

# ESSD2023 Program



## The First International Conference on Engineering Solutions Toward Sustainable Development

**Think Sustainable ... Act Responsible**

Under the Auspices of



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MINISTRY OF HIGHER EDUCATION  
AND SCIENTIFIC RESEARCH



Portsaid University

Organized by



Faculty of Engineering

Day 1

2 May 2023

9:30 AM – 10:30 AM

REGISTRATION

10:30 AM - 11:30 AM

## OPENING SESSION (Hall A)

### Introduction

**Prof. Rehab F. Abdel-Kader/ Executive Chair**

*Vice-Dean of Graduate Studies & Research*

**Prof. Taha E. Farrag/ Conference Chair**

*Dean of the Faculty of Engineering*

**Prof. Rawya Y. Rizk/ Conference Chair**

*Vice-President of Graduate Studies & Research*

**H.E. Prof. Hesham Arafat Mahdi**

*Vice Chairman of the Board of Trustees of Future University, Chairman of the Board of Directors of MID Bank & Former Minister of Transportation*

**H.E. Prof. Ashraf Al-Shehhi**

*President of the Egyptian Chinese University and Former Minister of Higher Education & Scientific Research*

**H.E. Dr. Hussein I. El-Atfy**

	<i>Secretary-General of the Arab Water Council and Former Minister of Water Resources and Irrigation</i>
	<b>Prof. Ayman M. I. Mohamed/ Conference President</b> <i>President of Port Said University</i>
	Major General <b>Adel Mohamed El Ghabban</b> <i>Governor of Port Said</i>
<b>11:30 AM - 12:00 PM</b>	<b>KEYNOTE SPEAKER SESSION (Hall A)</b>
	Moderators: <b>Prof. Ayman M. I. Mohamed &amp; Prof. Hesham Arafat Mahdi</b>
	<b>Prof. Ashraf Al-Shehhi</b>
	Title: <b>“Risk Management in Higher Education Institutions”</b>

<b>12:00 PM – 12:30 PM</b>	<b>EXHIBITION OPENING/ COFFEE BREAK</b>
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<b>12:30 PM - 1:45 PM</b>	<b>KEYNOTE SPEAKERS SESSION (Hall A)</b>
	<b>Building the Future of Egypt: Structural Design and Infrastructure Projects</b>
	Moderators: <b>Prof. Ashraf Al-Shehhi &amp; Prof. Selda Oterkus</b>
	<b>Prof. Hesham Arafat Mahdi</b>
	Title: <b>“Feasibility of Promoting Transport Infrastructure in Egypt”</b>
	<b>Prof. Tarek Hassan</b> <i>Principal at the Structural Engineering Department, Dar Al Handasah Consultants, and Professor of Concrete Structures at Ain Shams University</i>

	Title: “Structural Design Considerations for the Iconic Tower in Egypt”
1:45 PM - 3:00 PM	<b>KEYNOTE SPEAKERS SESSION (Hall A)</b>
	<b>Sustainable Management of Energy and Water Systems</b>
	Moderators: <i>Prof. Nabil A. S. Elminshawy &amp; Prof. Abdelazim Negm</i>
	<i>Dr. Hussein I. El-Atfy</i>
	Title: “Enhancing Water Demand Management Towards Achieving Sustainable Development in the Arab Region”
	<i>Prof. Erkan Oterkus</i>
	<i>Professor in the Department of Naval Architecture, Ocean, and Marine Engineering, University of Strathclyde</i>
	Title: “Sustainable Development of Energy and Water Systems”
3:00 PM – 3:30 PM	COFFEE BREAK
3:30 PM - 4:15 PM	<b>WORKSHOP (HALL A)</b>
	<b>Faculty of Engineering Research Contributions for Sustainable Development: Strategies and Initiatives</b>
	Moderators: <i>Prof. Islam Amin &amp; Dr. Kamal El-Nahhas</i>
	<i>Prof. Nabil A. S. Elminshawy</i>
	Title: “Potential of Partially Floating Photovoltaic Technology in Egypt”
	<i>Prof. Rehab F. Abdel-Kader &amp; Dr. Mohamed Abdel-Kader</i>

	Title: “Towards Sustainable Pavement: Utilizing AI for Efficient Pavement Distress Detection”
	<i>Prof. Mohamed Bassyouni</i> Title: “Advanced Research and Testing for Water Treatment Using Membrane Technologies”

4:15 PM - 5:00 PM	KEYNOTE SPEAKERS SESSION (Hall A)
	Moderators: <i>Prof. Rawya Y. Rizk &amp; Prof. Mohamed Abdel-Azim</i>
	<i>Prof. Aboul Ella Hassanien</i> <i>Founder and Chair of the Scientific Research Group in Egypt (SRGE) and Professor at the Faculty of Computer and AI, Cairo University.</i>
	Title: “Digital Twinning and Artificial Intelligence: Recent Trends and Applications ”
5:00 PM - 5:30 PM	KEY SPEAKERS AND SPONSORS HONORARY CEREMONY

DINNER

END OF DAY 1

Day 2

3 May 2023

9:30 AM – 10:00 AM

REGISTRATION

10:00 AM - 12:00 PM	<b>CLEAN WATER AND SANITATION (Hall A)</b> Session Chair: <i>Dr. Mohamed Elsakka</i>	<b>INDUSTRY, INNOVATION &amp; INFRASTRUCTURE (Hall B)</b> Session Chair: <i>Dr. Eman Elshrief</i>
	Moderators: <i>Prof. Abdelazim Negm &amp; Prof. Taha Farrag</i>	Moderators: <i>Prof. Ahmed El-Hattab &amp; Prof. Islam Amin</i>
	<b>“Low-Cost Filter Media for Removal of Hazardous Pollutants from Industry Wastewater Effluents”</b> <i>Nehal M. Ashour</i>	<b>“A Comparative Study of Three Winding Configurations for Six-Phase Induction Motors”</b> <i>Basant A. Kalas, Ahmed Refaat, Mahmoud Fawzi, Ayman Samy Abdel-Khalik</i>
	<b>“A Review on Wastewater Treatment Using Biodegradable Polymers for Dyes Removal”</b> <i>Rana Gamal, Mohamed Bassyouni, Medhat M. H. ElZahar, Mamdouh Y. Saleh</i>	<b>“Survey and Evaluation of Applied Modern Engineering Pedagogy”</b> <i>Omer Alkelany, Hatem Khater, Mohamed Kamal, Hosam E. Mostafa</i>
	<b>“Textile Wastewater Treatment Using a Modified Coal Fly Ash as a Low-Cost Adsorbent”</b>	<b>“Examining the Behaviour of Lubricating Oil Film Within Marine Journal Bearing Under Emergency and Critical Operational Conditions”</b>

	<p><i>Ahmed Magdy Eteba, Mohamed Ismail Bassyouni, Amr Mansi, Mamdouh Youssif Saleh</i></p>	<p><i>Nour A. Marey, El-Sayed H. Hegazy, Amman A. Ali</i></p>
	<p><b>“Removal of Methylene Blue from an Aqueous Solution Using a Surfactant-Modified Activated Carbon”</b></p> <p><i>Farid I. El-Dossoki, Osama K. Hamza, Esam A. Gomaa</i></p>	<p><b>“Enhanced Performance of Propane Refrigerant at LNG Plant During Hot Climate Conditions - Case Study”</b></p> <p><i>Usama Eldemerdash, Belal Magdy Abdel Aziz, Naser Safa, Taha E. Farrag</i></p>
	<p><b>“A Critical Review of Biodegradable Polymeric Reverse Osmosis Membranes”</b></p> <p><i>Kareem Fouad, Yasser Elhenawy, Medhat A. El-Hadek, M. Bassyouni</i></p>	<p><b>“Ship Design for Green Ship Recycling - A New Approach”</b></p> <p><i>Bahgat M. Walid, El-Sayed Hegazy, Heba S. El-Kilani, Amman Ali, Mostafa M. Mostafa</i></p>
	<p><b>“Artificial Intelligence for Predicting the Performance of Adsorption Processes in Wastewater Treatment: A Critical Review”</b></p> <p><i>Mohammad Mansour, M. Bassyouni, Rehab F. Abdel-Kader, Y. Elhenawy, Lobna A. Said, Shereen M. S. Abdel-Hamid</i></p>	<p><b>“Analysis of the Time Multiplexed Sampling and a Proposed Prototype for Effective Heterogenous Data Acquisition Systems”</b></p> <p><i>Omer Alkelany</i></p>
	<p><b>“Saline Water Desalination Using Direct Contact Membrane Distillation: A Theoretical and Experimental Investigation”</b></p> <p><i>Yasser Elhenawy, Kareem Fouad, Thokozani Majosi, Shereen M. S. Abdel-Hamid, Mohamed Bassyouni</i></p>	<p><b>“Condition Monitoring as a Pathway for Sustainable Operation: A Case Study for Vibration Analysis on Centrifugal Pumps”</b></p> <p><i>Mahmoud Mostafa, Mohamad Elsakka, Mohamed S. Soliman, Mohamed El-Ghandour</i></p>

	<p><b>“Tanneries Wastewater Treatment by Coagulation and Reverse Osmosis”</b>  <i>A. Essam, M. Bassyouni, Mamdouh A. Gadalla, Fatma H. Ashour</i></p>	<p><b>“Preliminary Evaluation of Experiential Learning in Engineering Pedagogy for Undergraduate Students Learning Logic Design Concepts”</b>  <i>Omer Alkelany, Hatem Khater, Mohamed Kamal, Hosam E. Mostafa</i></p>
	<p><b>“Utilization of Fly Ash in Wastewater Treatment: A Review”</b>  <i>Medhat M. H. ElZahar, Mohamed Bassyouni, Mayada M. Gomaa, Mohamed Z. El-Shekhiby, Mamdouh Y. Saleh</i></p>	<p><b>“Mode-I Crack Problem in Generalized Thermo-Microstretch with Harmonic Wave Under Three Theories by Using a Laser Pulse with Non-Gaussian Form Temporal Profile”</b>  <i>Wafaa Hassan, Khaled Lotfy</i></p>
	<p><b>“A Critical Review of Bilgewater Treatment”</b>  <i>Maggie Gad, A.E Mansi, Noran Ashraf, Y. Elhenawy, M. Bassyouni</i></p>	<p><b>“Materials Selection and Performance of Fiber-Reinforced Plastic Poles”</b>  <i>M. Bassyouni, Yasser Elhenawy, Yuliya Kulikova, Olga Babich, Medhat A. El-Hadek</i></p>
	<p><b>“Assessing the Performance and Fouling of Polytetrafluorethylene Hydrophobic Membrane for the Treatment of Oil-Polluted Seawater Using AGMD”</b>  <i>A.E. Mansi, Y. Elhenawy, Maggie Gad, Noran Ashraf, Ahmed Eteba, M. Bassyouni</i></p>	<p><b>“Maximization of Condensate Production in Gas-Oil Separation Plant in Gulf of Suez: Case Study”</b>  <i>Mamdouh A. Gadalla, Ahmed A. Elsheemy, Hany A. Elazab, Thokozani Majosi, Fatma H. Ashour</i></p>
	<p><b>“Treatment of Printing Ink Wastewater Using Natural and Synthetic Coagulants”</b>  <i>Menna Eid, S. M. El-Marsafy, M. Bassyouni</i></p>	<p><b>(Poster): “The Hysteresis in the Stoner-Wohlfarth Model of Ferromagnetism”</b>  <i>Wafaa Hassan</i></p>



	<p><b>“Modified Activated Carbon for Adsorptive Removal of Para-Nitrophenol from Industrial Wastewater (IWW)”</b></p> <p><i>Usama N. Eldemerdash, Taha E. Farrag, Sherine A. Abdelkader</i></p>	
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<b>12:00 PM – 12:30 PM</b>	<b>COFFEE BREAK</b>
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<b>12:30 PM - 3:00 PM</b>	<p><b>CLEAN ENERGY</b> (Hall A)</p> <p>Session Chair: <b>Dr. Asmaa Rady Ahmed</b></p>	<p><b>SMART CITIES AND COMMUNITIES</b> (Hall B)</p> <p>Session Chair: <b>Dr. Basma Nashaat</b></p>
	<p>Moderators: <b>Prof. Erkan Oterkus &amp; Prof. Nabil A. S. Elminshawy</b></p>	<p>Moderators: <b>Prof. Naglaa Megahed &amp; Prof. Heba M. Abd El Atty</b></p>
	<p><b>“An Efficient MPP Tracker Based on Flower Pollination Algorithm to Capture Maximum Power from Proton Exchange Membrane Fuel Cell”</b></p> <p><i>Ahmed Elbaz, Ahmed Refaat, Nikolay Korovkin, Abd-Elwahab Khalifa, Ahmed Elsayed Kalas, Mohamad Elsakka, Hussien M. Hassan, Medhat Elfar</i></p>	<p><b>“Sustainable Development: A Review of Concepts, Domains, Technologies, and Trends in Smart Cities”</b></p> <p><i>Mohamed Elnahla, Hossam Wefki</i></p>
	<p><b>“Experimental Investigation of Two Bio-Inspired MPPT Algorithms for Partially Shaded PV Arrays”</b></p> <p><i>Abd-Elwahab Khalifa, Medhat Elfar, Qays Adnan Ali, Ahmed Elbaz, Ahmed Elsayed</i></p>	<p><b>“Sustainability of Lap Splice in Externally near Surface Mounted Bars of Reinforced Concrete Beam”</b></p> <p><i>Khaled F. Khalil, Mohamed A. Farouk, Azza I. Anan</i></p>

	<i>Kalas, Mohamad Elsakka, Nikolay Korovkin, Ahmed Refaat</i>	
	<p><b>“Numerical and Experimental Investigation on Integrated Solar Chimney for Seawater Desalination System in Egypt”</b></p> <p>Mohamad Elsakka, Islam Amin, Erkan Oterkus, Selda Oterkus, Moustafa Aboelfadl, Mohamed Elsayed <i>Abdelfattah</i>, Omar Nimr, Amr A. Sayed Alahl, Dalia Abouzaid, Hossam Shawky</p>	<p><b>“The Behavior of the Aluminum Bridges”</b></p> <p><i>Ola. Elsaid, Azza I. Anan, Mohamed M. Badawy</i></p>
	<p><b>“In-Situ Fabrication of Poly (M-Phenylene Isophthalamide)/ Fluorographene Nanocomposites and Their Properties”</b></p> <p><i>Lina M. Elbayar, Mahmoud Abdelaty, Shaban Nosier, Abbas Anwar Ezzat, Fathy Ahmed Shokry</i></p>	<p><b>“Risk Categorization for Various Project Delivery Methods in Construction Sector”</b></p> <p><i>Ibrahim Mahdi, Ahmed Mohamed Abdelkhalig, Hassan Mohamed Hassan, Ehab Rashad Tolba, Lamiisse Raed</i></p>
	<p><b>“A Comprehensive Review of Biomass Pyrolysis to Produce Alternative Biofuel”</b></p> <p><i>Yasser Elhenawy, Kareem Fouad, Mohamed Bassyouni, Mamdouh Gadalla, Fatma H. Ashour, Thokozani Majozi</i></p>	<p><b>“Seizure Detection Using Fast Walsh-Hadamard Transform (FWHT)”</b></p> <p><i>Saly Abd Elateif El Gindy, Ayman Ahmed, Saad Elsayed</i></p>
	<b>“A Modified Model Predictive Speed Control Based on Sensorless Hybrid MPPT Algorithm in Wind Turbine Systems”</b>	<b>“Improving Smart Infrastructure Monitoring Systems as a Response to Prevalent Pandemic”</b>

	<i>Mai N. Abuhashish, Ahmed A. Daoud, Ahmed Refaat, Medhat Elfar</i>	<i>Nourhan Osama, Ahmed Magdy, Bassem El Hady, Khaled Abd EL Salam</i>
	<b>“A Review of Ventilation Systems for Efficient Energy Use”</b> <i>Asmaa Ahmed, Mohamad Elsakka, Ayman Mohamed</i>	<b>“Parametric Form-Finding in Architecture: Dimensions Classification and Processes Guidelines”</b> <i>Lina A. Ramadan, Ashraf El Mokadem, Nancy Badawy</i>
	<b>(Poster): Abstract: “Recent Progress in Vertical Axis Wind Turbine Research: Modelling and Optimizations”</b> <i>Mohamad Elsakka, Yasser Elhenawy, Ahmed Refaat, Gamal H. Moustafa, Jee Loong Hee, Lin Ma</i>	<b>“Performance Analysis of Emerging Multi-Carrier Waveforms for 6G Wireless Communications”</b> <i>Walid Raslan, Heba Abdel-Atty</i>
	<b>(Poster): “Performance Analysis of a Green Hydrogen Production System in Several Coastal Locations in Egypt”</b> <i>Mohamad Elsakka, Ahmed Refaat, Asmaa Ahmed, Ahmed E Amer, Ahmed Elsheikh, Medhat Elfar, Yasser Elhenawy, Nidiana Rosado Hau, Thokozani Majozi, Islam Amin, Selda Oterkus, Erkan Oterkus, Ayman Mohamed</i>	<b>“Post-Pandemic Active Learning (PPAL): A Framework for Active Architectural Education”</b> <i>Asmaa M Hassan, Basma N. El-Mowafy</i>
	<b>CLIMATE ACTION</b> <b>(Hall A)</b> <b>Session Chair: Dr. Rabab F. Abdel-Kader</b>	<b>“Efficient Deep Deblurring Technique Using Dark and Bright Channel.”</b> <i>Nouran Ali, Asmaa Abdallah, I. F. Elnahry, Randa Atta</i>

	<p><b>Moderators: Prof. Selda Oterkus &amp; Dr. Heba Y. Soliman</b></p>	<p><b>“Investigating the Performance of Indoor Daylighting, and Thermal Performance in Residential Buildings Using Productive Façades”</b></p> <p><i>Basma Nashaat El-Mowafy</i></p>
	<p><b>“Field Measurements Used to Validate Envi-MET and Conduct Sensitivity Analysis, in Egypt.”</b></p> <p><i>Esraa Ebrahiem Salim, Naser Fawzy Ramadan, Mohamed Saad Mohamed Saad</i></p>	<p><b>“Real-Time Facial Emotion Recognition Using Haar-Cascade Classifier and MobileNet in Smart Cities”</b></p> <p><i>Shereen El-Shekheby</i></p>
	<p><b>“Assessing Climate Change of Western Delta by Regional Climate Models”</b></p> <p><i>Sherien Zahran, Randa Farag, Mohamed M. F. Sobeih, Esam Helal</i></p>	<p><b>“Enhanced COVID-19 Classification Using Ensemble Meta-Algorithms on Chest X-Ray Images”</b></p> <p><i>Lamiaa Menshawy, Ahmad H. Eid, Rehab F. Abdel-Kader</i></p>
	<p><b>“Maximizing Energy Efficiency in Petroleum Refining: Case Study - Delayed Coker Unit in an Egyptian Refinery”</b></p> <p><i>Mohamed Shahin, Hany A. Elazab, Mamdouh Gadalla, Thokozani Majazi, Fatma Ashour</i></p>	<p><b>“Building Strategy of City Branding as a Tool to Achieve Sustainable Development (Case Study: Branding of Port-Said City)”</b></p> <p><i>Shaimaa R. Nosier, Nancy M. Badawy</i></p>
	<p><b>“A Systematic Methodology for Retrofit Analysis of Refineries Preheat Trains with Variable Heat Capacity and Exchangers Fouling”</b></p>	<p><b>(Poster): “The Role of Perforated Building Envelopes in Sustainable Design”</b></p> <p><i>Marwa Gamal Ahmed Fawaz, Naglaa Ali, Dalia Elgheznawy, Basma Nashaat Ali</i></p>

	<i>Haya Kaled, Hany A. Elazab, Mamdouh Gadalla, Thokozani Majazi, Osama Abd El-Baari, Fatma Ashour</i>	
	<p><b>“Parametric Urbanism in Optimising Outdoor Thermal Comfort of Urban Spaces”</b></p> <p><i>Nancy Badawy, Maram Waleed Rezk, Ashraf El Mokadem, Heba Adel Ahmed Hussein</i></p>	<p><b>(Poster): “Utilizing Deep Reinforcement Learning for Resource Scheduling in Virtualized Clouds.”</b></p> <p><i>Mona Nashaat, Heba Nashaat</i></p>
	<p><b>“Optimal Design of Container Ships Geometry Based on Artificial Intelligence Techniques to Reduce Greenhouse Gases Emissions”</b></p> <p><i>Hussien M. Hassan, Mohamed M. Elsakka, Ahmed Refaat, Ahmed E. Amer, Rawya Y. Rizk</i></p>	<p><b>(Poster): “Questions Concerning the Role of the Skycourt as a Passive Strategy to Enhance Energy Efficiency.”</b></p> <p><i>Rasha A Ali, Naglaa A Megahed, Asmaa M Hassan, Merhan M Shahda</i></p>
	<p><b>“Exploring the Regulatory Framework of Maritime Decarbonization to Achieve IMO GHG Emission Targets”</b></p> <p><i>Nourhan I. Ghoneim, Arife Tugsan Colak, A. M. Amer</i></p>	
	<p><b>"Contrasting the Water Consumption Estimation Method: Case of USA and South Africa"</b></p> <p><i>Etienne Alain Feukeu, Lucas W Snyman</i></p>	

	<p><b>(Poster): “An Overview of LCA Integration Methods at the Early Design Stage Towards National Application”</b></p> <p><i>Sally R. Hassan, Naglaa A. Megahed, Osama M. Abo Eleinen, Asmaa M. Hassan</i></p>	
	<p><b>(Poster): “How Urban Morphology Affects Energy Consumption and Building Energy Loads? Strategies Based on Urban Ventilation”</b></p> <p><i>Sarah G. Aboria, Osama M. Abo Eleinen, Basma N. El-Mowafy, Asmaa M. Hassan</i></p>	
	<p><b>(Poster): “Sustainability Research at Port Said University Towards the Achievement of the Sustainable Development Goals.”</b></p> <p><i>Mohamed M. Elsakka, Mohamed Bassyouni, Rawya Y. Rizk, Ayman M. I. Mohamed</i></p>	
<b>3:00 PM - 3:30 PM</b>	<b>BEST PAPER AWARDS AND CLOSING SESSION</b>	

**END OF DAY 2**

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