

<b>PARALLEL SESSION 6</b>			
<b>14:00-15:30</b>  <b>GMT+5</b>	<b>Track 16: FUEL CELL</b> Session Chair: <i>Dr. Imran Amin</i>	<b>Track 17: MULTIGENERATION</b> Session Chair: <i>Dr. Faraz Junejo</i>	<b>Track 18: HYDROGEN PRODUCTION</b> Session Chair: <i>Dr. M. Abid</i>
		<p style="text-align: center;"><b>USING A SOFC SYSTEM WITH COGENERATION TO POWER A COMMERCIAL-SCALE POULTRY FARM</b></p> <p style="text-align: center;"><i>Muhammad Farooq, Syed Abbas Raza Zaidi, Abdul Ahad Hussain, Jaishree Rajput.</i></p> <p style="text-align: center;"><b>HYDROGEN FUEL CELL</b></p> <p style="text-align: center;"><i>Tanzila Younas, Nasreen Bano and Taimoor Innayat</i></p> <p style="text-align: center;"><b>THE USE OF COMPOSITE MATERIALS IN CONTRAST TO ALUMINIUM ALLOYS IN HYDROGEN FUEL AIRCRAFT</b></p> <p style="text-align: center;"><i>Nasreen Bano and Tanzila Younas</i></p> <p style="text-align: center;"><b>AN APPROACH TO SOLVE FARMER-HERDER'S CLASH THROUGH ENERGY, WATER, FOOD NEXUS FOR SUSTAINABLE DEVELOPMENT IN RURAL COMMUNITIES IN NORTHERN NIGERIA USING A SOFC INTEGRATED POLYGENERATION ENERGY SYSTEM.</b></p> <p style="text-align: center;"><i>Victor Adebayo, Muhammad Abid, Mustafa Dagbasi, Saadia Yousuf</i></p>	<p style="text-align: center;"><b>THERMODYNAMIC ASSESSMENT OF A NOVEL GEOTHERMAL AND SOLAR INTEGRATED MULTIGENERATION SYSTEM WITH HYDROGEN GENERATION</b></p> <p style="text-align: center;"><i>Muhammad Mubashar Ashraf, Syed Sulman Ahmad, Sheharyar Waseem, Syed Ali Raza, Yawar Salman.</i></p> <p style="text-align: center;"><b>BRAYTON CYCLE POWERED BY RENEWABLE SOURCE</b></p> <p style="text-align: center;"><i>Ghulam Muhammad Palli, Umair Khaid, Bilal Sarfaraz.</i></p> <p style="text-align: center;"><b>THERMAL, EXERGY, AND ECONOMIC ANALYSIS OF THE FUEL CELL BASED MULTIGENERATION SYSTEM INTEGRATED WITH ISO-BUTANE POWER CYCLE</b></p> <p style="text-align: center;"><i>Eliezer Zahid Gill, Sheharyar Waseem, Yawar Salman</i></p> <p style="text-align: center;"><b>PERFORMANCE ANALYSIS OF A SOLAR-ASSISTED OPTIMIZED COMBINED HEAT POWER PLANT UTILIZING A HEAT RECOVERY STEAM GENERATOR (HRSG) FOR HYDROGEN PRODUCTION AND MULTIPLE OUTPUTS</b></p> <p style="text-align: center;"><i>Yawar Salman, Sheharyar Waseem, Syed Sulman Ahmad.</i></p>
<b>15:30-16:00</b>  <b>GMT+5</b>	<b>CLOSING CEREMONY</b>		