HUE
HORUS UNIVERSITY – EGYPT

Contact Information

Name: Rania Hamdy Mohamed Mosbah Elabd

Address: New Damietta – Damietta – Egypt.

Phone contacts: 01012130300

Date of birth: 1/4/1987

Email address: relabd@horus.edu.eg **and** eng.rania87@yahoo.com

Google Scholar: https://scholar.google.com.eg/citations?user=uQjylOUAAAAJ&hl=ar

Research gate: https://www.researchgate.net/profile/Rania-Elabd-2

ORCID: https://orcid.org/0000-0002-4468-0277

Web Researcher ID: ADK-1481-2022

Scopus Author ID: 57221413610

Education/ Academic qualifications

Year	School / University	Specialization	Degree
2020	Mansoura University	Communication & Electronics Department	Ph.D. in Communication & Electronics Engineering.
2013	Mansoura University	Communication & Electronics Department	M.Sc. in Electrical Engineering.
2008	Mansoura University	Electronics & Communications Department	Bachelor's Degree

Academic Employment History

From:	To:	University / Organization	Title of Position
2025	present	Hours University – Egypt (Full time)	Assistant professor
2025	present	Higher Institute of Engineering and Technology, New Damietta, Egypt (Part time)	Assistant professor
2021	2025	Higher Institute of Engineering and Technology, New Damietta, Egypt (Full time)	Assistant professor
2023	2025	Hours University – Egypt (Part time)	Assistant professor
2013	2021	Higher Institute of Engineering and Technology, New Damietta, Egypt	Assistant Lecturer
2008	2013	Higher Institute of Engineering and Technology, New Damietta, Egypt	Demonstrator

Biography

Motivated Assistant Professor with 17 years of experience specializing in Electronic and Communication department. Strong background in creating insightful research papers which

I do hereby declare that the information furnished above is true to the best of my knowledge.

Name: Rania Hamdy Mohamed Mosbah Elabd **Signature: Rania Hamdy**

increased University exposure and helped student's learning development. Swiftly establishing strong relationships with pupils, increasing class engagement and enjoyment. She received her PHD degree from the Department of Electronics and Communications Engineering, Mansoura University, Egypt in 2020. She received her M.Sc. from the Department of Electronics and Communications Engineering, Mansoura University, Egypt in 2013. And the B.Sc. degree in Electronics and Communications engineering from the Faculty of Engineering-Mansoura University-Egypt by 2008. Her current research interests are in wireless communication systems, design and optimization of microstrip antennas and their applications. She has many published papers in communication field.

Teaching Experience

First, the basic science subjects:

- Math 1 and Math 2
- Math 3 and Math 4
- Numerical
- Statistics
- Engineering Economy

Second: Specialization Sciences Subjects (Communications and Electronics)

- Electronic Test 1
- Electronic Test 2
- Electronic Test 3
- Electronic Test 4
- Electronic circuit 1
- Control system
- Signal Analysis
- Digital Signal Processing
- Communication System
- Optical semiconductor (optoelectronics)
- Optical Communication System
- Electronic Circuits using MATLAB
- Computer Science
- Digital and logical circuits
- Mobile communication system
- Wireless communication system

Supervising Graduation Projects

- Hardware implementation of a Radiation pattern Meter RPM8000 for antenna systems 2021-2022.
- Design and implementation of reconfigurable filter antenna for wireless applications 2022-2023.
- Design and implementation IOT system based on antenna 2023-2024.
- Design and implementation Wearable Smart Gloves for Sign Language Translation 2024-2025.

I do hereby declare that the information furnished above is true to the best of my knowledge.

Name: Rania Hamdy Mohamed Mosbah Elabd **Signature: Rania Hamdy**

- Design and implementation Smart Wearable Safety Jacket 2024-2025.
- IOT Smart Helmet System for Delivery Rider Safety 2024-2025.
- Automated PCB fabrication machine 2025-2026.
- A comprehensive framework for 5G network planning and dimensioning using MIMO 2025-2026.

Experience in Quality Work

- Member of the Academic Advising and Registration Committee.
- Chairman of the Measurement and Performance Evaluation Committee.
- Member of the Executive Council of the Institute's Quality Assurance Unit.
- Quality Coordinator for the Electronics and Communications Engineering Department.
- Member of the scientific research standard.
- Preparing course specification and reports and analyzing the examination paper.
- Preparing the course files
- Participation in control work.
- Participation in making study schedules.

Skills

- Lecture research
- Interactive teaching
- Managing and mentoring
- Course material preparation
- Classroom management
- Course preparation
- Grant proposal writing
- Student progress reporting
- Lecture planning

List of Publications

First: in international journals.

[1] Mohamed. A. Mohamed, Fayez.W. Zaki and **Rania.H.Mosbah**," Improving Quality of VoIP over WiMAX ", IJCSI International Journal of Computer Science Issues, Vol. 9, Issue 3, No 3, May 2012, ISSN (Online): 1694-0814.

[2] M.A. Mohamed, F.W. Zaki, **R.H. Mosbeh**," Simulation of WiMAX Physical Layer: IEEE 802.16e ", IJCSNS International Journal of Computer Science and Network Security, VOL.10 No.11, November 2010.

[3] **R. H. El-abd**, H. H. Abdullah, M. A. Mohamed, A.Sh. Samrah, and A. Abo talb, " Studying the Performance of Linear Precoding Algorithms based on Millimeterwave MIMO Communication System", International Jouranal of Scientific and Engineering Research (IJSER), vol.10, no. 1, pp. 2076–2082, 2019.

I do hereby declare that the information furnished above is true to the best of my knowledge.

Name: Rania Hamdy Mohamed Mosbah Elabd **Signature: Rania Hamdy**

[4] **R. H. El-abd**, H. H. Abdullah, M. A. Mohamed, and A.Sh. Samrah, "Low Complexity High-Performance Precoding Algorithms for mm-Wave MU-MIMO Commu-nication System", Wirel. Pers. Commun. (Springer), 2020. DOI: 10.1007/s11277-020-07692-6

[5] **R. H. El-abd**, H. H. Abdullah, and M. A. Mohamed, "Compact Highly Directive MIMO Vivaldi Antenna for 5G Millimeter-wave Base Station", Jouranal of Infrared, Millimeter, and Terahertz Waves (Springer), 2021.

[6] **Elabd, R.H.**, Abdullah, H.H, "A High Isolation UWB MIMO Vivaldi Antenna Based on CSRR-NL for Contemporary 5G Millimeter-Wave Applications", J Infrared Milli Terahz Waves (2022). https://doi.org/10.1007/s10762-022-00894-y.

[7] **Rania Hamdy Elabd**, and Ahmed Jamal Abdullah Al-Gburi, " SAR Assessment of Miniaturized Wideband MIMO Antenna Structure for Millimeter Wave 5G Smartphones", Microelectronic Engineering, 2023.

https://doi.org/10.1016/j.mee.2023.112098

[8] **Elabd, R.H.**, Hussein, A.H. Efficient design of a wideband tunable microstrip filtenna for spectrum sensing in cognitive radio systems. J Wireless Com Network 2023, 109 (2023).

[9] **Elabd, R.H**. Compact dual-port MIMO filtenna-based DMS with high isolation for C-band and X-band applications. J Wireless Com Network 2023, 110 (2023).

[10] Ahmed A Kabeel, Amr H Hussein, Ahmed E ElMaghrabi, and **Rania H Elabd**, Design of a Circular Concentric Microstrip Patch Antenna Array for WI-FI Band Energy Harvesting, vol. 7, issue 5, pp. 156-159, November 2023.

[11] **Elabd, R.H**., Al-Gburi, A.J.A., Super-Compact 28/38 GHz 4-Port MIMO Antenna Using Metamaterial-Inspired EBG Structure with SAR Analysis for 5G Cellular Devices. J Infrared Milli Terahz Waves (2023).

[12] **Elabd, R.H**., Hussein, A.H., Mousa, M.E. et al. "Implementation of highly isolation OLR: based microstrip full-duplex Tx/Rx antenna systems with low insertion loss for contemporary wireless system applications". J Wireless Com Network 2024, 4 (2024).

[13] Islam M. Ibrahim, Nada I. Farah, Mohamed I. Ahmed, Hala M Abdelkader, Ahmed Jamal Abdullah Al-Gburi, Zahriladha Zakaria, **Rania H. Elabd**, M. M. Elsherbini, "A Composite Matrix of Mm-Wave Antenna Arrays for 5G Applications", PRZEGLĄD ELEKTROTECHNICZNY, ISSN 0033-2097, R. 100 NR 2/2024.

[14] **R. H. Elabd** , and A. J. A. Al-Gburi,"Low mutual coupling miniaturized dual-band quad-port MIMO antenna array using decoupling structure for 5G smartphones", SN Applied Sciences, vol. 06, pp.189, 2024.

[15] **RH Elabd**, et.al."Low insertion loss open-loop resonator–based microstrip diplexer with high selective for wireless applications", Bulletin of Electrical Engineering and Informatics, 2024.

[16] **RH Elabd**, et.al."An Ultra-Selective OLR -based Microstrip Diplexer with Minimal Insertion Loss for Wireless Communication System", International Journal of Intelligent Engineering and Systems, 2024.

I do hereby declare that the information furnished above is true to the best of my knowledge.

Name: Rania Hamdy Mohamed Mosbah Elabd **Signature: Rania Hamdy**

[17] **Rania Hamdy Elabd**, and Amany A. Megahed, "Isolation Enhancement of a Two-Orthogonal Printed Elliptical Slot MIMO Antenna Array with EBG structure for Millimeter wave 5G Applications, " Discover Applied Sciences Journal, 2024.

[18] **Rania Hamdy Elabd**, Amr H. Hussein, and Amany A. Megahed, " DESIGN OF A Wide Band Monopole Antenna for sub 6 GHz 5G Applications, " 41st National Radio Science Conference NRSC 2024, 2024.

[19] Marwa E Mousa, Rania Eid A Shehata, Haythem H Abdullah, Ahmed A Kabeel, Amr H Hussein, **Rania Hamdy Elabd**, "Design of A Voltage-Controlled Oscillator Based on Butterworth Bandpass Filter", 41st National Radio Science Conference NRSC 2024, 2024.

[20] Nazrin Haziq Jemaludin, Ahmed Jamal Abdullah Al-Gburi, **Rania Hamdy Elabd**, Tale Saeidi, Muhammad Firdaus Akbar, Imran Mohd Ibrahim, Zahriladha Zakaria, " A comprehensive review on MIMO antennas for 5G smartphones: Mutual coupling techniques, comparative studies, SAR analysis, and future directions", Results in Engineering, vol. 23, PP. 102712- 102753, 2024.

[21] **Rania Hamdy Elabd** and Ahmed Jamal Abdullah Al-Gburi, "Design and Optimization of a Circular Ring-Shaped UWB Fractal Antenna for Wireless Multi-Band Applications Using Particle Swarm Optimization", Progress In Electromagnetics Research B, Vol. 106, 101-112, 2024.

[22] **R. H. Elabd** , and A. J. A. Al-Gburi,"Ultra-Compact 4-Port MIMO Antenna with Defected Ground Structure and SAR Analysis for 28/38 GHz 5G Mobile Devices", Journal of Electromagnetic Waves and Applications, 2024.

[23] Amany A Megahed, Ahmed Jamal Abdullah Al-Gburi, Amr H Hussein and **Rania Hamdy Elabd**, "Compact Wideband Antenna Array with DGS-Based Metamaterial for Efficient Smartphone Communication and SAR Reduction", Progress in Electromagnetics Research B, 2025.

[24] **Rania Hamdy Elabd**, Ahmed JA Al-Gburi, Amany A Megahed, "Compact Circular MIMO Antenna with Defected Ground Structure (DGS) for Improved Isolation in 5G sub-6 GHz Mobile Systems", Results in Engineering, 2025.

[25] Nazrin Haziq Jemaludin, Ahmed Jamal Abdullah Al-Gburi, Muhannad K Abdulhameed, Sarah R Hashim, Dunya Zeki Mohammed, Tale Saeidi, Anupma Gupta, Zahriladha Zakaria, Nurhayati Nurhayati, **Rania Hamdy Elabd, "** Compact Physical and Electrical Patch Antenna Engineered for 5G Mobile Devices and Multiband Systems", Progress in Electromagnetics Research B, 2025.

[26] **Rania Hamdy Elabd**, Rania Eid A Shehata, Ahmed JA Al-Gburi, Marwa E Mousa, "Compact and High-Performance MIMO Antenna with Metasurface Integration for Millimeter-Wave and Next-Generation 6G Applications", Journal of Infrared, Millimeter, and Terahertz Waves, 2025.

[27] Amany A Megahed, Marwa E Mousa**,** Ahmed JA Al-Gburi, **and Rania Hamdy Elabd**, " Graphene-Based Frequency-Reconfigurable Slot Antenna with Gain Enhancement Using Integrated Metasurface for Terahertz Applications", Optical and Quantum Electronics, 2025.

[28] **Rania Hamdy Elabd**, Amr H Hussein and A. J. A. Al-Gburi,"High-isolation microstrip two-port diplexer and full-duplex antenna with metamaterial-based filters", Discover Applied Sciences, vol. 7, pp. 1044-1065, 2025.

I do hereby declare that the information furnished above is true to the best of my knowledge.

Name: Rania Hamdy Mohamed Mosbah Elabd **Signature: Rania Hamdy**

[29] **Rania Hamdy Elabd**, A. J. A. Al-Gburi, and Amany A Megahed, " Wideband 1 × 2 tree-shaped fractal antenna array with gain enhancement and sidelobe level reduction for sub-6 GHz 5G applications", Results in Optics, vol. 21, pp. 100918, 2025.

[30] Amany A Megahed**, Rania Hamdy Elabd**, A. J. A. Al-Gburi, and, Marwa E Mousa, "Compact Mechanically Reconfigurable DMS-BPF Filtenna with MIMO Configuration for Wide-to-Narrowband Conversion in Sub-6 GHz and X-Band Applications", Progress In Electromagnetics Research B, vol. 115, 1–14, 2025.

[31] Marwa E Mousa**, Rania Hamdy Elabd**, A. J. A. Al-Gburi, and, Amany A Megahed," High – gain grapheme terahertz MIMO antenna with metasurface and electromagnetic bandgap for 6G application", Diamond and Related Materials, pp. 113054, 2025.

[32] **Rania Hamdy Elabd**, et.al." Compact MIMO Antenna with Metamaterial-based S-Line Decoupling Stub for High Isolation and Multiband Applications", Results in Optics, 2025.

Second: In conferences.

Participating with two papers in lst international engineering conference on research and innovation, Delta University for Science and Technology, Egypt, 2022.

- A Highly Isolation SOLR-Based Full Duplex Antenna System for Contemporary High-Speed Wireless Application.
- SIR-Based Compact Microstrip Diplexer with Low Insertion Loss and High Isolation for C-Band Communications.

Participating with two papers in a conference (AIRGEC) Applied Innovation Research in Engineering Grand Challenges – Horus University – Egypt. 2023.

- Design of a Circular Concentric Microstrip Patch Antenna Array for WI-FI Band Energy Harvesting.
- Implementation of Highly Isolation OLR – Based Microstrip Full-Duplex Tx/Rx Antenna Systems with Low Insertion Loss for Contemporary Wireless System Applications.

Participating with two papers in 41st National Radio Science Conference NRSC 2024.

- DESIGN OF a Wide Band Monopole Antenna for sub 6 GHz 5G Applications.
- Design of a Voltage-Controlled Oscillator Based on Butterworth Band pass Filter.

Participating with two papers in 2nd international engineering conference on research and innovation, Delta University for Science and Technology, Egypt, 2024.

- Compact Wideband/Dual band Antenna Structure based Semicircular DGS for WIFI and Sub-6 GHz 5G Wireless Applications
- A study on the performance of a hybrid solar- RF energy harvesting system using a transparent antenna.

Review in International Journals

- Reviewer in Wireless personal communication
- Reviewer in Telecommunication systems
- Reviewer in Progress In Electromagnetics Research

I do hereby declare that the information furnished above is true to the best of my knowledge.

Name: Rania Hamdy Mohamed Mosbah Elabd **Signature: Rania Hamdy**

- Reviewer in IEEE access
- Reviewer in Discover electronics
- Arbitrator of the International Smart Innovation Technologies Competition (IC-SIT'2023)

Community Participations

- Attend The First International Online Conference on Recent Trends of Scientific Publishing in International Referred Journals, University of Central Florida, 13 Jun 2020
- Attending training camp activities for remote sensing and space sciences (titled "Entrepreneurship from the idea to building the future") during the period 8,9/11/2022. (online)
- Participation in the community parties meeting at the Higher Institute of Engineering, New Damietta 2022.
- Participation in organizing a lecture entitled Transparent antenna by the distinguished scientist Rehan Bector at the Higher Institute of Engineering and Technology in New Damietta 2022.
- Giving a lecture on the challenges of the fifth generation at Mubarak Cole School in New Damietta 2021.
- Participation in a symposium for WE Company at the headquarters of the Higher Institute of Engineering and Technology in New Damietta 2021.
- Participation in the judging of the International competition on smart innovation technologies (IC-SIT'2023) –IEEE Egypt AP-S/MTT-S Joint Chapter.
- Giving a lecture on the challenges of the Millimeter wave fifth generation at Mustaqbal university faculty of engineering – Elqasim – KSA. 2023. (online)
- Participation in the judging of the International Science and Engineering Fair ISEF 2024

I do hereby declare that the information furnished above is true to the best of my knowledge.

Name: Rania Hamdy Mohamed Mosbah Elabd **Signature: Rania Hamdy**