



**1<sup>st</sup> International Conference on Water, Energy & Climate Change  
WECC 2021**

**Virtual Venue: University of Sharjah, UAE  
25<sup>th</sup> – 28<sup>th</sup> of October 2021**

**Day-1 25<sup>th</sup> October 2021**

**Opening Ceremony Program  
Sharjah International Virtual Conference for Water, Energy and  
Climate Change**

**Zoom meeting ID: 99385729892**

**Monday 25 October 2021**

**09:30 am**

<b>09:30 – 10:45</b>	<b>National Anthem</b>
	<b>Holy Quran Recitation</b>
	<b>Film</b>
	<b>Opening Address by His Excellency Prof. Hamid M.K. Al Naimiy, Chancellor of the University of Sharjah - Chair of the Conference Higher Committee</b>
	<b>Address by Prof. Maamar Bettayeb, Vice Chancellor for Research and Graduate Studies - Chair of the Conference Scientific Committee</b>
	<b>Address by Prof. Abdul Ghani Olabi, Director of the Sustainable Energy and Power Systems Research Center at (RISE) University of Sharjah - Chair of the Conference Organizing Committee</b>

	<p style="text-align: center;"><b>Address by Prof. Hussam Jouhara, Chair of Thermal Engineering and the Founder and Head of the Heat Pipe and Thermal Management Research Group at Brunel University London, UK</b></p>	
	<p style="text-align: center;"><b>Address by Prof. Damià Barceló, Director. Catalan Institute for Water Research (ICRA), Spain</b></p>	
	<p style="text-align: center;"><b>Address Mr. Khamis Abdallah Al Mazroueiby , Operation Manager, SNOC</b></p>	
<b>10:45-11:00</b>	<b>Break</b>	
11:00 – 11:30	<p style="text-align: center;"><b>Keynote</b> By Prof. Abdul Wahab Mohammad <i>“Renewable energy developments”</i></p>	<p style="text-align: center;">Deputy Vice Chancellor (Research and Innovation) Universiti Kebangsaan Malaysia</p>
11:30 – 12:00	<p style="text-align: center;"><b>Keynote</b> by Prof. Vincenzo Naddeo <i>“The next generation of wastewater treatment within the Water-Energy Nexus approach”</i></p>	<p style="text-align: center;">Director of the Sanitary Environmental Engineering Division (SEED) University of Salerno, Italy</p>
12:00 – 12:30	<p style="text-align: center;"><b>Keynote</b> by Prof. Muataz Ali <i>“Water reuse and resource recovery”</i></p>	<p style="text-align: center;">Professor and Chemical and Water Desalination Engineering Program Coordinator University of Sharjah</p>
12:30 - 13:30	<b>Lunch Break</b>	
<p style="text-align: center;"><b>Session A1 “Solar Energy”</b> Chairperson: Prof. M.A. Abdelkareem and Prof. Muataz Ali</p>		
13:30 – 13:45	Baha Marwan Anwer Alshwaiki	Investigating the Effect of Ultrasonic Waves on Desalinated Water Production of Enhanced Solar Still
13:45 – 14:00	Mohamad Ramadan	A Technical and Economical Comparative Assessment of Different Solar Trackers: A Review.
14:00 -14:15	Omar Ghannam	Investigating a Set of Performance Enhancements of Conventional Solar Still
14:15 -14:30	Emad Abdelsalam	A Creative Design of Solar Chimney Power Plant for Power Production at UAE

14:30 – 14:45	Monadhil Al-Chaderchi	Life Cycle Analysis for PV Solar Panel with Shading Effect Minimization Diode
14:45 – 15:00	Navid Khordehghah	Analytical Investigation of A Stand-Alone Solar System for Energy Demand of A Commercial Building
15:00 – 15:15	Ahmed Fathy	Mitigating partial shading influence on Total-Cross-Tied PV Array using Triple X Puzzle
15:15 – 15:30	Dalia Yousri	Minimum Hydrogen Consumption-Based Control Strategy of Fuel Cell/PV/Battery/Supercapacitor Hybrid System Based on African Vultures Optimization Algorithm
<b>15:30-15:45</b>	<b>Break</b>	
<b>Session A “Water Treatment”</b> Chairperson: Dr Chaouki Ghenai and Dr Tareq Salameh		
15:45 – 16:00	Hussein M Elmehdi	Assessing health risks associated with radon concentration in underground water using mathematical models and field measurements in the City of Sharjah
16:00 – 16:15	Nahid Md Pervez	An investigation of the effectiveness of wastewater filtration by electrospun nanofibre membranes
16:15 – 16:30	Alaa AbuShawish	Hexavalent Chromium Adsorption from Synthetic and Greywater by Nitrogen-Doped Activated Carbon: Kinetics, Isotherm, Desorption, and Thermodynamics
16:30 – 16:45	Yehia Manawia	Novel High Performance Ceramic Membrane for Wastewater Treatment: Phosphate and Oil Removal
16:45 – 17:00	Hegazy Rezk	Optimal Design and Economic Study of a Hybrid Renewable Energy System to Desalinate Seawater

<b>Day-2 Opening Session 26<sup>th</sup> October 2021</b>		
Chairperson: Prof. Abdul Ghani Olabi (UoS)		
10:00-10:30	<b>Keynote</b> by <i>Prof. Hussam Jouhara</i> “Advances in waste heat recovery systems in the ceramics industry”	<i>Brunel University London</i> Head of the Heat Pipe and Thermal Management Research Group, Editor-in-Chief of Elsevier International Journal of Thermofluids
10:30 – 11:00	<b>Keynote</b> by <i>Prof. Damia Barcelo</i> “Broad Spectrum of Treatment Technologies: Membrane, AOP, and Eco-friendly Solutions (Fungal, CAS, and Microalgae ) for Efficient Removal of Contaminants of Emerging Concern, ARG, Microplastics , and SARS-CoV-2 in Urban Wastewaters and Landfill Leachates”	Director of Catalan Institute for Water Research Editor in Chief of: -The Science of the Total Environment -Current Opinion in Environmental Science and Health -Case Studies of Chemical and Environmental Engineering
11:00 – 11:30	<b>Keynote</b> by <i>Prof. Evina Katsou</i> “Circular Economy & Sustainability in the Water Sector: from Data to Smart Water Systems”	<i>Professor of Water Treatment and Management Brunel University London</i>
<b>11:30-11:45</b>	<b>Break</b>	
<b>Session A2 “Environmental Research”</b> Chairperson: Prof. Abdul Hai Alami and Prof. Mohamad Ramadan		
11:45 – 12:00	Ahsan Shah	The Use of Biochar and Herbal Treatment for Drinking Water Purification
12:00 – 12:15	Eduardo Erazo Acosta	The power of the ancestral philosophy of Alli kawsay (Buen Vivir) in the indigenous movements of Colombia - Ecuador vs. the exclusion by the big mining development, contribution to the Rights of

		Mother Nature from the global south.
12:15 – 12:30	Lubna Jaber	Cyclic Voltammetric Technique as A Powerful Tool to Predict The Selectivity of Clay Ceramic Membranes Towards Toxic Heavy Metal Ions
12:30 – 12:45	Lubna Jaber	Hexavalent Chromium Removal from Synthetic and Grey Water Using Iron Nanoparticles Impregnated Activated Carbon (Fe-GAC): An Adsorption Kinetics, Isotherm, And Thermodynamics Study
12:45 – 13:00	Abdelrahman K A Khalil	Removal of Lead from Aqueous Solutions by Iron Impregnated Granulated Activated Carbon: Equilibrium, Kinetics and Thermodynamics
13:00 – 13:30	<b>Lunch Break</b>	
<b>Session B2 “Energy Recovery &amp; Energy Efficiency”</b> Chairperson: Dr Abrar Inayat and Dr Mohamad Tawalbeh		
13:30 – 13:45	V. Guichet	Influence of The Heat Transfer Rate on The Thermal Performances of A Multi-Channel Flat Heat Pipe
13:45 – 14:00	Luca Montorsi	Iways: Innovative Water Recovery Solutions Through Recycling of Heat, Materials And Water in Three Sectors: Ceramic Tile Manufacturing, Chemicals Products And Stainless-Steel Tubes
14:00 – 14:15	F. Ferrara	Use of pyrolysis for carbon capture and sequestration of wooden biomass: analysis of energy requirements and efficiency compared to state-of-the-art CCS technologies
14:15 – 14:30	Elmar Bartlmae	How a collaborative innovation project on heat recovery benefits from a

		comprehensive outreach strategy
14:30 – 14:45	Hegazy Rezk	Enhancement energy conversion efficiency of thermoelectric generation through an active cooling system—an experimental investigation
14:45 – 15:00	Robertas Poškas	Flue gas water vapor condensation heat transfer in a long vertical tube: the effect of the cooling water flow rate
15:00 -15:15	Fouad Al-Mansour	Heat pipe heat exchanger system for the utilization of excess heat in the steel industry
15:15 -15:30	<b>Break</b>	
<b>Session C2 “Energy Modelling &amp; Simulation”</b> Chairperson: Prof. Ramesh Bansal and Prof. Mohamad Ramadan		
15:30 – 15:45	Qusay Doraghi	Computational Analysis of Variable Thermoelectric Generator Geometry
15:45 – 16:00	Ahmed Fathy	Optimal Energy Management of Micro-Grid Using Sparrow Search Algorithm
16:00 – 16:15	Sidali Ferahtia	Techno-economic Multilevel Energy Management Strategy Renewable-based DC Microgrid for a Commercial Building
16:15 -16:30	Amani Altmimi	Weibull distribution modified using Fast Fourier Transform
16:30 – 16:45	Karim Bourouni	A Comparative Analysis for Multiattribute Selection Among Desalination by Renewable Energy Alternatives Using Fuzzy Analytic Hierarchy Process
16:45 – 17:00	Ahmed Fathy	Sparrow Search Optimizer for Maximizing the Power from Wind Energy Conversion System Installed in Aljouf Region

<b>Day-3 Opening Session</b> <b>27<sup>th</sup> October 2021</b>		
Chairperson: Prof. Hussam Jouhara		
Session of invited speakers from UoS		
10:00 - 10:15	Chaouki Ghenai	Emerging and Innovative Energy Technologies to Foster Energy Transition
10:15 – 10:30	Abrar Inayat	Introduction and Expansion of Biomass and Bioenergy in UAE
10:30 – 10:45	Abdul Hai Al-Alami	Development on Compressed Air Storage Systems
10:45 – 11:00	Ibrahim Ibrahim Ali El Sharkawy	Solar-Powered Adsorption Cooling: Fundamentals and Applications
11:00 – 11:15	Mohamad Ali Abdelkareem	Research developments on Fuel Cell Technologies
11:15 – 11:30	Ramesh Bansal	Smart Grid Developments
11:30 - 11:45	Tareq Salameh	Solar Energy Developments in UAE
11:45 – 12:00	Muhammad Zubair	NE3S research Group Activities at UOS
12:00 – 12:15	<b>Break</b>	
<b>Session B3 “Renewable Energy”</b> Chairperson: Prof. Ibrahim I. El-Sharkawy and Prof. M.A. Abdelkareem		
12:15 – 12:30	Mohamad Ramadan	A Survey of Different PV Systems Faults and Their Ways of Detection
12:30 – 12:45	Ahmed Fathy	A New Implementation of the MPPT Based Raspberry Pi Embedded Board for Shaded PV Array
12:45 – 13:00	Sidali Ferahtia	Optimal Adaptive Droop Control Strategy for Multiple Storage Systems
13:00 - 13:15	Hegazy Rezk	Performance Analysis of Thermoelectric Generation System: Experimental and Theoretical Investigations
13:15 – 13:30	Malek Alkasrawi	Exploring Renewable Energy Potential in Jordan with a Case Study
13:30 – 14:00	<b>Lunch Break</b>	
<b>Session C3 “Hybrid Systems”</b>		

Chairperson: Dr Bashria Yousef and Dr Muhamad Zubair		
14:00 – 14:15	Pragati A. Shindea	Surface Modified Core-shell Structured Electrodes for High-Energy Solid-State Hybrid
14:15 – 14:30	Malek Alkasrawi	A Hybrid H-VAC and Cooling Tower Design: A Smart Approach for Electricity and Cool Air Generation
14:30 – 14:45	Emad Abdelsalam	Hybrid Solar Chimney Power Plant: A Smart Operation Approach for Electricity and Distilled Water Generation
14:45 – 15:00	Ines Bouaziz	Hybrid Technologies Development for Brine Management
15:00 – 15:15	Abdullah Salah	Outstanding Nature Saving Strategies
15:15 – 15:30	Emad Abdelsalam	Hybrid Solar Chimney Power Plant for Power Production and Seawater Desalination: UAE Case Study
15:30 – 15:45	<b>Break</b>	
<b>Session D3 "BioEnergy"</b>		
Chairperson: Dr Chaouki Ghenai and Dr Abrar Inayat		
15:45 -16:00	Aasim Ahmed Abdelghafar	Photocatalytic Degradation Using Biochar/Tungsten Trioxide Composite
16:00 - 16:15	Lisandra Meneses	Recent advances on biodiesel production from waste cooking oil: a review of parametric studies and optimization techniques
16:15 – 16:30	Vincenzo Senatore	An Integrated Algal Membrane Photobioreactor as Green-Transition Technology for Carbon Capture and Utilization
16:30 – 16:45	Boucerredj Saida	The Principle of Common but Differentiated Responsibility in Global Climate Change Regime
16:45 -17:00	Mark Hill	A Review of Fouling Mitigation



<b>Day-4 28<sup>th</sup> October 2021</b>		
<b>Session A4 "Water Treatment"</b>		
Chairperson: Prof. Muataz Ali and Prof. Abdul Ghani Olabi		
10:00 – 10:15	Ammar Alkhalidi	Smart Irrigation Management
10:15 – 10:30	Khaled Elsaïd	MXene Applications in Emerging Desalination Processes: Potential and Challenges
10:30 – 10:45	Simos Malamis	Decentralized water management and resource recovery: Experiences learnt from HYDROUSA project
10:45 – 11:00	Olga Kochkodan	Bisphenol removal in water by micellar enhanced ultrafiltration
11:00 – 11:15	Khaled Elsaïd	Metal-Organic Frameworks MOF Applications in Emerging Desalination Processes: Potential and Challenges
11:15 – 11:30	Karim Bourouni	A Comparative Analysis for Multiattribute Selection Among Water Desalination by Renewable Energy Alternatives
11:30 – 11:45	<b>Break</b>	
<b>Session C4 "Renewable Energy &amp; Energy Storage"</b>		
Chairperson: Prof. Mohamad Ramadan and Prof. Abdul Hai Alami		
11:45 – 12:00	Sidali Ferahtia	Robust Parameter Identification Strategy of Lithium-Ion Batteries Model Employing Recent Metaheuristic Algorithm
12:00 - 12:45	Amani Al-Othman	Zirconium-Metal Organic Frameworks Based Membranes for High Temperature Pemfcs Applications
12:45 - 13:00	Najrul Hussain	Two-dimensional composite material as electrocatalyst for electrochemical CO2 reduction

13:00 – 13:15	Mohammad Yusuf	Syngas Production Via Dry Reforming of Methane Over Ni/SBA-15 Catalyst: Effect of Ni Loading
13:15 -13:30	Mohammad Ali Abdelkareem	A One Step Binder Free Zn-MOF as Bioanode for Yeast-Based Air Cathode MFC
13:30 -13:45	Muhammad Tawalbeh	Selection Criteria of Cooling Technologies for Sustainable Greenhouses: A Comprehensive Review
13:45 – 14:00	Mohammed Al-Murisi	Metal Organic Frameworks (MOFs) based Co/NS-CC as an electrocatalyst for Oxygen Reduction Reaction
14:00 - 14:15	Egilegor Bakartxo	ETEKINA: Heat Pipe Technology For Thermal Energy Recovery In Industrial Applications
<b>Closing Session</b>		
<b>14:15 - 14:30</b>	<b>Final Remarks By Conference Chair and Keynote Speakers</b>	