



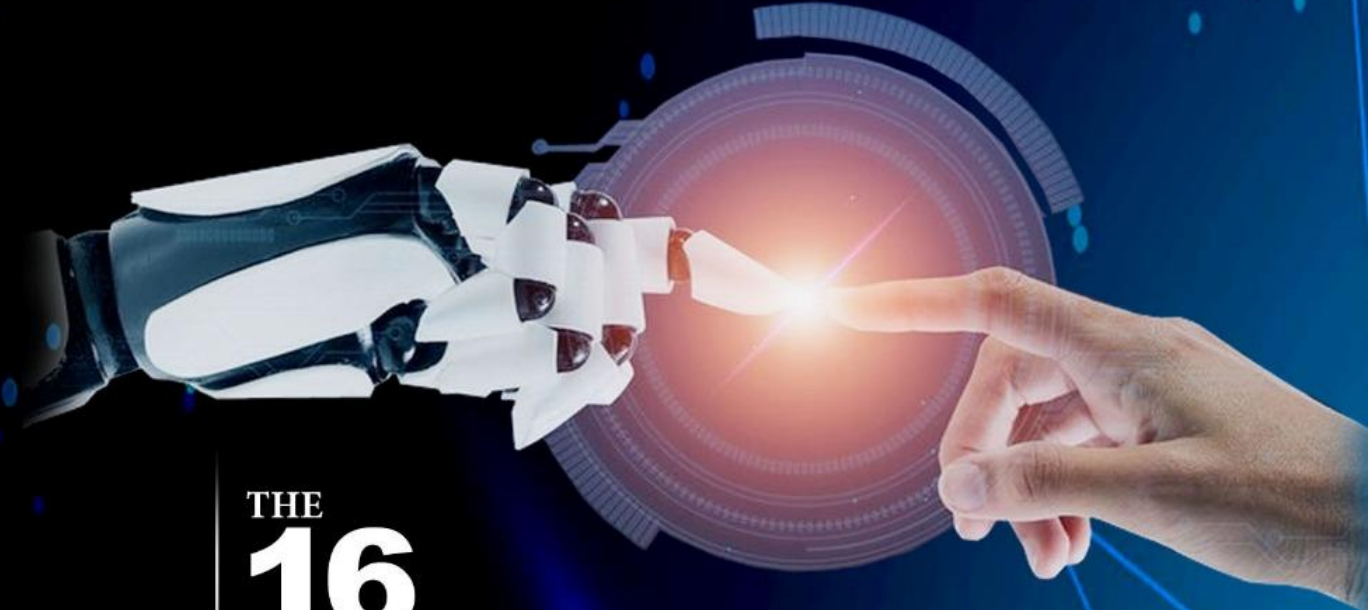
مؤتمر الأزهر الهندسي
الدولي السادس عشر



CONFERENCE PROGRAM

« التطبيقات الهندسية الحديثة
والذكاء الاصطناعي لتحقيق الاستدامة »

**Al-Azhar Engineering 16th International Conference
(Advanced Engineering Applications and
Artificial Intelligence for Sustainability)**



THE
16
TH

📍 Al-Azhar Conference Center, Nasr City, Cairo

📅 February 24-25, 2024

✉ azharconfeng@gmail.com

🌐 <https://eng-azhar.net/AEIC2024/index.html>

☎ +2 01016288159 / +2 01114068854

Co-organizers



مؤتمر الأزهر الهندسي الدولي السادس عشر

تحت مظلة الأزهر الشريف وبرعاية كريمة من فضيلة الإمام الأكبر شيخ الأزهر



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احمد الطيب

وعناية ومتابعة كل من



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أمين المؤتمر



**Al-Azhar Engineering
16th International Conference, AEIC 2024**



Al-Azhar Engineering 16th International Conference

**Under the Generous Patronage of His Eminence the Grand
Imam, Prof. Ahmed Al-Tayeb, Sheikh of Al-Azhar**



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**Al-Azhar Engineering
16th International Conference, AEIC 2024**



CONFERENCE AT A GLANCE

Day one: Saturday, 24th, 2024		
08:30 – 17:00	On-Site Registration Open (all day)	
10:00 – 12:00	Opening Ceremony	
12:00 – 12:30	Coffee Break	
12:30 – 14:30	Plenary Session P1 (Hall 1)	
14:30 – 15:30	Lunch	
Session (A)	15:30 – 17:30	
	<u>A – 1</u>: Sustainable architecture and urban design	(Hall 2)
	<u>A – 2</u>: Civil and Structural Engineering	(Hall 3)
	<u>A – 3</u>: Electrical and Computer Systems Engineering	(Hall 4)
	<u>A – 4</u>: Mechanical, Chemical, and Material Engineering	(Hall 5)
	<u>A – 5</u>: The Annual Meeting of JSPS Alumni in Egypt	(Hall 1)

Day two: Sunday, 25th, 2024		
08:30 – 17:00	On-Site Registration Open (all day)	
09:30 – 11:30	Plenary Session P2 (Hall 1)	
11:30 – 12:00	Coffee Break	
Session (B)	12:00 – 14:30	
	<u>B – 1</u>: Sustainable architecture and urban design	(Hall 2)
	<u>B – 2</u>: Civil and Structural Engineering	(Hall 3)
	<u>B – 3</u>: Electrical and Computer Systems Engineering	(Hall 4)
	<u>B – 4</u>: Mechanical, Chemical, and Material Engineering	(Hall 5)
	<u>B – 5</u>: Fostering Innovation and Entrepreneurship in Higher Education Institutions	(Hall 1)
14:30 – 15:30	Lunch	
15:30 – 16:30	Poster Session	
16:30 – 17:30	Closing	



COMPLETE PROGRAM

General Information

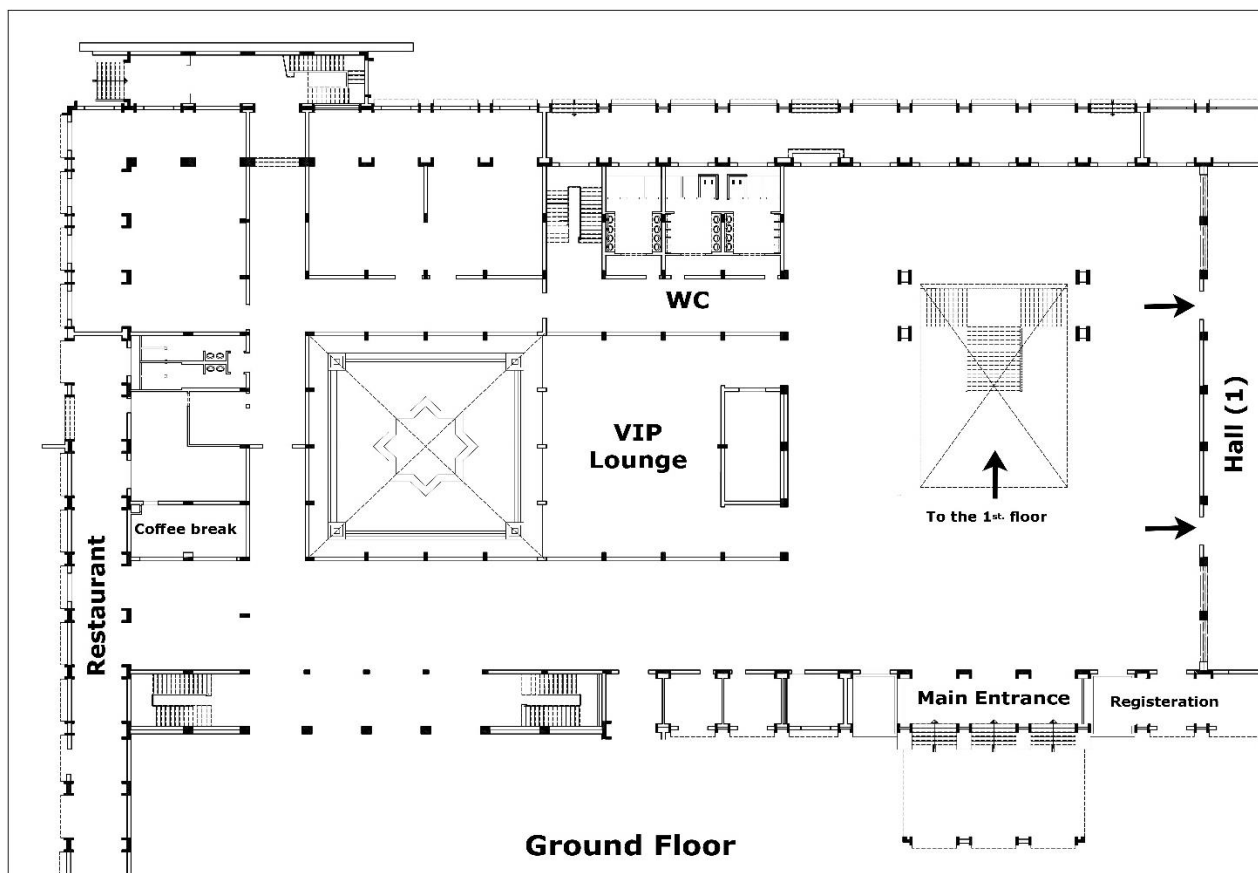
Registration Desk

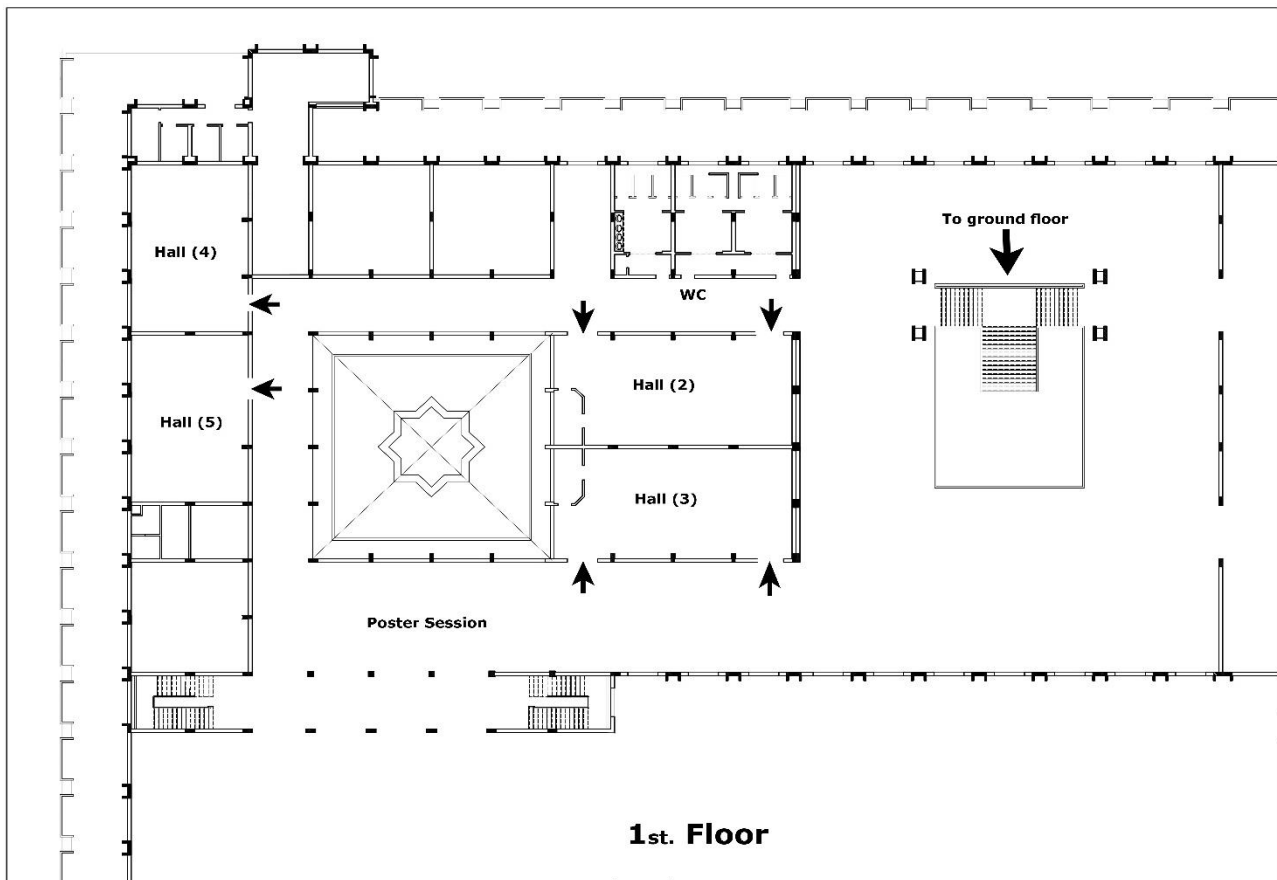
All delegates and companions should register for the conference and collect their name badges and papers at the Registration Desk, which is situated on the ground floor of the center. The Registration Desk will be open from 8:30 am to 17:00 pm during the conference period.

General Guidelines

Participants are kindly requested to wear their personal name badge during all Conference events, including sessions, opening & closing ceremonies, Coffee breaks, and lunch due to strict security reasons at Al-Azhar Conference Center.

The locations of the lecture rooms and other facilities at Al-Azhar Conference Centre are shown in the Schematic drawing below.





Personal Messages and program changes will be announced at the morning session and on the message board in the registration desk area. We strongly suggest that you check the message board or ask the registration desk.

Lunches and Coffee breaks will be held inside the Conference Centre (ground floor). For admission to the lunch hall, please show your Conference identification badge and lunch ticket.

AEIC2024 Proceedings

The accepted manuscripts will be published in the Journal of Al-Azhar University Engineering Sector (JAUES) special issue and are expected to be ready by April 2024.

Session Chairpersons and Speakers

The Program Committee would like to thank each Chairperson for their time and effort in chairing sessions at AEIC2024. Chairpersons are requested to meet speakers of their sessions in the allotted session rooms at least 15 minutes prior to the commencement of the session. Speakers are requested to load their PowerPoint presentation files on the computer provided in the respective session room with the help of the session monitor. See your session monitor at least 15 minutes before the start of the session. Due to the tight schedule, the use of personal computers is not encouraged. The time is 20 Min.; 15 Min. for presentation and 5 Min. for discussion.

If, due to unavoidable circumstances, the Chairperson listed is not able to chair the allotted session, please contact the organization committee at least 24 hours prior to the start of your session so that we can find an alternative arrangement. A list of Chairpersons, their allocated sessions, and duty dates to the chair are included in the Final Program book under Session Chairpersons and on the Conference website.



Al-Azhar Engineering 16th International Conference, AEIC 2024



Poster session

We encourage all participants to visit the poster sessions and discuss with the authors. Please note that the poster size at AEIC2024 must have **a height of 100 cm and a width of 80 cm**. Posters will be displayed on the 1st. floor, Presentation time: Sunday, Feb 25, 2024, from 15:30 to 16:30.

Please identify your poster number inside the conference program, which will be displayed on the boards, and affix your poster on the poster boards provided **on Sunday, Feb 25, 2024, in the afternoon, and leave it up until the end of the conference**. Tape will be provided to you at the registration desk to affix the posters on the boards. Please do not change the location of your poster ID displayed on the poster boards. Please remove your poster by 17:00 on Feb 25, 2024; the staff will remove all the displayed posters. The AEIC2024 Committee is not responsible for those posters left on the boards after 17:00 on Feb 25, 2024.



DAY ONE (SATURDAY 24/2/2024)

Plenary Session 1

**Session (P1)
(Hall 1)
(Saturday 24/2/2024)**

Time	Presentation No.	Title, Author(s)
12:30 – 13:00	P (1-1)	Bridging Human Behavior and Machine Perception for Driving AI Prof. Takeda Kazuya Nagoya University, Nagoya, Japan
13:00 – 13:30	P (1-2)	Engineered Nanostructured Materials for Green Technologies: Toward Decarbonization & Sustainability Prof. Nageh K. Allam American University in Cairo, Egypt
13:30 – 14:00	P (1-3)	Production and application of 2D nanocarbons through chemical, electrochemical, or mechanical methodologies Prof. Yuta Nishina Okayama University, Japan
14:00 – 14:30	P (1-4)	Integrating Extended Medical Image Analysis and Artificial Intelligence: The Future of Medical Engineering Prof. Maki Sugimoto Teikyo University, Tokyo, Japan



Sustainable Architecture and Urban Design

Session (A – 1)
(Hall 2)
(Saturday 24/2/2024)

Chairperson: Prof. Ayman M. Tayel

Chairperson: Prof. Hisham Sobh

	Time	Title, Author(s)
1.	15:30 – 15:50	Invited Talk Architecture in Malaysia Prof. Salah Zaki Faculty of Engineering, Al-Azhar University, Cairo, Egypt
2.	15:50 – 16:10	Using urban green spaces in mitigating climate change case study: new administrative capital, egypt Noha Hussein Hefnawy Faculty of Engineering, Benha University, Egypt
3.	16:10 – 16:30	Criteria for recycling vacant urban lands to achieve sustainable development dimensions. Rehab Abdel Fattah Faculty of Engineering, Sinai University, Egypt
4.	16:30 – 16:50	Architectural Education- Perspectives from the Urban Design Studios G. Karteek School of Planning and Architecture, Vijayawada, India
5.	16:50 – 17:10	Emergency engineering and key solutions for creating isolation area after (Covid-19) Ayat Mahmoud Salah , Saleh Al-Sayyid Othman, Muhammad Zakaria Al-Dars Faculty of Engineering, Al-Azhar University, Cairo, Egypt
6.	17:10 – 17:30	Developing open areas towards introducing a smart child-friendly environment as part of 2030 vision in Saudi Arabia. Mashaer Mamdouh AlAbdullah , Mohammed Seraj, and Abedelawal Abdelah Eastern Province Municipality, Service Agency, KSA & Faculty of Engineering, Al-Azhar University, Cairo, Egypt



Civil and Structural Engineering

Session (A – 2)

(Hall 3)

(Saturday 24/2/2024)

Chairperson: Prof. Mohamed Tarek Fouad

Chairperson: Prof. Mohamed Awad Bahr

	Time	Title, Author(s)
1.	15:30 – 15:50	Invited Talk Geotechnical Aspects and Problems of Civil Engineering Projects in Ancient and Modern Egypt Prof. Mohamed Awad Bahr Faculty of Engineering, Al-Azhar University, Cairo, Egypt
2.	15:50 – 16:10	Assessing Passenger Car Units on Egyptian Roads under Different Traffic Conditions: A Comprehensive Approach Magdy M. Abd Elsamad , Nasser M. Abdallah, and Ahmed S. El Hakim Faculty of Engineering, Al-Azhar University, Cairo, Egypt
3.	16:10– 16:30	Analysis of the contractual causes of conflicts in Egyptian construction projects Essam Abou-Elfetouh , Mohamed Abdel-Hamid, and Said Hasanin National Bank of Egypt, Cairo, Egypt & Faculty of Engineering, Al-Azhar University, Cairo, Egypt
4.	16:30 – 16:50	Evaluation of Post-Processed Kinematic Accuracy in Engineering Projects Mohammed M. Ghollam , Essam M. Fawaz, Mohamed A. El-shewy, and Mostafa H. Mohamed Faculty of Engineering, Al-Azhar University, Cairo, Egypt
5.	16:50 – 17:10	Parameters Influencing the Behaviour of Reinforced-Concrete Flat-Slabs under Column-Loss Scenario Shamsoon Fareed, Aslam Faqeer Muhammad, and Ayed Alluqmani Islamic University of Madinah, Saudi Arabia
6.	17:10– 17:30	Nonlinear impedance functions of a square foundation placed on semi-infinite soil. Badreddine Sbartai , Hammoudi Belkhir, Sofiane Bekakra, Madjda Khadraoui Badji Mokhtar Annaba University, Annaba, Algeria



Electrical, System, and Computer Engineering

Session (A – 3)

(Hall 4)

(Saturday 24/2/2024)

Chairperson: Prof. Aly Elsemary

Chairperson: Prof. Ibrahim Nassar

	Time	Title, Author(s)
1.	15:30 – 15:50	<p>Invited Talk</p> <p>Harnessing Internet of Things and Machine Learning in Industry 4.0 based Electrical Energy Systems</p> <p>Prof. Diaan-Eldin Abdelsattar Mansour Egypt-Japan University of Science and Technology (E-JUST), Alexandria, Egypt</p>
2.	15:50 – 16:10	<p>A comparative study of module efficiency and sizing of the inverter's lcl filter for photovoltaic systems a case study</p> <p>Mohamed M. Reda, Mohamed I. Elsayed, M.A. Moustafa Hassan, and H. M. Seoudy May University, Cairo, Egypt</p>
3.	16:10 – 16:30	<p>Load frequency control optimization using mgo-based pidf in three-area systems with energy storage.</p> <p>Abdulslam A. Aloukili, Tarek M. Nasser, Mohammed A. Mehanna University Of Dernah, Dernah, Libya & Faculty of Engineering, Al-Azhar University, Cairo, Egypt</p>
4.	16:30 – 16:50	<p>Securing VANETS using a Blockchain-Based Approach with Proof of Trajectory Consensus</p> <p>Manal S. Gamal, Abdurrahman A. Nasr, and Sayed A. Nouh 6th of October University, Giza, Egypt</p>
5.	16:50 – 17:10	<p>Software Testing using Machine to Machine communication for IOT Application.</p> <p>Rehab Adel Abdel Razek, Nagdy Mahmoud Nagdy, Gamal Abdel Rahim Tharwat, and Ahmed Abdel Aziz Kolkila Faculty of Engineering, Al-Azhar University, Cairo, Egypt</p>
6.	17:10 – 17:30	<p>An Intelligent Model for Auto Generating eCourses from TextBooks in an Adaptive eLearning Environment.</p> <p>Hager Hamdy, Shehab Gamalel-Din, Mohammed Atef Faculty of Engineering, Al-Azhar University, Cairo, Egypt</p>



Mechanical, Chemical, and Material Engineering

Session (A – 4)

(Hall 5)

(Saturday 24/2/2024)

Chairperson: Prof. Mohamed Hammouda

Chairperson: Prof. Amir Mahdy

	Time	Title, Author(s)
1.	15:30 – 15:50	Invited Talk Global carbon dioxide recycling to an added value hydrocarbons: building up the first Egyptian prototype Prof. Ahmed Abd El Moniem Egypt-Japan University of Science and Technology (E-JUST), Alexandria, Egypt
2.	15:50 – 16:10	Invited Talk Waste Recycling of Nanomaterial Production Sustainability Prof. Gomaa A. M. Ali Faculty of Science, Al-Azhar University, Asyut, Egypt
3.	16:10 – 16:30	Enhancement of heat transfer in a passive cooled heat exchanger Ramy Farid, Said M. A. Ibrahim, and W. Aboelsoud Faculty of Engineering, Al-Azhar University, Cairo, Egypt
4.	16:30 – 16:50	Numerical Investigation of the Suction and Blowing Effects on the Performance of S826 Aerofoil for Wind turbine Applications. Aljunayd Aloukili, Mohamed Elsakka, Mostafa Ali, M. Elfaisal Elrefaie University of Derna, Derna, Libya & Al-Azhar University, Cairo, Egypt
5.	16:50 – 17:10	Design of more efficient spiral wound membrane Hamza J. Abogharraf, Said M. A. Ibrahim, and Heba Abdallah Faculty of Engineering, Al-Azhar University, Cairo, Egypt
6.	17:10 – 17:30	A semi-solid manufacturing technique for low alumina percentage reinforced aluminum 7075 metal matrix composites Mohamed Khaled, Mazen Negm, Ramy Mohamed, and M. E. Moussa Faculty of Engineering, Al-Azhar University, Cairo, Egypt



The Annual Meeting of JSPS Alumni in Egypt

Session (A – 5)

(Hall 1)

(Saturday 24/2/2024)

Chairperson: Prof. Ibrahim Tantawy

Chairperson: Prof. Gad El Qady

	Time	Title, Author(s)
1.	15:30 – 15:50	Invited Talk Neural Network Regressor for Designing Biomedical Low Elastic Modulus Ti-Zr-Nb-Mo Medium Entropy Alloys Prof. Mohamed Gepreel Egypt-Japan University of Science and Technology (E-JUST), Alexandria, Egypt
2.	15:50 – 16:10	Artificial intelligence and the future of Medical Anthropology Prof. Walaa Saad National Research Centre, Giza, Egypt
3.	15:10 – 16:30	Flash Flooding Hazard Assessment and Water Management in Wadi Ghweabae Coastal Zone, Gulf of Suez, Egypt Sayed Abo El-Ela Faculty of Science, Assiut University, Assiut, Egypt
4.	16:30 – 16:50	The Impact of Climate Change on Water Resources in Egypt Ahmed Azzam Theodor Bilharz Research Institute, Giza, Egypt
5.	16:50 – 17:10	Sustainable Porous Carbon Adsorbent for H ₂ Storage Applications Nour F. Attia National Institute of Standards, Giza, Egypt
6.	16:10 – 17:40	General Assembly Meeting of JSPS Alumni Association in Egypt



DAY TWO (SUNDAY 25/2/2024)

Plenary Session 2

**Session (P2)
(Hall 1)
(Sunday 25/2/2024)**

Time	Presentation No.	Title, Author(s)
09:30 – 10:00	P (2-1)	Japan Society for the Promotion of Science (JSPS): Functions, Structures and Strategies Prof. Naoko Fukami Professor, Director of Cairo Research Station, JSPS
10:00 – 10:30	P (2-2)	Urban transformations of the city in order to accommodate temporal variables Mobility in Cairo Prof. Soheir Hawas Cairo University, Cairo, Egypt
10:30 – 11:00	P (2-3)	Advancing Assessment and Assistive Technologies for Individuals with Special Needs Ass. Prof. Fady Alnajjar United Arab Emirates University, UAE
11:00 – 11:30	P (2-4)	Machine learning advances in Biomedical Decision-Making Ass. Prof. Haitham A. Elmarakeby MIT and Harvard, USA, and Faculty of Engineering, Al-Azhar University, Cairo, Egypt

Sustainable architecture and urban design



**Al-Azhar Engineering
16th International Conference, AEIC 2024**



Session (B – 1)

(Hall 2)

(Sunday 25/2/2024)

Chairperson: Prof. Mostafa Baghdadi

Chairperson: Prof. M. Abd Al-Aziz

	Time	Title, Author(s)
1.	12:00 – 12:20	Invited Talk (Online) AI for Urban Planning: Why Now is the Time ? Prof. Tom Sanches Texas A&M University, Texas, USA
2.	12:20 – 12:40	Invited Talk Artificial intelligence as a technical tool for urban planning and design Prof. M. Abd Al-Aziz Faculty of Engineering, Al-Azhar University, Cairo, Egypt
3.	12:40 – 13:00	The role of artificial intelligence in achieving sustainable maintenance in residential building Norhan A. Mohamed , Khaled M. Khorshed, Mohamed S. Hassan Ministry of Housing and Utilities & Al-Azhar University, Cairo, Egypt
4.	13:00 - 13:20	Techniques to stimulate community Engagement in order to promote the local identity in a sustainable context Case Study of a residential complex in Sheikh Zayed City, Egypt Nagy Mahmoud El Gritly Consultant Engineer, Urban Development Expert
5.	13:20 – 13:40	Monitor the nature of the architectural role in globalization and information technology. Mohamed Ahmed Mohamed Atef , Algendy Shaker Algendy, Ismail Mohamed Mohieddin Faculty of Engineering, Al-Azhar University, Cairo, Egypt
6.	13:40 – 14:00	The impact of information technology on the design of architectural spaces of banks Nada Mohamed Taha Nooman , Alaa Farid , and Sara N. Elkabany Faculty of Engineering, Al-Azhar University, Cairo, Egypt
7.	14:00 – 14:20	The human aspect criteria of courtyards in shopping centers Shimaa Abdelfattah Ibrahim , Khaled Mostafa Khorshid, Adel Abdelhamid Radwan, and Randa Khalil Faculty of Engineering, Al-Azhar University, Cairo, Egypt

Civil and Structural Engineering

Session (B – 2)



**Al-Azhar Engineering
16th International Conference, AEIC 2024**



(Hall 3)

(Sunday 25/2/2024)

Chairperson: Prof. Abdallah Wahdan

Chairperson: Prof. Ahmed El Hakim

	Time	Title, Author(s)
1.	12:00 – 12:20	Invited Talk Intelligent Transport System (ITS) Application on Road Safety Prof. Ahmed El Hakim Faculty of Engineering, Al-Azhar University, Cairo, Egypt
2.	12:20 – 12:40	Impact of the velocity on the fate of pollutants in Gabal El-Asfar drain Mostafa Hassanien , Usama F. Mahmoud, Emad S. Elmolla, Ahmed Abdallah Sayed Ahmed, and Abdelhamed Khater Faculty of Engineering, Al-Azhar University, Cairo, Egypt
3.	12:40– 13:00	Arundo donax based- biochar as a sustainable adsorbent for natural organic matter removal from surface water. Mustafa Abo Jabal , Usama F. Mahmoud, Emad S. Elmolla, Hossam Monier, and Gamal Kamel Hassan Faculty of Engineering, Al-Azhar University, Cairo, Egypt
4.	13:00 - 13:20	Studying the properties of Self Compacting Concrete using Marble Powder Reham Ezzat Ahmed , Faisal A. Ali, and Ahmed M. El-Sebai Modern Academy for Engineering and Technology, Cairo, Egypt
5.	13:20 – 13:40	Experimental Investigations of the Effect of Conduit Connectivity on Flow Exchange in Karst Aquifers Amr. A. Ashour , Ahmed E. Hassan, Mostafa A. Abdel-Aal, and Mohamed A. Abd-Elmageed Faculty of Engineering, Al-Azhar University, Cairo, Egypt
6.	13:40 – 14:00	Non-traditional use of mechanically stabilized earth walls in a water retaining structure Ahmed Mohyee Ibrahim Housing and Building National Research Center, Giza, Egypt
7.	14:00 – 14:30	Determining the hydraulic conductivity for porous media using a modified experimental method Omar Ibn Alkhattab Abo-Alwafa , Ahmed Helmy, Amir Mobasher, and Anas El-Molla Faculty of Engineering, Al-Azhar University, Cairo, Egypt

Electrical, System, and Computer Engineering

Session (B – 3)



**Al-Azhar Engineering
16th International Conference, AEIC 2024**



(Hall 4)

(Sunday 25/2/2024)

Chairperson: Prof. Mohamed Zaki

Chairperson: Prof. Mohamed Ahmed Hassan

	Time	Title, Author(s)
1.	12:00 – 12:20	Invited Talk Future of the AI in Egypt Prof. Mohamed Zaki Faculty of Engineering, Al-Azhar University, Cairo, Egypt
2.	12:20 – 12:40	Stochastic optimization of electric generation systems considering input data uncertainties Mohamed Ahmed Hassan El-Sayed Cairo University, Giza, Egypt
3.	12:40 – 13:00	Optimizing 5g front haul: efficient design and implementation of a fiber optic communication architecture Alyaa Ali. Hameed (Online) Tikrit University, Salahaldin, Iraq
4.	13:00 - 13:20	Fabrication of a thin film gamma radiation sensor using nano metal oxides Sahar W. Morsy, M. Khalil Refai, A. Nour El-Mahdy, Magy M. Kandil. Nuclear & Radiological Safety Research Center (NRSRC), Egyptian Atomic Energy Authority (EAEA), Cairo, Egypt,
5.	13:20 – 13:40	Ai-enhanced insights into Yemen riyal's exchange rate: unraveling long-term behavior through markov chain analysis Ghassan Ahmed Ali, Shehab Abdulhabib Saeed Alzaeemi, Haji Abdul Hafidz bin Haji Omar, Dayang Hajah Tiawa binti Awang Haji Hamid, Abdul Azeem Khan Universiti Islam Sultan Sharif Ali, Brunei Darussalam,
6.	13:40 – 14:00	Energy-efficient AODV using super increasing knapsack. Mohamed A. Ryan, Sayed Nouh, and Aly M. El-Semary Faculty of Engineering, Al-Azhar University, Cairo, Egypt
7.	14:00 – 14:20	Efficiency and Acceptability of AI-Generated Speech Rabie A. Ramadan (Online) Nizwa University, Oman Cairo University, Giza, Egypt.

Mechanical, Chemical, and Material Engineering

Session (B – 4)

(Hall 5)



**Al-Azhar Engineering
16th International Conference, AEIC 2024**



(Sunday 25/2/2024)

Chairperson: Prof. Mohammed Elfaisal Elrefaie

Chairperson: Prof. Nour A. El-Emam

Chairperson: Prof. Mosaad Sadawy

	Time	Title, Author(s)
1.	12:00 – 12:20	Invited Talk Ceramic Coatings: Navigating Future Trends and Applications Prof. M. Shahien , Masato Suzuki, and Kentaro Shinoda National Institute of Advanced Industrial Science and Technology (AIST), Ibaraki, Japan
2.	12:20 – 12:40	Effectiveness of Chicken Feathers as a Renewable Sorbent Material in Oil Spill Clean-Up Mohamed A. Ayad , Mostafa E. Aboul-Fetouh, Soad Z. Mohamed, Renee I. Abdallah, Tarek M. Aboul-Fotouh Faculty of Engineering, Al-Azhar University, Cairo, Egypt
3.	12:40 – 13:00	Design, modeling, simulation, and investigation of the dynamic behavior of a hydrostatic power transmission system for horizontal axis wind turbine M. Gomaa Abu Alnagah M. Elfaisal Elrefaie, and Ziad A. Ibrahim Faculty of Engineering, Al-Azhar University, Cairo, Egypt
4.	13:00 - 13:20	Thermal Performance investigation of Plate-Finned Vapor Chamber Heat Sink With Using Different Fluids Mohammed A. Al-Rahman , Saeed A.A. Ibrahim, Sayed Ahmed, M. Elfaisal Elrefaie Faculty of Engineering, Al-Azhar University, Cairo, Egypt
5.	13:20 – 13:40	Circular Economy in Marble and Granite Industry: From Stone Scraps to Sustainable Green Concrete H. A. Attia , Mohamed G. Farghaly, A.M. Saleh, M.A. Abdel Khalek Faculty of Engineering, Al-Azhar University, Qena, Egypt
6.	13:40 – 14:00	A model for estimating remaining useful life of mechanical components. Abdelrahman Shaaban , Ali Naser Abdallah, and Said M. A. Ibrahim Faculty of Engineering, Al-Azhar University, Cairo, Egypt
7.	14:00 – 14:30	Performance comparative study of low Reynolds number airfoils utilized in vertical-axis wind turbines. M. Shaaban Abul-Ela , A. Ibrahim Sayed and M. Elfaisal Elrefaie Ahran Canadian University, Cairo, Egypt

**Fostering Innovation and Entrepreneurship in Higher
Education Institutions**

Session (B – 5)



**Al-Azhar Engineering
16th International Conference, AEIC 2024**



(Hall 1)

(Sunday 25/2/2024)

Chairperson: Prof Mohamed Galal

Chairperson: Prof Mahrous Ali

	Time	Title, Author(s)
1.	12:00 – 12:30	Invited Talk Engaged & Entrepreneurial Universities Role in shaping the Innovation Driven Future (University 4.0) Prof. Dr. Mohamed Galal Dean, Faculty of Engineering. Director of Entrepreneurship Center, Al-Azhar University
2.	12:30 – 12:50	University based entrepreneurship Programs Dr. Wael Eldesouki Bedda Entrepreneurship Center Director, Arab Academy for Science, Technology and Maritime Transport
3.	12:50 – 13:10	Role of Technology based Incubators in transforming science into business Prof. Ehab Abdelraouf Essawy Director of Incubators Office, Helwan University
4.	13:10 - 13:30	ResearchPreneurs...From Research to Market Dr. Nezar Samy Project Officer, Inclusive Growth and Innovation Portfolio
5.	13:30 – 13:50	The Vital of AI in Driving Digital Transformation and Sustainable Development Dr. Mohamed Kholief Innovation and Digital Transformation Consultant
6.	13:50 – 14:10	Enhancing Entrepreneurship Education in Egypt, The role of government initiative Dr. Heba Medhat Zaki Director of Egypt Entrepreneurship & Innovation Center
7.	14:10 – 14:30	Al-Azhar University and Sustainability Algendy Shaker Faculty of Engineering, Al-Azhar University, Cairo, Egypt

POSTER SESSIONS

(SUNDAY 25/2/2024)

15:30 – 16:30



Sustainable architecture and urban design

A1.	Principles of dividing planning regions in the light of national projects Mosaad Hamouda , Kamal Khalaf, and Zaker Mousa Faculty of Engineering, Al-Azhar University, Cairo, Egypt
A2.	Studying the impact of using the dynamic configuration for building users and occupants of external courtyards Anessa H.Abou Elwafa , Hesham A. Sobh, and Algendy S. Abdelghany Al Salam Higher Institute for Engineering and Technology, Cairo, Egypt
A3.	Exploring the ability of structural systems to achieve Flexibility in Architecture Mahmoud Abd El-Rahiem Sayed , Mohamed Zakaria Al-Dars, and Mohamed Hassan Khalil Faculty of Engineering, Al-Azhar University, Cairo, Egypt
A4.	Artificial intelligence and its role in management of main systems of smart cities Mohiy F. El-Ganzoury , Abdel-Awal A. Mohamed, Mohammed M. Serag Faculty of Engineering, Al-Azhar University, Cairo, Egypt
A5.	The role of artificial intelligence in enhancing the biological balance in architecture Rasha B. El sokary , Muhammad Hassan Khalil, and Alaa Farid Faculty of Engineering, Al-Azhar University, Cairo, Egypt
A6.	Urban socialscape as a scale to evaluate achieving students' needs in university campus. Amira Mostafa , Hesham Sobh, and Ahmed El Kordy Faculty of Engineering, Al-Azhar University, Cairo, Egypt
A7.	Predicting potential risks associated with fast-track projects Amr M. Afify , Khaled M. Khorshid, and Adel A. Radwan Faculty of Engineering, Al-Azhar University, Cairo, Egypt
A8.	The role of interactive elements in developing children's skills in urban spaces Hassan Abd Elwanies , Mohammed Serag and Khaled Khorshid Faculty of Engineering, Al-Azhar University, Qena, Egypt
A9.	Local Architectural Freeform: Between Theory and Practice Mohammed A. Soliman , Khaled M. Khorshid, and Adel A. Radwan Faculty of Engineering, Al-Azhar University, Cairo, Egypt
A10.	The impact of the evolution of human aspect on the architecture of courtyards in shopping centers Shimaa Abdelfattah Ibrahim , Khaled Mostafa Khorshid, Adel Abdelhamid Radwan, and Randa Khalil Faculty of Engineering, Al-Azhar University, Cairo, Egypt
A11.	Comparative analysis of architectural education methodology during the coronavirus pandemic Samir S. Al-shenawy , Ahmed A. Al-kattan, Adel A. Radwan Faculty of Engineering, Al-Azhar University, Cairo, Egypt



**Al-Azhar Engineering
16th International Conference, AEIC 2024**



A12.	<p>The role of smart finishes in reducing the spread of infection in hospital isolation rooms.</p> <p>Mohamed Elsadat Assasa, Khaled Khorshed, and Sherief Ahmed Ebrahim Manzala Academy of Engineering- Dakahlia - Egypt. & Faculty of Engineering, Al-Azhar University, Cairo, Egypt</p>
A13.	<p>The impact of nanotechnology on the quality of the internal environment of hospitals</p> <p>Mohamed Elsadat Assasa, Khaled Khorshed, and Sherief ahmed Ebrahim Manzala Academy of Engineering- Dakahlia - Egypt. & Faculty of Engineering, Al-Azhar University, Cairo, Egypt</p>
A14.	<p>The influence of the western architectural language on the architecture of Islamic societies</p> <p>Moustafa A. Baghdadi, Magdi M. Kasem, and Dina R. Nassar Al-Azhar University, Cairo Egypt</p>
A15.	<p>The importance of modern technology for achieving thermal comfort in administrative buildings</p> <p>Fatma Abdelkarim Mohammed Ibrahim, Alaa Eldin Elsayd Farid, Mohammed Hassan Khalil Ahmed Faculty of Engineering, Al-Azhar University, Cairo, Egypt</p>
A16.	<p>The impact of using electrochromic smart glass in building facades to reduce solar heat gain in hot climate zones in Egypt.</p> <p>Aya H. El Gendy, Tarek S. Aisha, Hany S. Salem High Institute for Engineering Technology, 21K Cairo-Belbies Rd., Al-Obour, Egypt</p>
A17.	<p>The impact of human development indicators on differences between Egyptian governorates in the period (2010-2022).</p> <p>Asmaa Salah Faculty of Engineering, Al-Azhar University, Cairo, Egypt</p>
A18.	<p>Measuring the urban maturity of medium-sized cities "A case study of Sinbellaween city"</p> <p>Radwa Abdelaziz Agha, Ahmed Abdelaziz Elkady, Maged Abdelaziz Elmahdy Faculty of Engineering, Al-Azhar University, Cairo, Egypt</p>
A19.	<p>Study and Analysis of Factors Influencing the Selection of Logistic Areas Sites ACase Study: Alexandria Region</p> <p>Shaban Attya Abukhtwah, and Gamal Gomaa Helewa Faculty of Engineering, Al-Azhar University, Cairo, Egypt</p>
A20.	<p>The impact of monorail stations on land use (study of the Nasr city line)</p> <p>Asmaa Salah , Hanan Saad Zaghlol, Mohammed Ebrahim Serag Faculty of Engineering, Al-Azhar University, Cairo, Egypt</p>
A21.	<p>Reshaping Cities: A Sustainable Tomorrow with the 15-Minute Model"</p> <p>Fatma Elsayed, Mohamed Abdelaziz, and Asmaa Salah Faculty of Engineering, Al-Azhar University, Cairo, Egypt</p>
A22.	<p>The impact of tourism development on south sinai</p> <p>Saher Samir Saad</p>



Al-Azhar Engineering 16th International Conference, AEIC 2024



	Faculty of Engineering, Al-Azhar University, Cairo, Egypt
A23.	Precieved patterns of lights in urban fabric: appropriating qualities and attributes Mona Y. Shedid Faculty of Engineering, Benha University, Benha, Egypt
A24.	Achieving the sustainability of cities in developing countries and opportunities Mahmoud Mohamed Hamouda Faculty of Engineering - Modern University
A25.	APPLICATIONS OF ARTIFICIAL INTELLIGENCE IN URBAN DESIGN Hager EL_Tantawy , Reham Abobeah, Mohamed Attia, and Mohamed Abdelaziz Faculty of Engineering, Al-Azhar University, Cairo, Egypt
A26.	Optimizing the performance of universities buildings in egypt as a means of accomplishing the 2030 sustainable development goals Noran Magdy , and Mahmoud ElBaz, Moutaz Architecture Department, Modern Academy for Engineering and Technology, Cairo, Egypt
A27.	Using multi-layer facade systems to increase the energy efficiency of building: a systematic review of the factors affecting thermal performance, daylighting , and ventilation. Ghada Mahmoud Mohammad Faculty of Engineering, Al-Azhar University
A28.	Impact of Renewable Energy on Potential Green Communities - Case Study: Madinaty, Egypt Haitham Mohamad Osama Ali Suez Canal University, Suez, Egypt
A29.	Geometry of architectural freeform structure Mohga Youssef Faculty of Engineering, Al-Azhar University, Cairo, Egypt
A30.	Leveraging Artificial Intelligence in Landscape Concept Design Phase Mohamed Sobhi Hassan Faculty of Engineering, Al-Azhar University, Cairo, Egypt

Civil and Structural Engineering

B1.	Effect of Tunnel Configuration on the Behavior of Two adjacent Tunnels Tasneem. A. Essa , Tarek, M.F., Abd EL Samee W. Nashaat Giza High Institute of Engineering and Technology, Giza, Egypt & Faculty of Engineering, Al-Azhar University, Cairo, Egypt
B2.	Research on the torsional behavior of prestressed beams Mohamed M. Sallam , Hassan H. El-Esnawi, and Amr H. Riad



Al-Azhar Engineering
16th International Conference, AEIC 2024



	Faculty of Engineering, Al-Azhar University, Cairo, Egypt
B3.	Geotechnical characteristics of contaminated soil by waste engine oil Ahmed Mustafa Kamel Mohamed , Kamel A. M, Bahr M.A , and Abdelmageed M.F Faculty of Engineering, Al-Azhar University, Cairo, Egypt
B4.	Flood Risk mitigation strategy for the most affected area by flash floods in Marsa Matrouh Governorate Tarek Abu Zaid Higher Technological Institute, 6 th . of October Branch
B5.	A comparative study of the bending moments analysis for the cross girder in two-lane two-way highway bridge under actual traffic axle weights and the Egyptian design load standard Hazem Mohamed Reda Katamish Faculty of Engineering, Al-Azhar University, Cairo, Egypt
B6.	Enhancement of bio-hydrogen production from sewage sludge and fallen trees leaves via Anaerobic Bioreactor Alaa A. El-kebeer , Usama F. Mahmoud, Sayed Ismail, Abu Abbas E. Jalal, and Gamal K. Hassan Faculty of Engineering, Al-Azhar University, Cairo, Egypt
B7.	Developing a local geoid model for Egypt using machine learning algorithms. Salah S. Elsadany , Essam M. Fawaz, Ahmed M. Hamdy, and Mohammed A. Elshewy Faculty of Engineering, Al-Azhar University, Cairo, Egypt
B8.	Developing Design Curves to Determine Recharge Wells Influence Zones under Various Soil Characteristics Ahmed Mohamed Metwally , and Mostafa Ali Abdelaal Faculty of Engineering, Al-Azhar University, Cairo, Egypt
B9.	Hydrodynamic and water quality modelling of Gabal El-Asfar drain Mostafa Hassanien , Usama F. Mahmoud, Emad S. Elmolla, Ahmed Abdallah Sayed Ahmed, and Abdelhamed Khater Faculty of Engineering, Al-Azhar University, Cairo, Egypt
B10.	Application of UAV data and Geospatial AI Techniques for Sewer Inlets Localization and Mapping Haysam M. Ibrahim , Essam M. Fawaz, Amr M. Elsheshtawy, and Ahmed M. Hamdy Faculty of Engineering, Al-Azhar University, Cairo, Egypt
B11.	The integration of value and risk management in storm drainage networks Ahmed Kamhawey , and Mohammed Abdelsalam Menofia University, Menofia, Egypt
B12.	Experimental Investigation on Mechanical Performance of Basalt Fiber-Steel Composite Bars Yasser M. Mohammad , Abd El-kader A. Haridy, and Abo El-wafa M. El-Thakeb Faculty of Engineering, Al-Azhar University, Qena, Egypt
B13.	Experimentally And Numerically Investigation of Local Metakaolin Effect on Behavior Of Reinforced Concrete Beams M. Zamer , A. Summra, and W. Hoziefa



**Al-Azhar Engineering
16th International Conference, AEIC 2024**



	Madina Academy, Cairo, Egypt and Faculty of Engineering, Al-Azhar University, Cairo, Egypt
B14.	Manufacture and Properties of Self-Healing Concrete Ahmed S. Abbas, Mohamed Taha Nooman, Ashraf F. Ismael, and Alsayed E. Mekky Al-Azhar University, Cairo, Egypt
B15.	Evaluating the effectiveness of the slope-based filter in stripping off above ground objects from aerial imagery digital surface models in rural landscapes Fahmy F. F. Asal Faculty of Engineering, Menofia University, Menofia, Egypt.
B16.	Non-linear analysis and experimental verification of bent glass curtain walls. Sarah Abd El Kareim , Mahmoud Alnagar, Mostafa Morsi El-Shami Faculty of Engineering, Menoufia University, Menoufia, Egypt,
B17.	Analysis of different earthquake records on the behaviour of circular tunnel in different soil Mahmoud Farouk , Mohamed Abo-Alanwar, and Sameh Elbatal El Gazeera Higher Institute for Engineering and Technology, Cairo, Egypt and Faculty of Engineering, Al-Azhar University, Cairo, Egypt

Electrical, System, and Computer Engineering

C1.	Performance Enhancement of the Channel Estimation via Deep Learning Asmaa M. Alwakeel , Ahmed A. Emran, and Abdellatif I. M. Semeia Faculty of Engineering, Al-Azhar University, Cairo, Egypt
C2.	Impact Study of Solar Energy on Power System State Estimation Utilizing Weighted Least Square



Al-Azhar Engineering 16th International Conference, AEIC 2024



	Technique Zahraa Esmail Hamed , Hassan S. Mohamed, and Ibrahim A. Nassar Faculty of Engineering, Al-Azhar University, Cairo, Egypt
C3.	Optimizing Multiple-Target CFAR Detection Efficacy through Advanced Intelligent Clustering Algorithms within K-Distribution Sea Clutter Environments Mansoor M. Al-dabaa , Ahmed A. Emran, Ahmed Yahya, Mohamed B. El-Mashade, and Ashraf Aboshosha Faculty of Engineering, Al-Azhar University, Cairo, Egypt
C4.	Deep Learning Mitigation of Sea Clutter for Enhanced Radar Target Detection Mansoor M. Al-dabaa , Ahmed A. Emran, Ahmed Yahya, Mohamed B. El-Mashade, and Ashraf Aboshosha Faculty of Engineering, Al-Azhar University, Cairo, Egypt
C5.	Optimize energy management techniques to decrease operational costs in water treatment plants at no investment based on improved pumps operation schedules. Mohamed I. Abodief , Nader S. Abdelhakeem, and Mohamed I. Elsayed Faculty of Engineering, Al-Azhar University, Cairo, Egypt
C6.	A literature review of BCIs for assisting SCIs with disabilities from an evolutionary point of view and future trends. Nashwa Mosaad , Mohamed K. Rifai, Khalid A. Elshafey, and Basim M. Ayoub Faculty of Engineering, Al-Azhar University, Cairo, Egypt
C7.	Intelligent traffic management system using internet of things in smart cities. Dahey G. Ghanem Housing and Building National Research Center, Egypt
C8.	Intelligent roads management system using IOT devices. Dahey G. Ghanem Housing and Building National Research Center, Egypt
C9.	Driving the Future: Deep Learning Techniques for Road Lane Detection in Autonomous Vehicles Manal Mustafa Ali , and Reham Abobeah Faculty of Engineering, Al-Azhar University, Cairo, Egypt
C10.	Diagnosis of Lung cancer metastasis using Deep Learning Technique Khadeja. Fahmy , Abd El-Hady Ammar, M. Zorkany Faculty of Engineering, Al-Azhar University, Cairo, Egypt
C11.	Beyond fifth generation (5g) networks and better performance expectations for cellular wireless networks Mohamed Mahmoud Abd El-Hamid , Mohamed Fared Zaghoul, Ahmed Abd El-Aziz Kolkila Faculty of Engineering, Al-Azhar University, Cairo, Egypt
C12.	Long bones X-Ray fracture classification using machine learning Soaad Nasser , Ashraf Al-Marakeby, Hala Maghraby, Sabry Abd El-Moetty



**Al-Azhar Engineering
16th International Conference, AEIC 2024**



	Faculty of Engineering, Al-Azhar University, Cairo, Egypt
C13.	Intelligent personalized advice in e-Learning Environment Ahmed Asmat , Shehab Gamalel-Din, and Gamal Tharwat Faculty of Engineering, Al-Azhar University, Cairo, Egypt
C14.	Dandelion optimizer for sizing and placement of energy storage systems to improve voltage stability and reduce total cost Ramy Mohamed Hany , Tarek Mahmoud, El Said Abd El Aziz Osman, and Abo El Fotouh Abd El Rehim The Higher Institute of Engineering, Elshorouk City, Elshorouk
C15.	An IoT System for Monitoring and Controlling Water Distribution Stations in Remote Areas Hany Mahany Ismaiel , Ali Rashed, Rahouma Kamel Hussein, Ahmed Abd El-Aziz and Maha Medhat Al-Azhar University, Cairo Egypt

Mechanical, Chemical, and Material Engineering

D1.	Active cooling heat transfer coefficient enhancements in porous compact heat exchanger Ramy Farid , Said M. A. Ibrahim, and W. Aboelsoud Faculty of Engineering, Al-Azhar University, Cairo, Egypt
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**Al-Azhar Engineering
16th International Conference, AEIC 2024**



D2.	Investigation of the static and dynamic behavior of proportional flow control valve provided by pressure compensator. M. Gomaa Abu Alnagah , M. Elfaisal Elrefaie, and Ziad A. Ibrahim Faculty of Engineering, Al-Azhar University, Cairo, Egypt
D3.	Enhancing endotracheal tube coatings: a pathway to prevent ventilator-associated pneumonia in critically ill patients: an in vitro study. Manar Fathy Al-Sayed , Mohamed Tarek Elwakad, Mohammed A. Hassan, Ahmed M Soliman, Amal S. Eldesoky Faculty of Engineering, Al-Azhar University, Cairo, Egypt
D4.	Welding Performance of Carbon Steel Covered with Stainless Steel using Conventional SMAW and FSW Processes A. Soudy , W. Hoziefa , K.M. Hafiz, and N. Fatahalla Faculty of Engineering, Al-Azhar University, Cairo, Egypt
D5.	For sustainability and a green environment: artificial marble- granite as a value- added product from marble and granite waste residue. H. A. Attia , Mohamed G. Farghaly, A.M. Saleh, M.A. Abdel Khalek Faculty of Engineering, Al-Azhar University, Qena, Egypt
D6.	Investigation of the modulus of elasticity in aluminum and steel alloys from phased array ultrasonic measurements Mohamed Khaled , Mazen Negm, Ramy Mohamed Faculty of Engineering, Al-Azhar University, Cairo, Egypt
D7.	Experimental investigation of a novel wind-powered ventilation system for climate change mitigation Asmaa Ahmed, Ahmed Refaat, Mohamed Elsakka , Islam Amin, and Ayman Mohamed Faculty of Engineering, Port Said University, Port Said, Egypt.
D8.	Design of mechanical mixer for synthetization of polymer matrix composites M. Ismail , Mohamed A. Bayoumi, Sayed Akl The British University in Egypt
D9.	A review of miniature channels and nanofluids technologies used as heat transfer enhancement techniques for microcooling systems M. S. Elsherbiny , Moustafa Ali, Moatsem Shahin, and Mahmoud El-Kady Faculty of Energy and Environmental Engineering, British University in Egypt.
D10.	Smoke Management of Underground Car Park using CFD Simulations Mohamed I. Younes , ElAdl A. Elkady, and Mustafa A. Mohamed Faculty of Engineering, Al-Azhar University, Cairo, Egypt
D11.	Facile one step electrosynthesis of Cu-Zn based catalysts at the surface of the in-situ functionalized graphite felt for CO ₂ electroreduction A. M. Abdelrahim, M. E. Ghaith, Aya M. Saada , A. M. Attia, A. A. El-Sherif, M. S. El-Deab Faculty of Energy and Environmental Engineering, The British University in Egypt



**Al-Azhar Engineering
16th International Conference, AEIC 2024**



D12.	Facile Fabrication of Nanocoatings for Promising Flame Retardant and Antibacterial Textile Fabrics Fatma El-Sayed , Ibrahim El T. El Sayed, Nour F. Attia National Institute of Standards, Giza, Egypt
D13.	Functionalized aminophosphonate chitosan-magnetic nanocomposites for Cd(II) removal from aqueous solutions: Performance and mechanisms of sorption Ahmed Galhoum Nuclear Materials Authority, Cairo, Egypt
D14.	Energy saving of aluminum reduction cell by improving the anode design Abdul-Majid Shamroukh , M. K. Gouda, Amr B. ElDeeb, W. Berends, W. Abdel-Fadeel, G.T. Abdel-Jaber, and S. A. Salman Egyptalum, Nag Hammadi, Qena