



IEEE Event Report

International Workshop on Antenna and Microwave Approaches for a Sustainable Future

Dates: 11–13 November 2025

Venue: Electronics Research Institute (ERI), Cairo, Egypt

Organizers: IEEE MTT-S Egypt Chapter & IEEE AP-S Egypt Chapter

Host Institution: Electronics Research Institute (ERI)

1. Event Overview

In line with IEEE's mission to advance technology for humanity and to strengthen international scientific collaboration, the Electronics Research Institute (ERI), Cairo, hosted a joint international workshop organized by the IEEE Microwave Theory and Technologies Society (MTT-S) Egypt Chapter and the IEEE Antennas and Propagation Society (AP-S) Egypt Chapter from 11 to 13 November 2025. The workshop was held under the title:

Antenna and Microwave Approaches for a Sustainable Future

The event aimed to bring together leading international and local experts, early-career researchers, and graduate students to exchange knowledge, highlight recent advances, and promote collaboration in the fields of antennas, microwave engineering, wave propagation, and emerging technologies.

2. Organization and Leadership

The workshop was held under the scientific leadership of:

- Prof. Dr. Hadia El-Hennawy, Professor of Electronics Engineering and Former Dean, Ain Shams University, Chair of the IEEE APS Egypt Chapter.
- Prof. Dr. Ayman El-Tager, Professor and Head of the Electronics Engineering Department, Military Technical College, Cairo, Egypt, Founding Chair of the IEEE MTTS Egypt Chapter.

The organizing committee was chaired by Prof. Dr. Esmat Abdel-Fattah, former President of the Electronics Research Institute (ERI), in collaboration with Prof. Dr. Ahmed Attia, Head of the Microwave Department at ERI, Cairo, Egypt.





3. Distinguished Guests and Keynote Contributions

The workshop featured the participation of several distinguished IEEE leaders and internationally recognized experts. Among the guests of honor were:

- Prof. Dr. Anding Zhu, President-Elect of the IEEE Microwave Theory and Techniques Society (IEEE MTT-S), who participated remotely and delivered a keynote lecture highlighting the role of MTT-S, its global activities, and services to members, in addition to a specialized technical lecture on RF power amplifier technologies.
- Prof. Dr. Christophe Fumeaux, President of the IEEE Antennas and Propagation Society (IEEE AP-S), who attended the workshop in person, participated in the evaluation of student competitions, and delivered both a society overview lecture and a technical lecture on phased-array antenna systems.

The opening session was chaired by Prof. Dr. Sherine Abdelkader Moharram, President of the Electronics Research Institute, with participation from Prof. Dr. Yehia Antar (Royal Military College of Canada), a former IEEE AP-S President and AdCom member, and Prof. Dr. George Shaker (University of Waterloo, Canada). The opening remarks emphasized the research capabilities of ERI, the importance of international collaboration, and the active role of Egyptian scientists abroad in supporting technological development in Egypt.

Workshop Organized By IEEE-MTT-S and IEEE AP-S Egypt Chapters "Antenna and Microwave Approaches for Sustainable Future" 11–13 November 2025

Electronics Research Institute, Joseph Tito St, Huckstep, El Nozha, Cairo Governorate

Main Speakers



Prof. Christophe Fumeaux

IEEE
APS PRESIDENT



Prof. Anding Zhu

IEEE MTT-S
PRESIDENT ELECT.



Prof. Yehia Antar

LIFE FIEEE, TIER1 CANADA
RESEARCH CHAIR



Prof. Robert H. Caverly

DML-E



Prof. Qammer H. Abbasi

UNIVERSITY OF
GLASGOW



Prof. Atif Shamim

IEEE
FELLOW, KAUST



Prof. Michael Roberg

DML



Prof. Joseph Bardin

DML



Prof. George Shaker

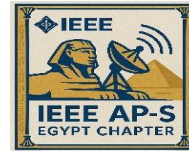
UNIVERSITY OF
WATERLOO



Assoc. Prof. Sema Dumanli

UNIVERSITY OF
BOGAZICI, TURKEY





4. Technical Program Highlights

The three-day technical program included high-quality lectures and discussions delivered by leading international and national experts, attracting more than 130 participants.



Day 1 – Microwave Power Amplifiers and RF Systems

Lectures were delivered by Prof. Dr. Anding Zhu (University College Dublin, Ireland), Prof. Dr. Robert Caverly (Villanova University, USA, Editor-in-Chief of *IEEE Microwave Magazine*), and Dr. Michael Roberg (IEEE Distinguished Microwave Lecturer, Qorvo). The day also highlighted national research efforts through technical presentations by Egyptian researchers in the area of RF and microwave power amplifiers.

Day 2 – Professional Development and Emerging Technologies

The second day featured a lecture by Prof. Dr. Sima Dumanli (Boğaziçi University, Turkey), Chair of IEEE Young Professionals, focusing on IEEE membership benefits, professional development, and international competitions. A remote lecture was delivered by Prof. Dr. Joseph Bardin (University of Massachusetts, USA), IEEE Distinguished Microwave Lecturer, on quantum computing fundamentals and research opportunities for microwave engineers. National research contributions in quantum technologies were presented by Prof. Dr. Tamer Abu-El-Fadl (Nile University).

Day 3 – Antennas, Measurement Systems, and Smart Surfaces

The final day included technical lectures by Prof. Dr. Christophe Fumeaux on phased-array antennas, a technical demonstration by Antenom on the Nano Far-Field Antenna Measurement System donated by IEEE AP-S to the Egypt Chapter, and a remote lecture by Prof. Dr. Qammer H. Abbasi (University of Glasgow, UK) on smart electromagnetic surfaces and their applications. Additional technical contributions were delivered as part of IEEE Women in Engineering (WIE) activities.

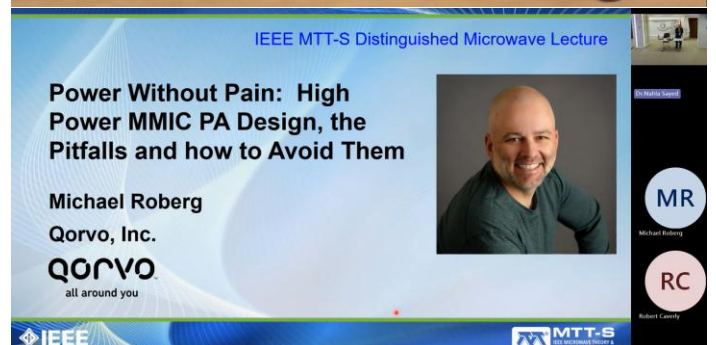
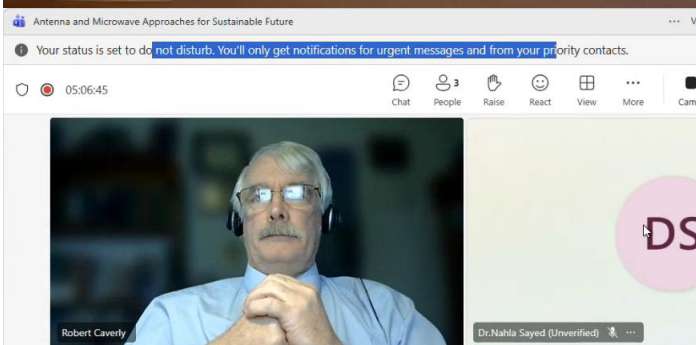
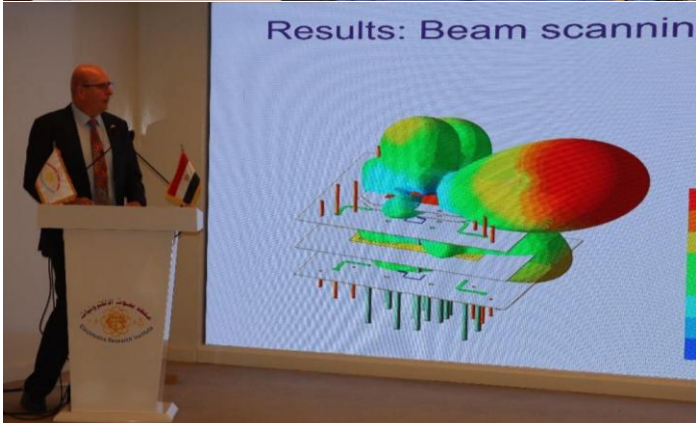




**Initial program for Joint Workshop by IEEE MTT-S Eg. Chapter and AP-S Eg. Chapter
Antenna and Microwave Approaches for Sustainable Future
11-13 November 2025, ERI, Cairo, Egypt**

Day	Time	Activity	Presenter
Tuesday 11 Nov	9:00-10:00	Free Registration	
	10:00-11:00	Opening Ceremony IEEE SAKRY, Houshagar Activities & Industry Engagement	
	11:15-12:15	The Evolution of RF Power Amplifiers: From Past Advancements to Future Challenges	Prof. Mohammad Essandil, 2025 IEEE SAKRY Committee Chair, ERSU Director, Rabat, Morocco
	12:15-13:15	Guest RFPA Challenges and Proposed Solutions	Prof. Andrew Zhu, IEEE 2025 President, Elect of IEEE MTT-S University College Dublin, Ireland
	13:15-14:15	Break	
	14:15-15:15	Semiconductor Electronics for High Power/High Speed Reconfigurable RF and Microwave Electronics	Prof. Robert Gentry (DAE, E and SP), Editor in Chief, IEEE MW Magazine, Villanova University, PA, USA
	15:15-16:15	Power Without Pain: High Power MMIC PA Design, the Pitfalls and how to Avoid Them	Michael Rubing (DAE), IEEE, MMIC design, Doron, USA
Wednesday 12 Nov	9:00-10:00	IEEE YD Talk	Samir Doudou, Ad. S. Danish, Egyptian Space Agency Officers, TPC Chairs
	10:00-11:00	EgSA Visit for applied registrants with ID's	
	11:00-12:00	IEEE YD Competition	
	12:00-13:00	Break	
	13:00-14:00	Aspects of Quantum Computing (Local Experiments @ERI)	Tamer Abdelkhalik et. Al, ERI, AUC, MTC, Cairo, Egypt
	14:00-15:00	Quantum Computing: What is it, how does it work, and what are the opportunities for microwave engineers?	Prof. Joseph Barlow (DAE), MTT-S TC 30 Chair, University of Massachusetts Amherst, MA, USA
Thursday 13 Nov	9:00-10:00	IEEE APS President Talk	Prof. Christopher Fumagalli, IEEE APS President, The University of Queensland, Australia
	10:00-11:00	STEM, COPE & IEEE membership campaign	Y. Anwar, EAC, Canada B.
	11:00-12:00	Reconfigurable Intelligent Surfaces (RIS) for Enabling Next Generation Wireless Communication	G. Shaker, U. of Waterloo-Canada
	12:00-13:00	Communication Through non-Wave (RIS) YD (15 min, Thesis Competition)	Diwan Alshai, University of Glasgow-UK
	13:00-14:00	Break	
	14:00-15:00	Reimagining Health Monitoring Using Applied Electromagnetics	Ash Shams, KAUST, KSA
	15:00-16:00	IEEE WIE Technical Activities	TPC Chairs G. Shaker, U. of Waterloo







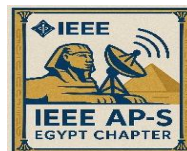
5. Technical Visits

Two technical field visits were organized on the sidelines of the workshop:

- A visit to the Egyptian Space Agency, including an introductory briefing, tours of satellite clean-room laboratories, and the electromagnetic compatibility laboratory.
- A visit to the central laboratories of the Electronics Research Institute, including the millimeter-wave laboratory, SAR measurement laboratory, printed circuit board laboratory, and modeling and simulation facilities.

These visits provided participants with direct exposure to advanced national research infrastructure.







6. Student and Young Researcher Competitions

The workshop included scientific competitions recognizing excellence in research and innovation, including Best Ph.D. Thesis, Best M.Sc. Thesis, and Best Poster awards. More than 30 young researchers from ten Egyptian universities and research institutions participated.

The total value of the awards was approximately EGP 100,000, fully supported by the IEEE AP-S Egypt Chapter and IEEE MTT-S Egypt Chapter. The competitions aimed to encourage high-quality research and strengthen student engagement within IEEE technical communities. In addition, the young professionals and scientists are all encouraged to be IEEE members / student members.

The winners of the Best Ph.D. and M.Sc. Thesis awards were:

- Dr. Rania Eid Ahmed Shehata (Electronics Research Institute) for her thesis entitled “Design of Array Systems for 5G Applications”.
- Dr. Mohamed Akmal Mohamed Ismail Mahboub (Ain Shams University) for his thesis entitled “Design and Implementation of Jamming Antenna for Global Navigation Satellite Systems (GNSS) Applications”.
- Dr. Ezza Hamdy Ibrahim Abbas (Mansoura University) for her thesis entitled “Wearable Antenna Arrays for Biomedical Applications”.
- Dr. Mahmoud Sabry Hassan (Military Technical College) for his thesis entitled “High-Power Electromagnetic Pulse Using Solid-State Generator”.

The winners of the Best Poster awards were:

- Dr. Ahmed Farouk El-Dehshan for the senior researchers’ poster entitled “Computer-Aided Design Tool for Multi-Impedance Matching Network Design”.
- Ph.D. Candidate, Islam Nasr for the Postgraduates’ poster entitled “Efficiency Enhancement of RF Power Amplifier”.



- Master Student, Salma Maher El-Sharif (German University in Cairo, GUC) for the Postgraduates' poster entitled "Performance Evaluation of TDoA-Based Localization in LoRa Low Power Wide Area Networks".
- Dr. Ibrahim Samy Mohamed for the Postgraduates' poster entitled "High-Gain Radar Antenna in Ku-Band".
- Students Ali Ahmed Ali and Omar Ahmed Abdelaziz (Nahda University, Beni Suef) for the undergraduates' poster entitled "Advanced Smart Vehicle Controlled by Bluetooth, Voice Commands, and Vision-Based Object Detection".

7. Awards and Closing Ceremony

The workshop concluded with an awards and certificates ceremony presented by Prof. Dr. Sherine Abdelkader Moharram, President of ERI; Prof. Dr. Ahmed Madian, Chair of the IEEE Egypt Section; the workshop leadership; and distinguished guests. Participants highly commended the scientific depth, professional organization, and strong IEEE support demonstrated throughout the event.



8. Gala Dinner

A Gala Dinner is organized for the participants in a historic place called Al-Azhar Park, surrounded by the warm Cairo vibes and the old Islamic Egyptian history.





9. Participation Statistics

- Total participants: 130
- International and former IEEE Presidents: 3
- IEEE Distinguished Microwave Lecturers: 4
- International lecturers and experts: 5
- Egyptian lecturers and experts: 13
- Participants in competitions: 31
- Number of awards: 9
- Total award value: EGP 100,000
- Participating Egyptian universities and research institutions: 10
- Participating companies and industrial partners: 4
- Participating IEEE members/students: 80
- Participating non-IEEE guests: 50



