



THE 9TH INTERNATIONAL UNDER-GRADUATE RESEARCH CONFERENCE



CONFERENCE GUIDE

IUGRC 2025
INNOVATION HAS HISTORY

IUGRC

27 - 29 July, 2025
Cairo, Egypt 

SPONSOR



ORGANIZERS



PARTINERS



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Military Technical College



**Liaison Technical Center for
Research and Development**



The 9th International Under-Graduate Research Conference IUGRC-2025

Conference Guide

INTRODUCTION

In order to motivate the spirit of innovation and scientific research among the engineering students, the Ministry of Defense invites undergraduate students from engineering faculties/schools all over the world to demonstrate their skills, talent and innovated ideas in engineering sciences. The IUGRC activities are intended to be forum that facilitate and promote communication and cooperation among participants. Participating in this event will help you expand your knowledge, network, discuss challenges, and share ideas during technical sessions and networking breaks.

CONFERENCE GOALS

The IUGRC aims to provide undergraduate engineering students from various specializations/majors with the opportunity to present their research work on the latest engineering applications. Students at all levels of undergraduate are invited to participate to gain hands on experience. Evaluations will be based on the originality of the work presented, the quality of the analytical and experimental work as well as the level of technical presentation.

ORGANIZING COMMITTEE

| | |
|------------------------------|---|
| Chairman | Maj. Gen. Prof. Dr. Ashraf D. Elbayoumy |
| Vice Chairman | Maj. Gen. Prof. Dr. Ahmed Salah Abou El-Azm Aly |
| Dean of the College | Maj. Gen. Prof. Dr. Khaled Mahmoud Badran |
| Conference Rapporteur | Brig. Gen. Prof. Dr. Ahmed Ekhlās |
| Conf. Co-Rapporteur | Col. Dr. Ahmad Eldahshan |

STEERING COMMITTEE

Brig. Gen. Dr. Amr Saleh
Col. Dr. Ramy Mohamed
Lt. Col. Dr. Ahmed Mahrous
Lt. Col. Dr. Michael Makram
Maj. Dr. Mohamed Ghanem

TRACKS ORGANIZERS

Track 1: Mechanical Engineering

Col. Assoc. Prof. Dr. Mohamed Atef
Lt. Col. Dr. Mostafa Abdelaziz

Track 2: Electrical and Electronics Engineering

Lt. Col. Dr. Ehab Safwat
Lt. Col. Dr. Abdelrhman Marconi

Track 3: Civil & Architecture Engineering

Col. Assoc. Prof. Dr. Mohamed Zahran

Track 4: Chemistry & Environmental Engineering

Lt. Col. Dr. Moamen Galal
1st Lt. Mahmoud Abobakr Mohamed

TECHNICAL COMMITTEE

Lt. Col. Dr. Yasser Ibrahim
Cap. Eng. Ahmed Fouad
Cap. Eng. Mahmoud Gamal

EDITING COMMITTEE

Cap. Eng. Mohamed Talaat
Cap. Eng. Ahmed Nabih

| | |
|--|--|
| TRACK#1 (ME) Mechanical Engineering | Mechanical Power Engineering Robotic, Automation and Control Dynamics and Vibration Material Science and Processing Production Technology Solid Mechanics Mechanical Design Automotive Engineering Mechatronics Ballistics Acoustics and Noise Control |
| TRACK#2 (EEE) Electrical & Electronics Engineering | Communication Systems Artificial Intelligence Computer Science and Engineering Automation and Control Engineering Signal and Image Processing Guidance & Navigation Systems Radar Systems & Remote Sensing Biomedical Engineering Circuits and Systems and VLSI Design RF and wireless systems Electrical Machines and Power Electronics |
| TRACK#3 (CAE) Civil & Architecture Engineering | Concrete Structures Geotechnical Engineering Material Quality and Control Metallic Structures Project Management Sanitary Engineering Structural Analysis and Design Surveying and Photogrammetry Transportation Engineering Water Resources Engineering Architectural Engineering Building Technology Environmental Engineering Urban Planning |
| TRACK#4 (CEE) Chemistry & Environmental Engineering | Kinetics & Catalysis Transport Phenomena & Thermodynamics Electrochemical Engineering & Corrosion Chemical and Ceramic Technology Chemical Detection and Analysis Polymeric Materials Nanotechnology and Chemical applications Pollution and Environmental Protection Energetic Material Technology NBC Protection |

SUBMISSION STATUS

FULL PAPER SUBMITTED

142

ACCEPTED PAPERS

114

REJECTED PAPERS

12


WITHDRAWN PAPERS

16

UNIVERSITIES REGISTERED

18

ACCEPTED PAPERS PER AFFILIATION

| Affiliation | No of Papers |
|--|--------------|
| Military Technical College | 69 |
| Arab Academy for Science and Technology, Computing and Information Technology | 20 |
| Akhbar El-youn Academy | 4 |
| Obour High Institute for Engineering and Technology | 3 |
| Ain Shams University | 2 |
| Port Said University | 2 |
| Misr University for Science and Technology | 2 |
| Modern Academy For Engineering | 2 |
| Cairo University | 1 |
| Mansoura University | 1 |
| Future University in Egypt | 1 |
| Kafr Alsheikh University | 1 |
| Tanta University | 1 |
| Menoufia University | 1 |
| British University | 1 |
| El Shorouk Academy | 1 |
| Canadian International College CiC, New Cairo, Egypt | 1 |
| Coventry University UK  | 1 |
| Total | 114 |

CONTRIBUTORS



CONTRIBUTORS





The 9th International Undergraduate Research Conference of The Military Technical College (IUGRC-9)



| Date | Room | 8:30 to 10:00 | 10:10 to 11:25 | 11:30 to 12:45 | 12:45 13:00 | 13:00 to 14:30 |
|--------------------|-------|--|---|--|----------------|---------------------------------------|
| Sunday 27 July | PG-A | Registration (Postgraduate Building) | Invited Talk (1) | Invited Talk (2) | Coffee break | ---- |
| | PG-9 | | أ.د /محمد أبوسريع عوف أستاذ الهندسة الطبية المعهد التكنولوجى العالى العاشر من رمضان تصميم الروبوتات | عقيد أ.م.د/ محمود كارم رئيس قسم تخطيط التعليم بالكلية الفنية العسكرية طرق إستخدام أدوات الذكاء الاصطناعى لتحسين مخرجات البحث الأكاديمى | | EEE - Automation & Control Eng. (5) |
| | PG-11 | | | | | EEE Biomedical Engineering (6) |
| | PG-12 | | | | | ----- |
| | PG-13 | | | | | ME - Mechatronics and Robotics (7) |
| | PG-4 | | | | | CAE - Architecture Engineering (2) |
| | PG-8 | | | | | ----- |
| Monday 28 July | PG-A | ---- | Invited Talk (3) | Invited Talk (4) | | ----- |
| | PG-9 | EEE - Computer Science and Eng. (6) | م/طارق محفوظ مؤسسة هواوى حواس المدن الذكية ودعم اتخاذ القرار | د/ أشرف طلعت Leica Geosystems Company المسح الضوئى ثلاثى الأبعاد فى التطبيقات الهندسية | | EEE - Signal and Image Processing (6) |
| | PG-11 | EEE - Electronics and Electronic Syst. (6) | | | | EEE - Artificial Intelligence I (7) |
| | PG-12 | ME - Automotive Engineering I (6) | | | | ME - Ballistics (3) |
| | PG-13 | ME - Dynamics and Vibration (6) | | | | ----- |
| | PG-4 | CAE - Civil Engineering I (6) | | | | ----- |
| | PG-8 | CEE - NBC Protection (4) | | | | ----- |
| Tuesday 29 July | PG-A | ---- | Invited Talk (5) | Invited Talk (6) | | ---- |
| | PG-9 | EEE - Artificial Intelligence II (6) | أ/ حسام كامل سعد خبير التنمية البشرية سلسلة النجاح | عميد أ.م.د/ تامر زكريا رئيس شعبة الهندسة الكيميائية والنووية بالكلية الفنية العسكرية دور وأهداف التنمية المستدامة والتفكير التداخلى متعدد التخصصات فى تطوير برنامج الدراسات الهندسية والتكنولوجية | | EEE - Communication Systems (6) |
| | PG-11 | EEE - Data Comm. and Security (7) | | | | ---- |
| | PG-12 | ME - Mechanical Power Eng. I (4) | | | | ---- |
| | PG-13 | ME - Automotive Eng. and Mech. Equip. (6) | | | | ME - Mechanical Power Eng. II (4) |
| | PG-4 | CAE - Civil Engineering II (6) | | | | ----- |
| | PG-8 | CEE – Nanotech. and Chemical App. (5) | | | | ----- |

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The 9th International Under-Graduate Research Conference IUGRC-2025

Conference Invited Talk

INVITED TALK IUGRC-9



أستاذ دكتور محمد أبو سرير عوف

- دكتوراه الهندسة الطبية الحيوية و المنظومات جامعة القاهرة
- أستاذ مساعد الهندسة الطبية - المعهد التكنولوجي العالي العاشر من رمضان
- رئيس مجلس قسم الهندسة الطبية سابقا

محاضرة بعنوان تصميم الروبوتات



INVITED TALK IUGRC-9



عقيد أ.م.د. محمود كاره

- حاصل على درجة الدكتوراه في الهندسة الكهربائية من جامعة فيكتوريا بكندا عام 2017.
- رئيس قسم الامتحانات بالكلية في الفترة من 2021 حتى 2023.
- رئيس قسم تخطيط التعليم منذ عام 2024 وحتى الآن.
- حصل على درجة IEEE Senior Member في عام 2025، تقديرا لمساهماته العلمية والمهنية في مجال الهندسة.

محاضرة بعنوان طرق إستخدام أدوات الذكاء الاصطناعي لتحسين مخرجات البحث الأكاديمي



INVITED TALK IUGRC-9



مهندس طارق محفوظ

- مدير تنفيذي بالقطاع المؤسسي بشركة هواوي مصر.
- تطوير حلول تكنولوجيا المعلومات، الحوسبة السحابية، الذكاء الاصطناعي، والمدن الذكية

محاضرة بعنوان حواس المدن الذكية ودعم اتخاذ القرار



INVITED TALK IUGRC-9



**أ.م.د.
أشرف طلعت**

- أستاذ مساعد - كلية الهندسة جامعة أسوان.
- باحث - جامعة شنتوتجارت - ألمانيا.
- استشاري GPS المساحة.
- خبير في تقنية الرصد ثلاثي الأبعاد ليزر سكان والتوأمة الرقمية لمشروعات في مصر - ألمانيا - السعودية.
- وكيل لشركة لايفا جيو سيستمز في مصر في تقنيات الليزر سكان.

**محاضرة بعنوان
المسح الضوئي ثلاثي الأبعاد في التطبيقات الهندسية**



INVITED TALK IUGRC-9



**أستاذ
حسام كامل سعد**

- استشاري الموارد البشرية في العديد من الشركات الدولية والمحلية.
- خبير في علم التنمية البشرية.
- خبير في مجالات علم المشورة ووسائل الاتصال الفعال والقيادة وحل المشكلات.
- حاصل علي دبلومة Human Resources Management من الجامعة الأمريكية.

**محاضرة بعنوان
سلسلة النجاح**



INVITED TALK IUGRC-9



**عميد أ.م.د.
تامر زكريا وافي**

- أستاذ مساعد دكتور في الهندسة الكيميائية
- رئيس شعبة الهندسة الكيميائية والنووية بالكلية الفنية العسكرية
- حاصل على درجة الدكتوراة في المواد النانومترية من جامعة مانشستر / المملكة المتحدة
- حاصل على دبلوم في الإدارة الهندسية من الجامعة الأمريكية / القاهرة
- حاصل على دورة كبير مراجعي جودة

**محاضرة بعنوان
دور وأهداف التنمية المستدامة والتفكير التداخلي متعدد التخصصات في تطوير برنامج
الدراسات الهندسية والتكنولوجية**





The 9th International Under-Graduate Research Conference IUGRC-2025

Conference Sessions

TRACK 1: MECHANICAL ENGINEERING

Editors: Col. Assoc. Prof. Dr. Mohamed Atef Kamel

Lt. Col. Dr. Mostafa Abdelaziz

SESSION NO.1 SUN (MECH)

Mechatronics and Robotics

Session Info:

| | |
|------------------|--------------------|
| Location: | ROOM – PG13 |
| Date: | Sunday 27/7/2025 |
| Time: | 1300:1445 |
| Track: | MECHANICAL |

Board:

| | | |
|------------|-------------|----------------------------|
| Dr. | Ehab Saeed | Military Technical College |
| Dr. | Tamer Saeed | Military Technical College |

Session Papers:

| | | | |
|------------|--------------|---------------------|---|
| 1089-IUGRC | 1300 1315 | Title: | Ball Balancing Robot Based on 3RRS Parallel Manipulator |
| | | Presenter: | Ali Eslam Ezzat |
| | | Affiliation: | Military Technical College |
| 1082-IUGRC | 1315 1330 | Title: | From Mapping to Sorting: A Fully Custom ROS 2 Mobile Robot with Dijkstra/TEB Path Planning and YOLO v5 Vision |
| | | Presenter: | Ahmad Mohsen |
| | | Affiliation: | Arab Academy for Science and Technology and Maritime Transport |
| 1085-IUGRC | 1330 1345 | Title: | A Knee Exoskeleton Robot for Medical Purposes |
| | | Presenter: | Mohamed Emad Soliman |
| | | Affiliation: | Arab Academy for Science and Technology and Maritime Transport |
| 1081-IUGRC | 1345 1400 | Title: | Development of an Advanced Driving Assistance Systems Using AI Techniques |
| | | Presenter: | Kerolos Domadyos Salib |
| | | Affiliation: | Arab Academy for Science and Technology and Maritime Transport |
| 1104-IUGRC | 1400 1415 | Title: | Design and Implementation of a Remote-Controlled Surgical Robot Using Virtual Reality and IoT Technologies. |
| | | Presenter: | Sameh Mohamed |
| | | Affiliation: | Arab Academy for Science and Technology and Maritime Transport |
| 1115-IUGRC | 1415 1430 | Title: | Design and control of Arm exoskeleton robot paper |
| | | Presenter: | Adham Omar |
| | | Affiliation: | Arab Academy for Science and Technology and Maritime Transport |
| 1087-IUGRC | 1430 1445 | Title: | Autonomous Hexapod Robot for Environmental and Safety Applications |
| | | Presenter: | Maha Yasser |
| | | Affiliation: | Arab Academy for Science, Technology & Maritime Transport |

TRACK 1: MECHANICAL ENGINEERING

Editors: Col. Assoc. Prof. Dr. Mohamed Atef Kamel

Lt. Col. Dr. Mostafa Abdelaziz

SESSION NO.2 MON (MECH)

Automotive Engineering I

Session Info:

| | |
|------------------|--------------------|
| Location: | ROOM – PG12 |
| Date: | Monday 28/7/2025 |
| Time: | 0830:1015 |
| Track: | MECHANICAL |

Board:

| | | |
|-------------------------|---------------|----------------------------|
| Prof. Dr. | Shawky Hegazy | Military Technical College |
| Assoc. Prof. Dr. | Ahmed Ali | Military Technical College |

Session Papers:

| | | | |
|------------|--------------|---------------------|--|
| 1002-IUGRC | 0830 0845 | Title: | Design of Powertrain for a Light Military Vehicle |
| | | Presenter: | Samir Ibrahim Hassan |
| | | Affiliation: | Military Technical College |
| 1004-IUGRC | 0845 0900 | Title: | Design of a Lightweight Vehicle Structure for Reconnaissance |
| | | Presenter: | Tawfek Mohamed El Merkhmaty |
| | | Affiliation: | Military Technical College |
| 1015-IUGRC | 0900 0915 | Title: | Design of Vehicle Body Using Artificial Intelligence |
| | | Presenter: | Ahmed Mohammed Akl |
| | | Affiliation: | Military Technical College |
| 1016-IUGRC | 0915 0930 | Title: | Material Selection and Manufacturing of Military Vehicles |
| | | Presenter: | Mahmoud Hassan Mohamed Farag |
| | | Affiliation: | Military Technical College |
| 1017-IUGRC | 0930 0945 | Title: | Design of a Human Dummy for Vehicle Ergonomics |
| | | Presenter: | Amr Yasser Fathi |
| | | Affiliation: | Military Technical College |
| 1018-IUGRC | 0945 1000 | Title: | Study of Aerodynamic Resistance of Automobiles |
| | | Presenter: | Ahmed Ibrahim Hosni |
| | | Affiliation: | Military Technical College |

TRACK 1: MECHANICAL ENGINEERING

Editors: Col. Assoc. Prof. Dr. Mohamed Atef Kamel

Lt. Col. Dr. Mostafa Abdelaziz

SESSION NO.3 MON (MECH) DYNAMICS AND VIBRATION

Session Info:

| | |
|------------------|--------------------|
| Location: | ROOM – PG13 |
| Date: | Monday 28/7/2025 |
| Time: | 0830:1000 |
| Track: | MECHANICAL |

Board:

| | | |
|-------------------------|-------------------|----------------------------|
| Assoc. Prof. Dr. | Amgad Kamel Salem | Military Technical College |
| Dr. | Wael Galal Kotb | Military Technical College |

Session Papers:

| | | | |
|------------|--------------|---------------------|---|
| 1050-IUGRC | 0830 0845 | Title: | Evaluation of the Dynamic Performance of Off-Road Heavy Tracked Vehicles |
| | | Presenter: | Mahmoud Talaa |
| | | Affiliation: | Military Technical College |
| 1068-IUGRC | 0845 0900 | Title: | Improvement the Dynamic Performance of Tank M60 Through Increasing Engine Power |
| | | Presenter: | Shady Ashraf Mohamed |
| | | Affiliation: | Military Technical College |
| 1069-IUGRC | 0900 0915 | Title: | Design of a Lower Limb Military Exoskeleton with Adaptive Stiffness Using Shape-Memory Alloys for Enhanced Mobility and Injury Reduction |
| | | Presenter: | Ali Mohamed Elgohary |
| | | Affiliation: | Tanta University |
| 1125-IUGRC | 0915 0930 | Title: | Hydrodynamic Simulation of a Single Box Structure and Comparison of the Effect of Addition of a Platform Structure |
| | | Presenter: | Mohamed Alaa Azouz |
| | | Affiliation: | Military Technical College |
| 1014-IUGRC | 0930 0945 | Title: | A Reverse Engineering-Based Methodology for Critical Component Redesign: Case Study of APC M113 Tracked Vehicle's Engine Blower Drive Shaft |
| | | Presenter: | Cyprian Christopher Mwita |
| | | Affiliation: | Military Technical College |
| 1073-IUGRC | 0945 1000 | Title: | Design of A Critical Component of Tracked Vehicle |
| | | Presenter: | Mohamed Osama Salim |
| | | Affiliation: | Military Technical College |

TRACK 1: MECHANICAL ENGINEERING

Editors: Col. Assoc. Prof. Dr. Mohamed Atef Kamel

Lt. Col. Dr. Mostafa Abdelaziz

SESSION NO.4 MON (MECH) BALLISTICS

Session Info:

| | |
|------------------|--------------------|
| Location: | ROOM – PG12 |
| Date: | Monday 28/7/2025 |
| Time: | 1300:1430 |
| Track: | MECHANICAL |

Board:

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| Prof. Dr. | Ahmed Zaki | Military Technical College |
| Dr. | Mohamed Abdelkader | Military Technical College |

Session Papers:

| | | | |
|------------|--------------|---------------------|---|
| 1075-IUGRC | 1300 1320 | Title: | Calculations of Forces Due to Firing of 130mm M-46 Field Gun |
| | | Presenter: | Ahmed Mohamed Moussa |
| | | Affiliation: | Military Technical College |
| 1095-IUGRC | 1320 1340 | Title: | Preliminary Mechanical Design and Servomotor Dimensioning of a Six-Barrelled Gatling Mini-Gun |
| | | Presenter: | Yousef Hossam Ibrahim |
| | | Affiliation: | Military Technical College |
| 1096-IUGRC | 1340 1400 | Title: | Design of a New Caliber PDW Pistol Sub-Machine Gun (5.56x23) mm |
| | | Presenter: | MOHAMED MOSTAFA HASSAN |
| | | Affiliation: | Military Technical College |

TRACK 1: MECHANICAL ENGINEERING

Editors: Col. Assoc. Prof. Dr. Mohamed Atef Kamel

Lt. Col. Dr. Mostafa Abdelaziz

SESSION NO.5 TUE (MECH)

AUTOMOTIVE ENG. AND MECHANICAL EQUIPMENT

Session Info:

| | |
|------------------|--------------------|
| Location: | ROOM – PG13 |
| Date: | Tuesday 29/7/2025 |
| Time: | 0830:1000 |
| Track: | MECHANICAL |

Board:

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|------------|-------------------------|----------------------------|
| Dr. | Amr Abdelaziz | Military Technical College |
| Dr. | Khaled A. Ghamry | Military Technical College |

Session Papers:

| | | | |
|-------------------|----------------------|---------------------|--|
| 1023-IUGRC | 0830 0845 | Title: | Design And Development of Buried Explosives Inspection Equipment |
| | | Presenter: | Mohamed Mamdouh |
| | | Affiliation: | Military Technical College |
| 1024-IUGRC | 0845 0900 | Title: | Design Of Gantry Crane |
| | | Presenter: | Ahmed Nofal |
| | | Affiliation: | Military Technical College |
| 1025-IUGRC | 0900 0915 | Title: | Design and Implementation of Hydraulic Elevator |
| | | Presenter: | Mohammed Abdallah |
| | | Affiliation: | Military Technical College |
| 1026-IUGRC | 0915 0930 | Title: | Development and Modification of Advanced Construction Equipment Fleet Management (ACEFM) Software |
| | | Presenter: | Abdul-Rahman Abdullua |
| | | Affiliation: | Military Technical College |
| 1027-IUGRC | 0930 0945 | Title: | Design of Loader Upper-Structure |
| | | Presenter: | Andrew Maged |
| | | Affiliation: | Military Technical College |
| 1163-IUGRC | 0945 1000 | Title: | Active Suspension Control using AI |
| | | Presenter: | Hazem Nouh |
| | | Affiliation: | Ain Shams University |

TRACK 1: MECHANICAL ENGINEERING

Editors: Col. Assoc. Prof. Dr. Mohamed Atef Kamel

Lt. Col. Dr. Mostafa Abdelaziz

SESSION NO.6 TUE (MECH)

MECHANICAL POWER ENGINEERING I

Session Info:

| | |
|------------------|--------------------|
| Location: | ROOM – PG12 |
| Date: | Tuesday 29/7/2025 |
| Time: | 0830:0945 |
| Track: | MECHANICAL |

Board:

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|-------------------------|-------------------------|-----------------------------------|
| Assoc. Prof. Dr. | Mohamed Amil | Military Technical College |
| Dr. | Salaheldin Ahmed | Military Technical College |

Session Papers:

| | | | |
|-------------------|----------------------|---------------------|---|
| 1032-IUGRC | 0830 0850 | Title: | Design and Manufacturing of Hydrokinetic Turbines for Electricity Production |
| | | Presenter: | Ahmed ElSharaby |
| | | Affiliation: | MISR University for Science Technology |
| 1048-IUGRC | 0850 0910 | Title: | PCM for Low Temperature Energy Storage System: Selection and Sizing |
| | | Presenter: | Ahmed Nasser |
| | | Affiliation: | Military Technical College |
| 1049-IUGRC | 0910 0930 | Title: | Design of a Solar Driven Organic Rankine Cycle |
| | | Presenter: | Moustafa Mahmoud Elqot |
| | | Affiliation: | Military Technical College |
| 1061-IUGRC | 0930 0945 | Title: | Solar Thermal Collector: Types and Applications |
| | | Presenter: | Abdelatif Elsayad |
| | | Affiliation: | Military Technical College |

TRACK 1: MECHANICAL ENGINEERING

Editors: Col. Assoc. Prof. Dr. Mohamed Atef Kamel

Lt. Col. Dr. Mostafa Abdelaziz

SESSION NO.7 TUE (MECH)

MECHANICAL POWER ENGINEERING II

Session Info:

| | |
|------------------|--------------------|
| Location: | ROOM – PG13 |
| Date: | Tuesday 29/7/2025 |
| Time: | 1300:1430 |
| Track: | MECHANICAL |

Board:

| | | |
|-------------------------|-----------------------|-----------------------------------|
| Prof. Dr. | Ahmed Rashad | Military Technical College |
| Assoc. Prof. Dr. | Ahmed Elwetidy | Military Technical College |

Session Papers:

| | | | |
|-------------------|----------------------|---------------------|--|
| 1072-IUGRC | 1300 1320 | Title: | Propeller Performance analysis using Unified Rotor Lifting Line Theory and CFD |
| | | Presenter: | Sayed Mahmoud Mohamed Alsharawy |
| | | Affiliation: | Military Technical College |
| 1102-IUGRC | 1320 1340 | Title: | Optimizing Hybrid Solar-Wind Energy Systems for Green Buildings in Urban Environments |
| | | Presenter: | Ahmed Magdy |
| | | Affiliation: | Arab Academy for Science, Technology and Maritime Transport |
| 1153-IUGRC | 1340 1400 | Title: | Effect of Operating Conditions on the Performance and Sizing of PEM Fuel Cell that Powers an Autonomous Underwater Vehicle |
| | | Presenter: | Muhannd Haitham Abd El-Gawad |
| | | Affiliation: | Military Technical College |
| 1165-IUGRC | 1400 1420 | Title: | Experimental Performance of a Water Desalination System Driven by Heat Rejected from Air Conditioner and Solar Energy |
| | | Presenter: | Mostafa Mohamed Hamid |
| | | Affiliation: | Arab Academy for Science, Technology and Maritime Transport |

TRACK 2: ELECTRICAL AND ELECTRONICS ENGINEERING

Editors: Lt.Col. Dr. Ehab Safwat

Lt.Col. Dr. Abdelrhman Marconi

SESSION NO.1 SUN-01 (ELEC) AUTOMATION AND CONTROL ENGINEERING

Session Info:

| | |
|------------------|---|
| Location: | ROOM-PG9 |
| Date: | Sunday 27/7/2025 |
| Time: | 1300 - 1430 |
| Track: | Electrical & Electronics Engineering |

Board:

| | | |
|------------|-----------------------------|------------------------------------|
| Dr. | Mohammed Korany | Military Technical College |
| Dr. | Ahmed Mohamed Esmail | Egyptian Chinese University |

Session Papers:

| | | | |
|-------------------|--------------------|---------------------|---|
| 1145-IUGRC | 1300 - 1315 | Title: | Calibration and modeling of IMU using LSTM model |
| | | Presenter: | Islam Gad-Elrab |
| | | Affiliation: | Military Technical College |
| 1071-IUGRC | 1315 - 1330 | Title: | Design and Implementation of a Remote-Controlled Surgical Robot Using Virtual Reality and IoT Technologies |
| | | Presenter: | Sameh Mohamed |
| | | Affiliation: | Arab Academy for Science, Technology and Maritime Transport, Aswan, Egypt |
| 1021-IUGRC | 1330 - 1345 | Title: | Radio Direction Finder |
| | | Presenter: | Bassel Zagloul |
| | | Affiliation: | Military Technical College |
| 1171-IUGRC | 1345- 1400 | Title: | Root locus-based PID control design for a non-ideal Buck Converter in a UAV Power Distribution Unit |
| | | Presenter: | Amr Sarhan |
| | | Affiliation: | Military Technical College |
| 1144-IUGRC | 1400- 1415 | Title: | Modelling of CubeSat Attitude Determination and Control Subsystem |
| | | Presenter: | Mohamed Kassem |
| | | Affiliation: | Military Technical College |

TRACK 2: ELECTRICAL AND ELECTRONICS ENGINEERING

Editors: Lt.Col. Dr. Ehab Safwat

Lt.Col. Dr. Abdelrhman Marconi

SESSION NO.2 SUN-02 (ELEC) BIOMEDICAL ENGINEERING

Session Info:

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|------------------|---|
| Location: | ROOM-PG11 |
| Date: | Sunday 27/7/2025 |
| Time: | 1300 - 1430 |
| Track: | Electrical & Electronics Engineering |

Board:

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| Assoc. Prof. Dr. | Ramy Yahya | Military Technical College |
| Dr. | Mohamed Elhoseny | Military Technical College |

Session Papers:

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|-------------------|--------------------|---------------------|---|
| 1067-IUGRC | 1300 - 1315 | Title: | Enhancing Doctor Capabilities with AI-Powered Surgical Simulation |
| | | Presenter: | Hassan Mohamed Hassan |
| | | Affiliation: | Military Technical College |
| 1092-IUGRC | 1315 - 1330 | Title: | Brain Tumor segmentation and localization with 3D construction |
| | | Presenter: | Islam Mohamed |
| | | Affiliation: | Modern Academy |
| 1098-IUGRC | 1330 - 1345 | Title: | Enhancing Patient Care through MediPulse: A Scalable Web and Mobile Health Solution |
| | | Presenter: | Mohamed El-mahy |
| | | Affiliation: | Akhbar El-youm Academy |
| 1045-IUGRC | 1345- 1400 | Title: | Smart Helmet System for Industrial Safety Using IoT-Based Sensor Fusion and Real-Time Data Visualization |
| | | Presenter: | Mohamed Tharwat |
| | | Affiliation: | Misr University for Science & Technology |
| 1116-IUGRC | 1400- 1415 | Title: | Real-Time Physiological Monitoring of Drivers on the Road |
| | | Presenter: | Nouran Elbalkimy |
| | | Affiliation: | Future University in Egypt |
| 1126-IUGRC | 1415- 1430 | Title: | Two-Stage Efficient Net-Based Classification of Stroke and Hemorrhage Subtypes on Brain CT |
| | | Presenter: | Ahmed El-kholy |
| | | Affiliation: | Military Technical College |

TRACK 2: ELECTRICAL AND ELECTRONICS ENGINEERING

Editors: Lt.Col. Dr. Ehab Safwat

Lt.Col. Dr. Abdelrhman Marconi

SESSION NO.3 MON-01 (ELEC) ELECTRONICS AND ELECTRONIC SYSTEMS

Session Info:

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|------------------|---|
| Location: | ROOM-PG11 |
| Date: | Monday 28/7/2025 |
| Time: | 0830:1000 |
| Track: | Electrical & Electronics Engineering |

Board:

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| Assoc. Prof. Dr. | Mohammed Aboziad | Military Technical College |
| Dr. | Mohamed Hosny Elsaïd | Military Technical College |

Session Papers:

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|-------------------|-------------------|---------------------|---|
| 1020-IUGRC | 830 - 845 | Title: | Design of a Cost-Effective Educational Unit to Enhance the Practical Skills of Electrical and Electronics Engineering Students |
| | | Presenter: | Khalid Goher |
| | | Affiliation: | Kafr El-Sheikh University |
| 1036-IUGRC | 845 - 900 | Title: | Robotic Hand Controlled by Gloves with Hand-made Sensors or Computer Vision |
| | | Presenter: | Mahmoud Shawki |
| | | Affiliation: | Obour High Institute for Engineering and Technology, Egypt |
| 1070-IUGRC | 900 - 915 | Title: | Smart CNC Machine: Custom-Built with Wireless Control and Vision-Based Adaptation |
| | | Presenter: | Ziad Ashraf Farouk |
| | | Affiliation: | Obour High Institute for Engineering & Technology |
| 1076-IUGRC | 915- 930 | Title: | Talking Hand, Smart aid for Deafness and muteness |
| | | Presenter: | Sara Kamal Awed |
| | | Affiliation: | Akhbar El-youn Academy |
| 1080-IUGRC | 930- 945 | Title: | Remotely Controlled Car with Advanced Driver Assistance Systems Features (RC Car with ADAS Features) |
| | | Presenter: | Karim Abd El Rahman |
| | | Affiliation: | Faculty of Computer and Information Sciences, Ain Shams University |
| 1148-IUGRC | 945 – 1000 | Title: | Low-Cost Conversion of Manual Wheelchairs to Electric Using Arduino-Based Control Systems |
| | | Presenter: | Basem Kamel |
| | | Affiliation: | Port Said University |

TRACK 2: ELECTRICAL AND ELECTRONICS ENGINEERING

Editors: Lt.Col. Dr. Ehab Safwat

Lt.Col. Dr. Abdelrhman Marconi

SESSION NO.4 MON-02 (ELEC) COMPUTER SCIENCE AND ENGINEERING

Session Info:

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|------------------|---|
| Location: | ROOM-PG9 |
| Date: | Monday 28/7/2025 |
| Time: | 0830:1000 |
| Track: | Electrical & Electronics Engineering |

Board:

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| Dr. | Mhamed Hussien Abdelwhab | Military Technical College |
| Dr. | Mohamed Kamel Elhadad | Military Technical College |

Session Papers:

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|-------------------|-------------------|---------------------|--|
| 1037-IUGRC | 830 - 845 | Title: | Project O.R.A.C.L.E.: A Visionary Framework for Post-Quantum Adaptive Cyber Defense with Modular AI Ethics and Quantum Identity Control |
| | | Presenter: | Youssef Elsaed |
| | | Affiliation: | Arab Academy for Science, Technology & Maritime Transport |
| 1040-IUGRC | 845 - 900 | Title: | Trojan-based Cryptojacking Malware |
| | | Presenter: | Omar Donia |
| | | Affiliation: | Arab Academy for Science, Technology & Maritime Transport |
| 1042-IUGRC | 900 - 915 | Title: | AUTOMATED WINDOWS FORENSIC ARTIFACT EXTRACTION USING ZIMMERMAN'S TOOLSET: FROM COLLECTION TO REPORT |
| | | Presenter: | Nour Mahmoud |
| | | Affiliation: | Computing and Information Technology college , AAST |
| 1172-IUGRC | 915- 930 | Title: | Real time digital transceiver based on GNU radio |
| | | Presenter: | Youssef Shehab |
| | | Affiliation: | Military Technical College |
| 1041-IUGRC | 930- 945 | Title: | Tracing the Invisible: Detecting DLL Hijacking through Memory Forensics and Machine Learning |
| | | Presenter: | Hala Abdelrahman |
| | | Affiliation: | |
| 1173-IUGRC | 945 – 1000 | Title: | Design and Simulation of a Client-Server Keystroke Logging System Using Python |
| | | Presenter: | Dr./Ahmed Maher Matter |
| | | Affiliation: | Military Technical College |

TRACK 2: ELECTRICAL AND ELECTRONICS ENGINEERING

Editors: Lt.Col. Dr. Ehab Safwat

Lt.Col. Dr. Abdelrhman Marconi

SESSION NO.5 MON-03 (ELEC) SIGNAL AND IMAGE PROCESSING

Session Info:

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|------------------|---|
| Location: | ROOM-PG9 |
| Date: | Monday 28/7/2025 |
| Time: | 1300 - 1430 |
| Track: | Electrical & Electronics Engineering |

Board:

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| Dr. | Ahmed Foad | Military Technical College |
| Dr. | Sherif Hassan | Military Technical College |

Session Papers:

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|-------------------|--------------------|---------------------|--|
| 1127-IUGRC | 1300 - 1315 | Title: | TRADE-OFF ANALYSIS OF DEPENDENT DESIGN PARAMETERS OF SATELLITE PASSIVE REMOTE SENSORS BASED ON SIGNAL-TO-NOISE RATIO CALCULATIONS |
| | | Presenter: | Belal Hassan |
| | | Affiliation: | |
| 1130-IUGRC | 1315 - 1330 | Title: | Passive Sonar System for Direction-of-Arrival Detection Using the MVDR Technique |
| | | Presenter: | Mohamed Oda |
| | | Affiliation: | Military Technical College |
| 1034-IUGRC | 1330 - 1345 | Title: | Direction of Arrival Estimation Enhancement under low SNR |
| | | Presenter: | Mostafa El-mujahid |
| | | Affiliation: | Military Technical College |
| 1097-IUGRC | 1345- 1400 | Title: | Direction of Arrival Estimation Enhancement in Dense of Environment |
| | | Presenter: | Mostafa Meghed |
| | | Affiliation: | Military Technical College |
| 1065-IUGRC | 1400- 1415 | Title: | Findy Indoor Positioning System by BLE Beacons |
| | | Presenter: | Ziad Fathy |
| | | Affiliation: | Canadian International College |
| 1022-IUGRC | 1415- 1430 | Title: | Preliminary Design and Implementation of an Unmanned Aerial Vehicle Detection, Tracking, and Jamming System |
| | | Presenter: | Hazem Hassan |
| | | Affiliation: | Modern Academy For Engineering & technology |

TRACK 2: ELECTRICAL AND ELECTRONICS ENGINEERING

Editors: Lt.Col. Dr. Ehab Safwat

Lt.Col. Dr. Abdelrhman Marconi

SESSION NO.6 MON-04 (ELEC) ARTIFICIAL INTELLIGENCE I

Session Info:

| | |
|------------------|---|
| Location: | ROOM-PG11 |
| Date: | Monday 28/7/2025 |
| Time: | 1300 - 1430 |
| Track: | Electrical & Electronics Engineering |

Board:

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| Dr. | Mohamed Kamel Elhadad | Military Technical College |
| Dr. | Ahmed Awadlla | Military Technical College |

Session Papers:

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|-------------------|--------------------|---------------------|--|
| 1074-IUGRC | 1300 - 1315 | Title: | Design and Implementation of AI Based Application for Skin Diseases Detection and Classification |
| | | Presenter: | Youssef Abdoulgaleel |
| | | Affiliation: | Military Technical College |
| 1077-IUGRC | 1315 - 1330 | Title: | Next-Gen Smart Ports: Leveraging AI, Embedded Systems, and Blockchain for a Sustainable Future |
| | | Presenter: | Ali Hemaya |
| | | Affiliation: | Port Said University |
| 1088-IUGRC | 1345- 1400 | Title: | Intelligent Assistant to Reduce Digital Distraction among Generation Z: A Holistic, Interactive Model for Productivity and Well-Being |
| | | Presenter: | Mohamed El-mahy |
| | | Affiliation: | Akhbar El-youm Academy |
| 1091-IUGRC | 1400- 1415 | Title: | AI- based Intrusion detection system for SQLI/XSS attempts detection |
| | | Presenter: | Ali Abdelaleem |
| | | Affiliation: | Arab Academy for Science, Technology and Maritime Transport |
| 1169-IUGRC | 1415- 1430 | Title: | Machine Learning for Precise Wireless Interference Detection |
| | | Presenter: | Mohamed Naguib |
| | | Affiliation: | Military Technical College |
| 1055-IUGRC | 1430-1445 | Title: | SecureTalkAnalyzer: Bilingual AI for Detecting Social Engineering in Text and Documents |
| | | Presenter: | Jana Wael AL-araby |
| | | Affiliation: | Academy For Science Technology and Maritime Transport |
| 1137-IUGRC | 1445-1500 | Title: | Arabic Text Recognition from Natural Scene Images Using Artificial Intelligence |
| | | Presenter: | Dr. Gouda Salama |
| | | Affiliation: | Military Technical College |

TRACK 2: ELECTRICAL AND ELECTRONICS ENGINEERING

Editors: Lt.Col. Dr. Ehab Safwat

Lt.Col. Dr. Abdelrhman Marconi

SESSION NO.7 TUE-01 (ELEC) ARTIFICIAL INTELLIGENCE II

Session Info:

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|------------------|---|
| Location: | ROOM-PG9 |
| Date: | Tuesday 29/7/2025 |
| Time: | 0830:1000 |
| Track: | Electrical & Electronics Engineering |

Board:

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| Ass. Prof. .Dr. | Sherif Morsy | Military Technical College |
| Dr. | Ahmed Awadalla | Military Technical College |

Session Papers:

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|-------------------|-------------------|---------------------|--|
| 1009-IUGRC | 830 - 845 | Title: | An AI-based adaptive headlight control system integrating YOLO, LiDAR, and V2V communication |
| | | Presenter: | Abdallah Hossam |
| | | Affiliation: | Obour High Institute for Engineering and Technology |
| 1039-IUGRC | 845 - 900 | Title: | Registry Intelligence: AI-Driven Forensic Threat Detection Using Windows Registry Analysis |
| | | Presenter: | Omar Donia |
| | | Affiliation: | Arab Academy for Science, Technology and Maritime Transport |
| 1094-IUGRC | 900 - 915 | Title: | PickPay: Integrating Voice and Semantic AI Search into Modern E-Commerce Platforms |
| | | Presenter: | Mohamed El-Mahy |
| | | Affiliation: | Akhbar El-youm Academy |
| 1058-IUGRC | 915- 930 | Title: | Triple-Threat Defense: Machine Learning-Based Intrusion Detection Across NSL-KDD, UNSW-NB15, and CIC-IDS-17 |
| | | Presenter: | Ahmed Eissa |
| | | Affiliation: | Military Technical College |
| 1122-IUGRC | 930- 945 | Title: | Beyond the Keyboard: Ethical Hacking Through Keylogger Design and Malware Analysis |
| | | Presenter: | Eyad Mazhar |
| | | Affiliation: | Arab Academy for Science, Technology and Maritime Transport |
| 1156-IUGRC | 945 – 1000 | Title: | Machine Learning-Based Empirical Indoor Propagation Modeling for WiFi Services |
| | | Presenter: | Amr Soliman |
| | | Affiliation: | Military Technical College |
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TRACK 2: ELECTRICAL AND ELECTRONICS ENGINEERING

Editors: Lt.Col. Dr. Ehab Safwat

Lt.Col. Dr. Abdelrhman Marconi

SESSION NO.8 TUE-02 (ELEC)

DATA COMMUNICATION AND SECURITY

Session Info:

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|------------------|---|
| Location: | ROOM-PG11 |
| Date: | Tuesday 29/7/2025 |
| Time: | 0830:1000 |
| Track: | Electrical & Electronics Engineering |

Board:

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| Assoc. Prof. Dr. | Ahmed Azoz | Military Technical College |
| Dr. | Tamer Nabil | Military Technical College |

Session Papers:

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|-------------------|--------------------|---------------------|--|
| 1008-IUGRC | 830 - 845 | Title: | Performance of 5G NR for Vehicle-to-Everything Communications |
| | | Presenter: | Mohamed Reda |
| | | Affiliation: | Military Technical College |
| 1084-IUGRC | 845 - 900 | Title: | Energy-Efficient and Adaptive Resource Allocation in 5G Vehicular and Edge Computing Networks |
| | | Presenter: | Mohamed Salah |
| | | Affiliation: | Faculty of engineering Mansoura university |
| 1117-IUGRC | 900 - 915 | Title: | ExeRay: A Lightweight, High-Confidence Classifier for Windows Malware (New Paper) |
| | | Presenter: | Mohamed Ali |
| | | Affiliation: | Arab Academy for Science, Technology and Maritime Transport |
| 1143-IUGRC | 915- 930 | Title: | Secure IoT Communication for Smart Energy Monitoring |
| | | Presenter: | Mohamed El-Shaarawy |
| | | Affiliation: | Military Technical College |
| 1057-IUGRC | 930- 945 | Title: | Network Traffic Intrusion Detection (PCAP Analysis) |
| | | Presenter: | Eyad Mazhar |
| | | Affiliation: | Arab Academy for Science, Technology and Maritime Transport |
| 1133-IUGRC | 945 – 1000 | Title: | Coverage Optimization of Radar Installations in Areas with Irregular Terrain Features |
| | | Presenter: | Mohammed Mohammed Rageb |
| | | Affiliation: | Military Technical College |
| 1031-IUGRC | 1000 - 1015 | Title: | Design of an Efficient Harmonic-Tuned Broadband Doherty Power Amplifier |
| | | Presenter: | Omar Eltager |
| | | Affiliation: | Military Technical College |

TRACK 2: ELECTRICAL AND ELECTRONICS ENGINEERING

Editors: Lt.Col. Dr. Ehab Safwat

Lt.Col. Dr. Abdelrhman Marconi

SESSION NO.9 TUE-03 (ELEC) COMMUNICATION SYSTEMS

Session Info:

| | |
|-----------|--------------------------------------|
| Location: | ROOM-PG9 |
| Date: | Tuesday 29/7/2025 |
| Time: | 1300 - 1430 |
| Track: | Electrical & Electronics Engineering |

Board:

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| Dr. | Ahmed Fathy | Military Technical College |
| Dr. | Mohamed Nagieb | Military Technical College |

Session Papers:

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|------------|-------------|--------------|--|
| 1164-IUGRC | 1300 - 1315 | Title: | Automatic Modulation Classification of communication Signals for Radio Monitoring Applications Based on Features |
| | | Presenter: | Ziad Saleh |
| | | Affiliation: | Military Technical College |
| 1056-IUGRC | 1315 - 1330 | Title: | Practical Implementation of a Channel Estimation Technique for Doubly Selective Fading Channels with OFDM System |
| | | Presenter: | Dr./Abdelrahman Marconi |
| | | Affiliation: | Military Technical College |
| 1140-IUGRC | 1330 - 1345 | Title: | Design and Implementation of a QPSK-Based Image Transmission System using GNU Radio |
| | | Presenter: | Abd Elrahman Abd Elaziz |
| | | Affiliation: | Military Technical College |
| 1168-IUGRC | 1345- 1400 | Title: | Advanced Pitch Control for UAVs: A Comparative Study of PID and LQR Techniques |
| | | Presenter: | Dr./Amr Sarhan |
| | | Affiliation: | Military Technical College |
| 1146-IUGRC | 1400- 1415 | Title: | Design & Implementation of low-cost CW Speed Radar |
| | | Presenter: | Ziad Mohamed |
| | | Affiliation: | Military Technical College |
| 1132-IUGRC | 1415- 1430 | Title: | TCP/IP and UDP Data Communication Implementation for Unmanned Surface Vehicle Control System |
| | | Presenter: | Mohamed Tolba |
| | | Affiliation: | Military Technical College |

TRACK 3: CIVIL & ARCHITECTURE ENGINEERING

Editor: Col. Assoc. Prof. Dr. Mohamed Zahran

SESSION NO. 1 SUN-01 (CIVIL & ARCH) ARCHITECTURE ENGINEERING

Session Info:

| | |
|-----------|-------------------------------------|
| Location: | ROOM-PG4 |
| Date: | Sunday 27/7/2025 |
| Time: | 1300 – 1400 |
| Track: | Civil and Architectural Engineering |

Board:

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| Col. Assoc. Prof. Dr. | Sherif Ibrahim | Military Technical College |
| Col. Dr. | Hany Mokhtar | Military Technical College |
| Lt.Col. Dr. | Yasser Ibrahim | Military Technical College |

Session Papers:

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|--------------|-------------|--------------|--|
| 1154-IUGRC-9 | 1300 – 1330 | Title: | Design of Multimodal transportation Hub in Borg Al-Arab City |
| | | Presenter: | Mohamed Amgad |
| | | Affiliation: | Civil & Architecture Department, Military Technical College |
| 1155-IUGRC-9 | 1330 – 1400 | Title: | Design of Heritage and handicrafts center in Al-Remaya, Giza |
| | | Presenter: | Youssef Ahmed |
| | | Affiliation: | Civil & Architecture Department, Military Technical College |

TRACK 3: CIVIL & ARCHITECTURE ENGINEERING

Editor: Col. Assoc. Prof. Dr. Mohamed Zahran

SESSION NO.2 MON-02 (CIVIL & ARCH) CIVIL ENGINEERING I

Session Info:

| | |
|-----------|-------------------------------------|
| Location: | ROOM-PG4 |
| Date: | Monday 28/7/2025 |
| Time: | 830-1000 |
| Track: | Civil and Architectural Engineering |

Board:

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| General (R) Prof. Dr. | Nabil Hussien | Military Technical College |
| General (R) Prof. Dr. | Osama Moursy | Military Technical College |
| General (R) Prof. Dr. | Nabil Nagy | Military Technical College |
| Brigadier Assoc. Prof. Dr. | Ashraf Osman | Military Technical College |
| Col. Assoc. Prof..Dr. | Mohamed Zahran | Military Technical College |
| Lt. Col. Dr. | Ahmed Elsheshene | Military Technical College |

Session Papers 2:

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|------------|-----------|--------------|---|
| 1142-IUGRC | 830 - 845 | Title: | Water surface rise along north coast of Egypt |
| | | Presenter: | O.A.Abd ER Salam a, A.W.EL Saadany a , O.S.EL Sayed a,A.M.Sayed a, M.S.Mahmoud |
| | | Affiliation: | Civil & Architecture Department, Military Technical College |
| 1138-IUGRC | 845 - 900 | Title: | Innovative Approaches in the Engineering of Railway Transition Zones |
| | | Presenter: | A.E.Elashry , H.M.Said , A.A.Ibrahim , M.G.Gazawy , A.S.Mashhout , |
| | | Affiliation: | Civil & Architecture Department, Military Technical College |
| 1103-IUGRC | 900 - 915 | Title: | Effect of Fibers and Nanomaterials individually or in combination on the enhancement of asphalt mixes performance |
| | | Presenter: | Mohamed essam, Mohamed fouad, Hazem souad, Assem Khaled, Youssef hegazy |
| | | Affiliation: | Civil & Architecture Department, Military Technical College |
| 1136-IUGRC | 915- 930 | Title: | Enhancing Soil Performance Using Soil Reinforcement Techniques (Geogrid Reinforcement) |
| | | Presenter: | Mark Raouf Labib, Ahmed Mohamed Ibrahim, Ahmed Mohamed Yehia, Ahmed Samy Ibrahim |
| | | Affiliation: | Civil & Architecture Department, Military Technical College |
| 1139-IUGRC | 930-945 | Title: | Sedimentation and Transportation in the Gargoub Port Area, Marsa Matrouh |
| | | Presenter: | Mustafa Gamal Faisal, Youssef Walid Sayed |
| | | Affiliation: | Civil & Architecture Department, Military Technical College |
| 1166-IUGRC | 945-1000 | Title: | Improving Bearing Capacity of Loose Sand using Crushed Concrete Aggregates and Additives |
| | | Presenter: | Mohamed Waleed , Maged Emad , Youssef Yasser |
| | | Affiliation: | Arab Academy for Science, Technology & Maritime Transport, Egypt |

TRACK 3: CIVIL & ARCHITECTURE ENGINEERING

Editor: Col. Assoc. Prof. Dr. Mohamed Zahran

SESSION NO.3 TUE-03 (CIVIL & ARCH) CIVIL ENGINEERING II

Session Info:

| | |
|-----------|-------------------------------------|
| Location: | ROOM-PG4 |
| Date: | Tuesday 29/7/2025 |
| Time: | 830-1000 |
| Track: | Civil and Architectural Engineering |

Board:

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| General (R) Prof. Dr. | Nabil Hussien | Military Technical College |
| General (R) Prof. Dr. | Osama Moursy | Military Technical College |
| General (R) Prof. Dr. | Nabil Nagy | Military Technical College |
| Brigadier Assoc. Prof. Dr. | Ashraf Osman | Military Technical College |
| Col. Assoc. Prof. Dr. | Mohamed Zahran | Military Technical College |
| Lt. Col. Dr. | Ahmed Elsheshene | Military Technical College |

Session Papers 3:

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| 1129-IUGRC | 830 - 845 | Title: | Simulation of Structural Load from Nuclear Explosions Using a MATLAB Model |
| | | Presenter: | Ahmed Walid, Jamal Talaat Taha Ali |
| | | Affiliation: | Civil & Architecture Department, Military Technical College |
| 1147-IUGRC | 845 - 900 | Title: | Innovated subversive breakwater pontoon |
| | | Presenter: | Ramadan Khaled Hussein, Ahmed Ashraf Ahmed, Mohammed Zakaria Hassan, Ahmed Tarek Muhammed |
| | | Affiliation: | Civil & Architecture Department, Military Technical College |
| 1100-IUGRC | 900 - 915 | Title: | Numerical Simulations of Concrete Layers for A Fortified Structure Under The Effect Of Smart Guided Projectiles |
| | | Presenter: | Samy Tawfik, Mohamed Ali , Ali Ebrahim , Ziad Ahmed |
| | | Affiliation: | Civil & Architecture Department, Military Technical College |
| 1028-IUGRC | 915- 930 | Title: | Finite Element Model for Analyzing the Dynamic Response of Steel Movable Bridges Based on Experimental Modal Identification |
| | | Presenter: | Maha A Eissa |
| | | Affiliation: | Menoufia University, Egypt |
| 1066-IUGRC | 930-945 | Title: | Numerical Simulation Of Local Scour Around Bridges Piers Using Internal Openings |
| | | Presenter: | Ali Mohamed Tharwat; Momen Taher; Mohamed Eizeldin |
| | | Affiliation: | Civil Department, Engineering Faculty, The British University In Egypt, El Shorouk, Cairo |
| 1149-IUGRC | 945-1000 | Title: | State of the Art Review of the Application of AI in Bored Piling – Extended Abstract |
| | | Presenter: | Iqra Ijaz Khan |
| | | Affiliation: | Coventry University, United Kingdom |

TRACK 4: CHEMISTRY & ENVIRONMENTAL ENGINEERING

Editor: Lt. Col. Dr. Moamen Galal

1st Lt. Mahmoud Abobakr Mohamed

SESSION NO.1 MON-01 (CHEM) NBC PROTECTION

Session Info:

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| Location: | ROOM- PG8 |
| Date: | Monday 28/7/2025 |
| Time: | 830 - 945 |
| Track: | Chemistry & Environmental Engineering |

Board:

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| General (R) Prof. Dr. | Ahmed Baraka | Military Technical College |
| Prof. Dr. | Tarek Nagla | Nuclear Power Plant Authority |
| Brigadier Assoc. Prof.Dr. | Tamer Wafy | Military Technical College |
| Col. Assoc. Prof. Dr. | Ahmed Omar | Military Technical College |
| Lt. Col. Dr. | Basem Zaghloul | Military Technical College |
| Lt. Col. Dr. | Moamen Glal | Military Technical College |

Session Papers:

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|---------------------|--------------------|---------------------|--|
| 1059-IUGRC-9 | 8:30 – 8:45 | Title: | NSE: A GIS-Based Simulation Software for Estimating Nuclear Detonation Effects |
| | | Presenter: | Moaz hamed, and fadi amgad |
| | | Affiliation: | Nuclear Engineering Department, Military Technical College |
| 1060-IUGRC-9 | 8:50 – 9:05 | Title: | Investigating the effectiveness of using numerical approach rather than traditional analytical approach for both neutronic and thermal hydraulic for fuel rod |
| | | Presenter: | Mostafa mosalamy, and mohab ahmed |
| | | Affiliation: | Nuclear Engineering Department, Military Technical College |
| 1063-IUGRC-9 | 9:10 – 9:25 | Title: | Enhancing and validating shielding characteristics against gamma rays using powder composite material |
| | | Presenter: | Andrew joseph, and Marwan khaled |
| | | Affiliation: | Nuclear Engineering Department, Military Technical College |
| 1090-IUGRC-9 | 9:30 – 9:45 | Title: | Plasma For Radiation Detection (Spark detector) |
| | | Presenter: | Hossam Khalid Hanafy, Ahmed Tarek Fawzi, and Hashim Ahmed Ahmed |
| | | Affiliation: | Chemical warfare Department, Military Technical College |

TRACK 4: CHEMISTRY & ENVIRONMENTAL ENGINEERING

Editor: Lt. Col. Dr. Moamen Galal

1st Lt. Mahmoud Abobakr Mohamed

SESSION NO.2 TUE-01 (CHEM)

NANOTECHNOLOGY AND CHEMICAL APPLICATIONS

Session Info:

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|------------------|--|
| Location: | ROOM- PG8 |
| Date: | Tuesday 29/7/2025 |
| Time: | 830-1000 |
| Track: | Chemistry & Environmental Engineering |

Board:

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| General (R) Prof. Dr. | Ahmed Baraka | Military Technical College |
| Prof. Dr. | Tarek Nagla | Nuclear Power Plant Authority |
| Brigadier Assoc. Prof. Dr. | Tamer Wafy | Military Technical College |
| Col. Assoc. Prof. Dr. | Ahmed Omar | Military Technical College |
| Lt. Col. Dr. | Basem Zaghloul | Military Technical College |
| Lt. Col. Dr. | Moamen Glal | Military Technical College |

Session Papers:

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|---------------------|--------------------|---------------------|---|
| 1141-IUGRC-9 | 8:30 – 8:45 | Title: | MSLA 3D Printing in Energetic Systems: A Comprehensive Review of Materials, Methods, and Safety Considerations |
| | | Presenter: | Tamer Wafy |
| | | Affiliation: | Chemical and Nuclear Engineering Branch, Military Technical College |
| 1054-IUGRC-9 | 8:50 – 9:05 | Title: | Assessment of Oxidative Stress Parameters of Tenebrio molitor fed on Organic waste |
| | | Presenter: | Eman Alaaeldin Abdelfattah |
| | | Affiliation: | Faculty of Science, Cairo University, Egypt |
| 1033-IUGRC-9 | 9:10 – 9:25 | Title: | Enhanced Green Hydrogen Production using Fe₃O₄ Nanocatalysts and CaCl₂·6H₂O Phase Change Materials in Water Electrolysis |
| | | Presenter: | Malak Tarek Elkheshen, Saif Mamdouh Youssef |
| | | Affiliation: | El Shorouk Academy, Egypt |
| 1113-IUGRC-9 | 9:30 – 9:45 | Title: | Graphene based nanocomposites for environmental applications |
| | | Presenter: | Abdalla.bayomi, Mostafa Soliman, and Mohamed hassan |
| | | Affiliation: | Chemical warfare Department, Military Technical College |
| 1114-IUGRC-9 | 9:45-10:00 | Title: | Synthesis and Characterization of Coordination Polymers for Chemical Sensing |
| | | Presenter: | Essam Mohamed Abd Al-Badie, Omar Ezzat Mohamady, Mohamed Essam ElNagar and Ahmed Ashraf Gaber |
| | | Affiliation: | Chemical warfare Department, Military Technical College |



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