BIOGRAPHIC NOTE

The information in this format will be published on the web site of the International Telematic University UNINETTUNO

Degree course: Faculty of Engineering (Ph.D in Communications Engineering)

First name: Mahmoud

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Curriculum (in English)

Mahmoud M. Elmesalawy is a full professor in Electronics and Communications Engineering Department at Faculty of Engineering – Helwan University, Cairo, Egypt. He received the B.Sc., M.Sc. and Ph.D degrees in Electronics and Communications Engineering from Helwan University, in 2002, 2005 and 2010, respectively. He received a master's degree in Educational Planning and Management from International Institute of Educational Planning (IIEP), UNESCO, Paris, France, in 2012. He also received a MicroMaster degree in Managing Technology and Innovation from RWTH Aachen University in collaboration with edX, Germany, in 2020. He is currently working as the dean of the Faculty of Engineering at Helwan University and the head of the Strategic Planning Unit (SPU) at Helwan University. Prof.Elmesalawy has led and participated in numerous research and development projects funded by various international and national funding agencies. His research interests mainly focus on wireless communication technologies. This includes 6G mobile communications, Heterogeneous Networks (HetNets), Multi-RATs Wireless Networks, IoT communications, UAVs communications, Reconfigurable Intelligent Surfaces (RIS) and AI applications in communication systems.

Education

- **Dec. 2020** — **MicroMaster in Managing Technology and Innovation: How to deal with disruptive change.**
  RWTH Aachen University in collaboration with edX, Germany.
- **Jun. 2012** — **Master of Educational Planning and Management.**
  International Institute for Educational Planning (IIEP), UNESCO, Paris, France.
- **Oct. 2010** — **Ph.D. in Communications Engineering.**
  Faculty of Engineering, Helwan University, Cairo, Egypt.
- **Aug. 2005** — **M.Sc. in Communications Engineering.**
  Faculty of Engineering, Helwan University, Cairo, Egypt.
- **Jun. 2002** — **B.Sc. in Electronics, Communications and Computer Engineering.**
  Specialization Stream: Communications Engineering.
  Graduated with Distinction Degree (Ranked First in Class).
  Faculty of Engineering, Helwan University, Cairo, Egypt.

Work Experience

Current

- **Jan. 2022 – Present** Dean of Faculty of Engineering, Helwan University, Egypt.
- **Sep. 2022 - Present** Acting Dean of Faculty of Engineering, Helwan National University (HNU), Egypt.
- **AC Year 2023/2024** International Professor at Faculty of Engineering, International Telematic University UNINETTUNO, Rome, Italy.
- **Apr. 2021 – Present** Full Professor**,** Department of Electronics and Communications Engineering, Faculty of Engineering, Helwan University, Egypt.
- **Jan. 2022 – Present** Director of the Center of Applied Research and Digital Innovation (CARDI) at Faculty of Engineering, Helwan University.
- **Nov. 2016 – Present** Head of Strategic Planning Unit (SPU) of Helwan University.
- **Oct. 2016 – Present** Director of Innovation and Product Development Support Center (IPDSC) at Faculty of Engineering, Helwan University.
- **Nov. 2013 – Present** Cisco Academy Manager at Helwan University.

History

- **Aug. 2020 – Feb.2022** Coordinator of M.Sc Program in Electrical Smart Grid Engineering at Faculty of Engineering, Helwan University.
- **Jun. 2017 – Nov. 2022** Director of Wireless Research Laboratory (WRL) at Faculty of Engineering, Helwan University.
- **Apr. 2016 – Apr. 2021** Associate Professor**,** Department of Electronics and Communications Engineering, Faculty of Engineering, Helwan University, Egypt.
- **Feb. 2011 – Oct. 2012** Educational Planning Expert, Strategic Planning Unit (SPU), Ministry of Higher Education (MOHE), Egypt (Minister Decree No. 4431 – 2011).
- **Feb. 2011 – Apr. 2016** Assistant Professor**,** Department of Electronics, Communications and Computers Engineering, Faculty of Engineering, Helwan University, Egypt.
- **Jan. 2006 – Feb. 2011** Teaching Assistant**,** Department of Electronics, Communications and Computers Engineering, Faculty of Engineering, Helwan University, Egypt.
- **Nov. 2002 – Jan. 2006** Demonstrator, Department of Electronics, Communications and Computers Engineering, Faculty of Engineering, Helwan University, Egypt.

Funded Projects

1- **Project Coordinator (PC) at Helwan University for Erasmus+ project funded by the European Commission (EC).**
   - **Project Title:** Smart Grid Technology - A Master Programme / SGT-MAP.
   - **Academic Partners:** University of Strathclyde - UOS (UK), University of Aberdeen - UNIABDN (UK), Alpen-Adria Universität Klagenfurt - UNI-KLU (Austria), Universidad de Sevilla - US (Spain), Helwan University - HU (Egypt), Arab Academy for Science, Technology, and Maritime Transport - AASTMT (Egypt), Alexandria University - AU (Egypt), ASWAN University - ASWU (Egypt).

- **Associated Partners:** Egyptian Ministry of Electricity and Renewable Energy, Misr El khier organization in Egypt.
- **Project Duration:** 36 Months.

2- PI for applied research project funded by Science and Technology Development Fund (STDF).

- **Project Title:** Sustainable Green Hydrogen-based Energy Eco-System with Integrated Smart Management using Artificial Intelligence and IoT.
- **Academic Partners:** Helwan University, Faculty of Engineering, Department of Electronics and Communications Engineering and Department of Electrical Power and Machines Engineering.
- **Project Duration:** 16 Months.

3- PI for applied research project funded by the Academy of Scientific Research and Technology (ASRT), Ministry of of Higher Education and Scientific Research (MoHESR) in Egypt.

- **Project Title:** Online Laboratory Learning Environment for Engineering, Science and Technology Education.
- **Academic Partners:** Helwan University, Faculty of Engineering, Department of Electronics and Communications Engineering.
- **Industrial Partner:** Smart Systems.
- **Project Duration:** 18 Months.

4- PI for applied research project funded by Science and Technology Development Fund (STDF).

- **Project Title:** IoT Enabled Geofencing System for Monitoring and Imposing COVID-19 Control Measures in Workplaces, Service Areas and Distributed Home Quarantine.
- **Academic Partners:** Helwan University, Faculty of Engineering, Department of Electronics and Communications Engineering.
- **Project Duration:** 12 Months.

5- Co-PI for applied research project funded by the National Telecommunication Regulatory Authority (NTRA), Ministry of Communications and Information Technology (MCIT) in Egypt.

- **Project Title:** Integrating 3G/4G and Wi-Fi Architectures for Diverse Offloading Capabilities.
- **Academic Partners:** Helwan University, Faculty of Engineering, Department of Electronics and Communications Engineering.
- **Industrial Partner:** Etisalat Misr Mobile Operator.
- **Project Duration:** 24 Months.

6- Supervisor for PGSG research project funded by Science and Technology Development Fund (STDF).

- **Project Title:** Efficient Wireless Communication System Using Unmanned Aerial Vehicles (UAVs).
- **Academic Partners:** Helwan University, Faculty of Engineering, Department of Electronics and Communications Engineering.
- **Project Duration:** 30 Months.

7- PI for applied research project funded by the National Telecommunication Regulatory Authority (NTRA), Ministry of Communications and Information Technology (MCIT) in Egypt.

- **Project Title:** Heterogeneous C-RAN Architecture Based on Hybrid FSO/mmW Fronthaul Transport Network for 5G Mobile Systems.
- **Academic Partners:** Cooperated applied research project between Helwan University (Faculty of Engineering, Department of Electronics and Communications Engineering) and Cairo University (National Institute of Laser Enhanced Science "NILES").
- **Industrial Partner:** Etisalat Misr Mobile Operator.
- **Project Duration:** 24 Months.

8- Project Management Consultant for applied research project funded by Science and Technology Development Fund (STDF).

- **Project Title:** New Strategies for infection prevention and control measures to combat COVID-19 infection: A-Developing fabrics incorporating iron oxide nanoparticles to assure safety of health care providers, B-Rhamnolipids nano-micelles as a novel nano-sanitizer to control infection.
- **Academic Partners:** Faculty of Pharmacy at Helwan University, Faculty of Applied Arts at Helwan University, Faculty of Science at Helwan University, Faculty of Pharmacy at Cairo University, Faculty of Pharmacy at Ain Shams University.
- **Industrial Partner:** Fabric Incubator at Helwan University.
- **Project Duration:** 9 Months.

9- Co-PI for applied research project funded by the National Telecommunication Regulatory Authority (NTRA), Ministry of Communications and Information Technology (MCIT), Egypt.

- **Project Title:** Smart Grid Frequency Monitoring Network Architecture and Applications.
- **Academic Partners:** Cooperated applied research project between Department of Electrical Power and Machines Engineering and Department of Electronics and Communications Engineering, Faculty of Engineering, Helwan University.
- **Industrial Partner:** Egyptian Electricity Holding Company (EEHC), Egyptian Ministry of Electricity and Renewable Energy.
- **Project Duration:** 24 Months.
- **The project awarded** the ETRERA 2020 best innovative project for the category of Smart Grids on the level of European Union and Mediterranean countries, April 2014.

10- PI for applied project funded by Helwan University, Egypt.

- **Project Title:** Establishment of Innovation and Product Development Support Center (IPDSC) at Faculty of Engineering, Helwan University.
- **Academic Partners:** Faculty of Engineering, Helwan University.
- **Project Duration:** 24 Months.

Patents

- **US Patent:** Washington, DC: U.S. Patent and Trademark Office, "METHOD AND SYSTEM FOR USING A BREADBOARD" U.S. Patent No. 8,898,607, issued November 25, 2014.

Grants and Awards

- Erasmus+ International Staff Mobility Grant for teaching at Vasile Goldiș Western University of Arad, Romania, 2023.
- Erasmus+ International Staff Mobility Grant for teaching and training at University of Granada (UGR), Spain, 2021.
- Next Technology Leaders (NTL) Grant for studying MicroMaster in Managing Technology & Innovation through edX learning platform from RWTH Aachen University, Germany (Nov. 2019 – Dec. 2020).
- Erasmus+ International Credit Mobility (ICM) Grant for teaching/training/combined at Cardiff Metropolitan University, UK, 2020.
- Excellence Award in obtaining external funding for research projects at the level of Helwan University for the year 2020 (First Position).
- Helwan University's Encouragement Award in Engineering Sciences for the year 2020.
- Fourth position in the international scientific publications at the level of Helwan University for the year 2018.

- Best paper award in the 2nd Europe – Middle East – North African Regional Conference of the International Telecommunications Society (ITS), February 2019.
- ETRERA 2020 best innovative project for the category of Smart Grids on the level of European Union and Mediterranean countries, April 2014.
- First position award for the supervised graduation project entitled "Smart Breadboard" in the ICT stream in the Idea to Product (I2P) Global Competition hosted in Stockholm, Sweden, Nov. 18, 2011.
- Second position award for the supervised graduation project entitled "Secure+: Portable SSL Engine" in Made in Egypt (MIE) Competition hosted in Cairo, Egypt, August 2011.
- Ericson Prize for the co-supervised graduation project entitled "Design and implementation of seamless handover between Wi-Fi and UMTS" in the Egyptian Engineering Day (EED) Competition hosted in Cairo, Egypt, July 2010.
- Ericson Prize for the co-supervised graduation project entitled "IP Multimedia Subsystem (IMS) Mobile Application" in the Egyptian Engineering Day (EED) Competition hosted in Cairo, Egypt, July 2010.
- Third position award for the co-supervised graduation project entitled "Design and Implementation of Configurable GSM-VOIP gateway" in Made in Egypt (MIE) Competition hosted in Cairo, Egypt, July 2009.

International Participations

- **Romania**
  - Participation in the teaching activity and scientific cooperation meetings with the staff members at Vasile Goldiș Western University of Arad, Romania through Erasmus+ International Staff Mobility, May 2023.
- **United Kingdom (UK)**
  - Scientific visit to London Metropolitan University for discussing different scientific aspects and cooperation opportunities related to the two projects funded by the Science, Technology, and Innovation Funding Authority (STDF) with project ID: 44010 entitled "Helwan University Hackathon: Together Against COVID-19 (HU-HTAC)" and project ID:45442 entitled "IoT Enabled Geofencing System for Monitoring and Imposing COVID-19 Control Measures in Workplaces, Service Areas and Distributed Home Quarantine, May 2022.
  - Attending the closing meeting of the Erasmus+ funded project "Smart Grid Technology - A Master Programme / SGT-MAP" at the University of Strathclyde, Glasgow, Scotland, January 2020.
  - Participation in the training activity and scientific cooperation meetings with the staff members at Cardiff Metropolitan University through Erasmus+ International Credit Mobility (ICM) program for Staff Mobility, January – February 2020.
  - Attending the kickoff meeting of the Erasmus+ funded project "Smart Grid Technology - A Master Programme / SGT-MAP" at the University of Aberdeen, Scotland, February 2017.
- **United States of America (USA)**
  - Participation in the 10th IEEE Annual Ubiquitous Computing, Electronics and Mobile Communication Conference (UEMCON), New York City, 2019.
  - Scientific visit to University of Tennessee for discussing the possible collaboration in the field of Smart Grid, April 2014.
- **Austria**
  - Participation in the training activity provided by Alpen-Adria University, Klagenfurt in the context of Erasmus+ funded project "Smart Grid Technology - A Master Programme / SGT-MAP", September 2019.
  - Attending the workshop for the future of smart grid (WSGT2018) that organized in Alpen-Adria University in Klagenfurt, February 2018.
  - Attending the first progress meeting of the Erasmus+ funded project "Smart Grid Technology - A Master Programme / SGT-MAP" at Alpen-Adria University,

Klagenfurt, September 2017.

- **Spain**
  - Participation in the training activity and scientific cooperation meetings with the staff members of the School of Computer and Telecommunication Engineering at University of Granada (UGR) through Erasmus+ International Staff Mobility, July 2021.
  - Attending the second progress meeting of the Erasmus+ funded project "Smart Grid Technology - A Master Programme / SGT-MAP" at Seville University, Seville, September 2018.
- **Hungary**
  - Participation in the 42nd International Conference on Telecommunications and Signal Processing (TSP), Budapest, 2019.
- **Italy**
  - Scientific visit to International Telematic University UNINETTUNO for discussing different scientific aspects and cooperation opportunities between Helwan University and UNINETTUNO University, June 2024.
  - Participation in the International Symposium on Networks, Computers and Communications (ISNCC), Rome, June 2018.
- **Turkey**
  - Participation in the International Conference on Electrical and Electronics Engineering (ICEEE), Istanbul, August 2022.
  - Participation in the best innovative project event organized by ETRERA_2020 (Empowering Trans-Mediterranean Renewable Energy Research Alliance for Europe 2020 Challenges), April 2014.
- **France**
  - Participation in the 47th session of the Advanced Training Programme in Educational Planning and Management at the UNESCO International Institute of Educational Planning (IIEP), Paris, September 2011 – June 2012.
- **Netherland**
  - Site visit for a number of academic institutions and organizations in Amsterdam for discussing possible collaboration, 2012.
- **Belgium**
  - Site visit for a number of academic institutions and organizations in Brussels for discussing possible collaboration, 2012.
- **Kingdom Saudi of Arabia (KSA)**
  - Participation in the 14th IEEE International Conference on Computational Intelligence and Communication Networks (CICN2022) at Prince Mohammad Bin Fahd University (PMU), Al-Khobar, December 2022.
- **Morocco**
  - Participation in the IEEE Wireless Communications and Networking Conference (WCNC), Marrakesh, 2019.
- **Kuwait**
  - Providing technical training on Spectrum Management: Frequencies and its Engineering Measurements for Engineers of the Ministry of Communications in Kuwait, January 2015.
  - Providing technical training on Operation and Troubleshooting of GEPON Passive Components for Engineers of the Ministry of Communications in Kuwait, December 2014.
- **Sultanate of Oman**
  - Study visit to Ministry of Education and some basic and higher educational institutions in Muscat with UNESCO team from IIEP, March 2012.
- **Syria**
  - Scientific training visit in the Computer Center at Tishreen University, Latakia, July, 2001.

Educational Planning and Management Activities

- **Obtaining a Master degree in Educational Planning and Management with a specialization in Educational Planning and Analysis from the International Institute for Educational Planning (IIEP), UNESCO, Paris, France. The master program cover the following courses**
  - EPC201: Educational Planning: Contexts and Approaches.
  - EPC202: Statistical Tools for Educational Planning.
  - EPC203: Research Methods.
  - EPC204: Educational Sector Diagnosis.
  - EPC205: Educational Strategies and Policy Options.
  - EPC206: Formulation, Preparation and Implementation of Educational Polices and Plans.
  - EPA301: Educational Management Information System (EMIS).
  - EPA302: Projections and Simulation Models: Methods and Techniques.
  - EPA304: Quantitative Methods for Monitoring and Evaluating the Quality of Education.
  - Dissertation Title: An Effective Simulation Model for Higher Educational Planning in Egypt.
- **Worked as an Expert in Educational Planning (Feb. 2011 – Oct. 2012), Strategic Planning Unit (SPU), Ministry of Higher Education (MOHE), Egypt.**
  - Participated in proposing policies and strategies for higher education system in Egypt.
  - Participated in the conducted analysis for different sectors in the higher education system in Egypt.
- **Participated in updating the 10-years national master plan (2011-2021) for Higher Education sector in Egypt, Strategic Planning Unit (SPU), Ministry of Higher Education (MoHE).**
- **Participated in the preparation of the Strategic Plan of Higher Engineering Education Sector in Egypt, Strategic Planning Unit (SPU), Ministry of Higher Education (MoHE).**
  - Study the access and internal efficiency dimensions and writing chapters about them on the Strategic Plan for Higher Engineering Education in Egypt – Phase I: Analysis and Strategic Directions, Strategic Planning Unit, Ministry of Higher Education, Egypt.
- **Participated in the Post-Secondary vocational and technical education sector analysis with OECD, Strategic Planning Unit (SPU), Ministry of Higher Education (MoHE).**
  - Setting the terms of reference for the situational analysis.
  - Study the access and completion dimensions and writing chapters about them on the OECD study report "Post-Secondary Vocational and Technical Education in Egypt - Analysis and Strategic Directions".
- **Designed and developed a Balanced Score Card (BSC) simulation model for Helwan University**
  - The developed BSC model is designed for evaluating the performance of Helwan University in achieving the goals and objectives of its strategic plan through performance and outcome based indicators related to different dimensions of the plan.
  - The developed BSC simulation model has been approved by the University council to be adopted for evaluating plans for various colleges across the university.
- **Contributing as a co-author for developing the following studies and plans**
  - Strategic Plan for Higher Engineering Education in Egypt – Phase I: Analysis and Strategic Directions, Strategic Planning Unit, Ministry of Higher Education, Egypt.
  - Post-Secondary Vocational and Technical Education in Egypt - Analysis and Strategic Directions, OECD Study.
  - Updated National Master Plan for Higher Education Sector in Egypt (2011 – 2021).
  - Strategic Plan for Helwan University (2015-2020).
  - Strategic Plan for Helwan University (2021-2025).

- **Working as a Head of the Strategic Planning Unit (SPU) of Helwan University (Nov. 2016 – Present).**
  - Managing the implementation of Helwan University strategic plan at all levels.
  - Setting the policies, priorities and strategic directions with the higher management level of the University.
  - Coordinating with various strategic entities and central departments at the university to achieve the goals of the strategic plan and support the implementation of its executive projects in the various colleges.
  - Managing the recruitment and capacity building of the human resources required for managing and evaluating the implementation of Helwan University strategic plan.
  - Managing the preparation of new strategies and studies.
  - Reporting to the University president about different planning activities.

Scientific Review Activities

Reviewer in the following International journals and letters

- IEEE Transactions on Network and Service Management
- IEEE Transactions on Vehicular Technology
- IEEE Transactions on Information Forensics and Security
- IEEE Transactions on Smart Grid
- IEEE Transactions on Learning Technologies
- IEEE Internet of Things Journal
- Transactions on Emerging Telecommunications Technologies (Wiley)
- IEEE Access Journal
- Ad Hoc Networks Journal
- IEEE Communications Letters
- IEEE Signal Processing Letters
- IET Communications Journal
- IET Signal Processing Journal
- Computer Networks Journal (Elsevier)
- International Journal of Electrical Power & Energy Systems (Elsevier)

Reviewer for funded research projects in the following funding agencies

- Science, Technology and Innovation Funding Agency (STDF), Ministry of Higher Education and Scientific Research (MoHESR).
- National Telecommunication Regulatory Authority (NTRA), Ministry of Communication and Information Technology (MCIT): 13 funded research projects in CFP4, CFP5, CFP6, CFP7 and CFP8.
- Borg Al Arab Innovation Cluster.

Publications

Peer Reviewed Journals

1. A. A. Khalifa, A. M. A. El-Haleem, **M. M. Elmesalawy** and H. M. Z. Badr, "Ambient Backscatter Communication System Empowered by Matching Game and Machine Learning for Enabling Massive IoT Over 6G HetNets," in *IEEE Access*, vol. 12, pp. 53912-53927, 2024. **[IF:3.4, Ranked Q2]**
2. M. G. Anany, **M. M. Elmesalawy**, I. I. Ibrahim and A. M. A. El-Haleem, "Location and User Association Optimization in Multiple Radio Access UAV-Assisted Heterogeneous IoT Networks," in *IEEE Access*, vol. 12, pp. 59273-59288, 2024. **[IF:3.4, Ranked Q2]**

3. N. A. Elmosilhy, **M. M. Elmesalawy**, I. I. Ibrahim and A. M. A. El-Haleem, "Joint Q-Learning Based Resource Allocation and Multi-Numerology B5G Network Slicing Exploiting LWA Technology," in *IEEE Access*, vol. 12, pp. 22043-22058, 2024. **[IF:3.4, Ranked Q2]**
4. M. M. Abdelhakam**, M. M. Elmesalawy**, I. I. Ibrahim, et al., "Collaborative CoMP and trajectory optimization for energy minimization in multi-UAV-assisted IoT networks with QoS guarantee," Computer Networks, vol. 237, 2023. **[IF:5.6, Ranked Q1]**
5. Amal Megahed, **Mahmoud M. Elmesalawy**, Ibrahim I. Ibrahim, Ahmed M. Abd El-Haleem, "Deep learning-assisted reconfigurable intelligent surface for enhancing 6G mobile networks," Trans Emerging Tel Tech, 2023. **[IF:3.31, Ranked Q2]**
6. K. M. Naguib, I. I. Ibrahim, **M. M. Elmesalawy** and A. M. A. Elhaleem, "DL-Based Minimizing Virtual Environment Resource Usage in 6G Cellular Networks," in IEEE Access, vol. 11, pp. 118241-118252, 2023. **[IF:3.9, Ranked Q2]**
7. M. M. Abdelhakam, **M. M. Elmesalawy**, I. I. Ibrahim, et al., "Joint Trajectory and Comp Clustering Optimization in UAV-Assisted Cellular Systems: A Coalition Formation Game Approach," EURASIP Journal on Wireless Communications and Networking, vol. 93, 2023. **[IF:2.559, Ranked Q1]**
8. A. M. A. El-Haleem, M. G. Anany, **M. M. Elmesalawy** and E. S. E. -D. Bakr, "A Matching Game-Based Laboratory Learning System for Resources Management in Remote Laboratories," in *IEEE Access*, vol. 11, pp. 6246-6260, 2023. **[IF:3.9, Ranked Q2]**
9. A. M. Abd El-Haleem, M. M. Eid, **M. M. Elmesalawy** and H. A. H. Hosny, "A Generic AI-Based Technique for Assessing Student Performance in Conducting Online Virtual and Remote Controlled Laboratories," in IEEE Access, vol. 10, pp. 128046-128065, 2022. **[IF:3.476, Ranked Q2]**
10. Hassan Hosny, Hadeer A., Abdulrahman A. Ibrahim, **Mahmoud M. Elmesalawy**, and Ahmed M. Abd El-Haleem, "An Intelligent Approach for Fair Assessment of Online Laboratory Examinations in Laboratory Learning Systems Based on Student's Mouse Interaction Behavior" *Applied Sciences* 12, no. 22, 2022. **[IF:2.838, Ranked Q2]**
11. M. M. Abdelhakam, **M. M. Elmesalawy**, I. I. Ibrahim, S. G. Sayed, "Two-timescale optimization approach for coordinated multi-point design in unmanned aerial vehicle-assisted cellular networks," Trans Emerging Tel Tech, 2022. **[IF:3.310, Ranked Q2]**
12. Ahmed M. Abd El-Haleem, Noor El-Deen M. Mohamed, Mostafa M. Abdelhakam, and **Mahmoud M. Elmesalawy**, "A Machine Learning Approach for Movement Monitoring in Clustered Workplaces to Control COVID-19 Based on Geofencing and Fusion of Wi-Fi and Magnetic Field Metrics" Sensors, no. 15: 5643, 2022. **[IF:4.050, Ranked Q2]**
13. Esmat, H. H., **Mahmoud M. Elmesalawy**, and I. I. Ibrahim. "Resource allocation for D2D-Based AMI Communications Underlaying LTE Cellular Networks." arXiv preprint arXiv: 2106.00782, 2021.
14. Amany M. Saleh, **Mahmoud M. Elmesalawy**, Korany. R. Mahmoud, I.I. Ibrahim, "Impact of different finite MIMO array geometries on system throughput with considering mutual coupling and edge effect between array elements," Ain Shams Engineering Journal, ISSN 2090-4479, 2021. **[IF:1.949, Ranked Q2]**
15. Ahmed I. Abdulshakoor, M.G. Anany and **Mahmoud M. Elmesalawy**, "Outage-aware Matching Game Approach for Cell Selection in LTE/WLAN Multi-RAT HetNets," in Computer Networks, 107596, ISSN 1389-1286, 2020. **[IF:3.111, Ranked Q2]**
16. M. M. Abdelhakam, **M. M. Elmesalawy**, M. K. Elhattab and H. H. Esmat, "Energy-efficient BBU pool virtualisation for C-RAN with quality of service guarantees," in *IET Communications*, vol. 14, no. 1, pp. 11-20, 3 1 2020. **[IF:1.664, Ranked Q3]**
17. M. Anany, **M. M. Elmesalawy** and A. M. Abd El-Haleem, "Matching Game-Based Cell Association in Multi-RAT HetNet Considering Device Requirements," in *IEEE Internet of Things Journal*, vol. 6, no. 6, pp. 9774-9782, Dec. 2019. **[IF:9.936, Ranked Q1]**
18. N. A. Elmosilhy, **M. M. Elmesalawy** and A. M. Abd Elhaleem, "User Association With Mode Selection in LWA-Based Multi-RAT HetNet," in *IEEE Access*, vol. 7, pp. 158623-158633, 2019. **[IF:4.098, Ranked Q1]**

19. M. K. Elhattab, **M. M. Elmesalawy**, F. M. Salem and I. I. Ibrahim, "Device-Aware Cell Association in Heterogeneous Cellular Networks: A Matching Game Approach," in *IEEE Transactions on Green Communications and Networking*, vol. 3, no. 1, pp. 57-66, March 2019.
20. H.H. Esmat, **M. M. Elmesalawy**, I.I. Ibrahim, "Uplink resource allocation and power control for D2D communications underlaying multi-cell mobile networks," AEU - International Journal of Electronics and Communications, Volume 93, Pages 163-171, Sep., 2018. **[IF:2.853, Ranked Q2]**
21. H. H. Esmat, **M. M. Elmesalawy**, M. M. Abdelhakam, M. K. Elhattab, "Joint radio resource and power allocation using Nash bargaining game for H-CRAN with nonideal fronthaul links," Transaction on Emerging Telecommunications Technologies; e3449, 2018. **[IF:1.258, Ranked Q2]**
22. M. K. Elhattab, **M. M. Elmesalawy**, T. Ismail, H. H. Esmat, M. M. Abdelhakam and H. Selmy, "A Matching Game for Device Association and Resource Allocation in Heterogeneous Cloud Radio Access Networks," in *IEEE Communications Letters*, vol. 22, no. 8, pp. 1664-1667, Aug. 2018. **[IF:3.457, Ranked Q1]**
23. M. M. Abdelhakam, **M. M. Elmesalawy**, K. R. Mahmoud and I. I. Ibrahim, "A Cooperation Strategy Based on Bargaining Game for Fair User-Centric Clustering in Cloud-RAN," in *IEEE Communications Letters*, vol. 22, no. 7, pp. 1454-1457, July 2018. **[IF:3.457, Ranked Q1]**
24. M. Abdelhakam, **Mahmoud M. Elmesalawy**, Korany R. Mahmoud and I. Ibrahim, "Efficient WMMSE Beamforming for 5G mmWave Cellular Networks Exploiting the Effect of Antenna Array Geometries," in *IET Communications*, vol. 12, no. 2, pp. 169-178, 2018. **[IF:1.779, Ranked Q2]**
25. M. Elhattab, **M. Elmesalawy** and I. Ibrahim, "Opportunistic Device Association for Heterogeneous Cellular Networks with H2H/IoT Co-existence under QoS Guarantee," in *IEEE Internet of Things Journal*, vol. 4, no. 5, pp. 1360-1369, 2017. **[IF:7.596, Ranked Q1]**
26. H. H. Esmat, **M. M. Elmesalawy** and I. I. Ibrahim, "Joint channel selection and optimal power allocation for multi-cell D2D communications underlaying cellular networks," in *IET Communications*, vol. 11, no. 5, pp. 746-755, 3 30 2017. **[IF:1.061, Ranked Q3]**
27. M. K. Elhattab, **M. M. Elmesalawy**, I. I. Ibrahim, "Distributed device association for multiservice heterogeneous cellular networks with QoS provisioning," *Transaction on Emerging Telecommunications Technologies*; e3181, 2017. **[IF:1.535, Ranked Q2]**
28. M. K. Elhattab, **M. M. Elmesalawy** and I. I. Ibrahim, "A Game Theoretic Framework for Device Association in Heterogeneous Cellular Networks With H2H/IoT Co-Existence," in *IEEE Communications Letters*, vol. 21, no. 2, pp. 362-365, Feb. 2017. **[IF:1.988, Ranked Q1]**
29. Ahmed Samir, **Mahmoud M. Elmesalawy**, A. S. Ali, and Ihab Ali, "An Improved LTE RACH Protocol for M2M Applications," Mobile Information Systems, vol. 2016, Article ID 3758507, 11 pages, 2016. **[IF:0.872, Ranked Q3]**
30. Ahmed Samir, **Mahmoud M. Elmesalawy**, A. S. Ali, and Ihab Ali, "Partial Contention Free Random Access Protocol for M2M Communications in LTE Networks," Journal of Wireless Networking and Communications, 6(3), 66-72, 2016.
31. H. H. Esmat, **M. M. Elmesalawy** and I. I. Ibrahim, "Adaptive Resource Sharing Algorithm for Device-to-Device Communications Underlaying Cellular Networks," in *IEEE Communications Letters*, vol. 20, no. 3, pp. 530-533, March 2016. **[IF:1.291, Ranked Q2]**
32. **Mahmoud M. Elmesalawy**, "D2D Communications for Enabling Internet of Things Underlaying LTE Cellular Networks," Journal of Wireless Networking and Communications, Vol. 6 No. 1, pp. 1-9, 2016.
33. **Mahmoud M. Elmesalawy**, A. S. Ali, "A Grouped System Architecture for Smart Grids Based AMI Communications over LTE," International Journal of Wireless and Mobile Networks, Vol. 7 No. 6, pp. 55-70, 2015.
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43. E. M. Elkholy, M. A. Mehaseb, F. Ibrahim and **M. M. Elmesalawy**, "SWIPT MISO Wireless Communication System via Intelligent Reflecting Surface," *2024 14th International Conference on Electrical Engineering (ICEENG)*, pp. 294-299, Cairo, Egypt, 2024.
44. Ramy S. A. Afia, Helmy M. El Zoghby, Ahmed F. Bendary, A. Safwat, A. Hazem, Haitham S. Ramadan, **M. M. Elmesalawy**, "Sustainable Hybrid Energy System Based on Green Hydrogen with Efficient Management Using AI and IoT: Concept and Architecture," IEEE 24th International Middle East Power Systems Conference (MEPCON 2023), pp. 1-6, Egypt, 2023.
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Research Profile

- **Research Interests:** 6G mobile Communications, Heterogeneous Networks (HetNets), Multi-RATs Wireless Networks, Internet of Things (IoT) Communications, Mobile Data Offloading, UAVs Communications, Reconfigurable Intelligent Surfaces (RIS), Smart Grid Communication Technologies and Artificial Intelligence (AI) in Communication systems.
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