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Hamada Esmaiel (C.V)

PERSONAL DETAILS

Name	Hamada Ahmed Hamada Esmaiel.
Occupation	Associate Professor, Faculty of Engineering, Aswan University, Egypt.
Nationality	Egyptian.
Address	Aswan Faculty of Engineering, Aswan, 81542, Egypt.

		Postcode	81542
Telephone Numbers	(+2) 01124237319	**Email**	h.esmaiel@aswu.edu.eg
	(+2) 01033487772		h.esmaiel@xmu.edu.cn
Skype ID	elshaarany		

QUALIFICATIONS

Degree	**School/ Collage**	**Period**
Postdoctoral Certificate	Department of Information and Communication, School of Informatics, Xiamen University, Xiamen, China.	September 2019 – March 2022.
Ph.D. (Dr. Eng.)	School of Engineering and ICT, University of Tasmania, Hobart, Australia.	September 2012 – August 2015.
Graduate Certificate in Research	School of Engineering and ICT, University of Tasmania, Hobart, Australia.	September 2012 – August 2015.
Ph.D. Courses	Faculty of Engineering, Wonkwang University, Iksan, South Korea.	January 2011 – July 2011.
M.Sc.	Faculty of Engineering, South Valley University, Aswan, Egypt.	October 2007 – July 2010.
B.Sc. (1'st Class Honors)	Faculty of Engineering, South Valley University, Aswan, Egypt.	October 2000 – June 2005.

EDUCATION

Degree	**Field of study**
Postdoctoral Certificate	Title "Energy Efficient Underwater Acoustic Communications".
Ph.D. (Dr. Eng.)	Thesis title "Advanced Multi-Band Modulation Technology for Underwater Communication Systems".
Graduate Certificate in Research	The Graduate Certificate in Research assists higher-degree research candidates in systematically acquiring the skills and training they need to complete their research.
Doctoral Degree Course	Wireless Communication Engineering, Project "OFDM-Based Vehicular Communication System and Network".
M.Sc.	Thesis title "Signal Transmission in Orthogonal Frequency Division Multiplexing (OFDM) Systems with Minimum Peak-to-Average Power Ratio (PAPR)".
B.Sc.	Electronics and Communication, Graduation Project titled "CDMA Simulation & Building Blocks".

WORK EXPERIENCES

Position	Place	Period
Assistant Professor	Department of Electronics and Communication Engineering, College of Engineering, A'Sharqiyah University, Ibra 400, Oman.	February 2024-present.
Associate Professor	Faculty of Engineering, Aswan University, Aswan 81542, Egypt.	December 2020-present.
Assistant Research Fellow	School of Informatics, Xiamen University, Xiamen 361005, China.	September 2019-March 2022.
Assistant Professor	Faculty of Engineering, Aswan University, Aswan 82542, Egypt.	December 2015-December 2020.
Visiting Scholar	Faculty of Engineering, University of The Ryukyus, Okinawa 903-0213, Japan.	December 2018-July 2019.
Ph.D. Researcher	School of Engineering and ICT, University of Tasmania 7001, Australia.	September 2012 – August 2015
Research Assistant	Faculty of Engineering, Wonkwang University, 460 Iksan-daero, Iksan-si, Jeollabuk-do, South Korea.	March 2011- July 2011.
Assistant Lecturer	Faculty of Engineering, Aswan University, Aswan 81542, Egypt.	November 2010 – December 2015.
Teaching Assistant	Faculty of Engineering, Aswan University, Aswan 81542, Egypt.	March 2007 – November 2010.

ADMINISTRATIVE POSITIONS

Position	Place	Period
Director	Communication Research Center (CRC), Faculty of Engineering, Aswan University, Aswan, Egypt.	August 2021 – March 2024.
Member	Faculty of Engineering Council, Aswan University, Aswan, Egypt.	Sept. 2023 – August – 2024.
Vice Dean for Education and Student Affairs	Faculty of Commerce, Aswan University.	Feb. 2022 - Feb 2024.
Member	Board of Directors, Integrated Circuits and Embedded Systems Research Center, Faculty of Engineering, Aswan University, Aswan, Egypt.	Jan. 2023 – March 2024
Member	Council of Electrical Engineering Department, Faculty of Engineering, Aswan University, Aswan, Egypt.	March 2021 – March 2024.
Director	Aswan Wireless Communication Research Center (AWCRC), Faculty of Engineering, Aswan University, Aswan, Egypt.	November 2017 - December 2018.
Deputy Director	Aswan Wireless Communication Research Center (AWCRC), Faculty of Engineering, Aswan University, Aswan, Egypt.	October 2016 - November 2017.

TRAINING COURSES

Research-Based Business and Transfer Support, a workshop organized by Egyptian Knowledge Bank & Knowledge (Egypt/UAE), 2022.

Technicalities of Design and Conduct Scientific Research, FLDP Center, Assiut University, Egypt, 2022.

Training Envoys in Foreign Missions, The National Training Academy, Egypt, 2022.

Fundamentals of Digital Transformation Certificate, ICTC Center, Aswan University, 2021.

University Administration, FLDP Center, Aswan University, Egypt, 2015.

Professional Behavior of University Faculty Members, South Valley University, Egypt, 2012.

Scientific Publication, South Valley University, Egypt, 2010.

Communication Skills in Different Types of Education, South Valley University, Egypt, 2010.

Organizing Academic Conferences, South Valley University, Egypt, 2009.

Organizing Examinations and Student Evaluation, South Valley University, Egypt, 2009.

Preparation of University Teachers, South Valley University, Egypt, 2009.

Time and Meetings Management, South Valley University, Egypt, 2008.

Quality and Accreditation Assurance for University Education, South Valley University, Egypt, 2007.

Effective Meeting Management, South Valley University, Egypt, 2007.

FIELDS OF INTEREST

MmWave Technology for 5G Applications; Underwater Communication; Li-Fi Data Transmission; Digital Signal Processing for Communication; Massive MIMO; Multi-Carrier Modulation; Physical Layer Communications and Device to Device Communications.

TEACHING INTERESTS

I have taught the following undergraduate and post-graduate courses at Aswan University, Aswan Faculty of Engineering, and the Arab Academy for Science, Technology & Maritime Transport (Aswan Branch):

Under-Graduate Courses:

Electronics; Electronics Circuits; Electronic Devices; Electrical Tests; Digital Signal Processing (DSP); Digital Communication; Analog Communication; Mobile Communication; Satellite Communication; Advanced Wireless Communication System; Signal and System; Communication Networks.

Post-Graduate Courses:

Wireless Communication System; Mobile Communication; Theory of Analog and Digital Communications.

- I have supervised the following B.Sc. Projects:

1) Implantation and Performance Evaluation of Underwater Sensor Networks for Flood Detection.
2) Web-based System for Precision Agriculture Applications in 5G-Based Internet of Things.
3) NOMA for Future MmWave Wireless Communications.
4) Li-Fi Data Transmission.
5) Implementation and Performance Analysis of UW-OFDM in Time-Varying Channel.
6) Code Division Multiple Access (CDMA) Simulation and Building Blocks using FPGA Implementation.
7) Universal Mobile Telecommunication System (UMTS) Simulation and Building blocks.
8) Wireless Monitoring and Control System.
9) GPS Hardware Implementation.

COMPLETED RESEARCH SUPERVISION

Degree	Title	Completed
Masters	Improving computer-aided diagnosis systems for skin cancer detection using texture analysis methods. Candidate: Habeba Mahmoud Abdel-Kader	Aswan University, 2023

Masters	Improving the Performance of Diabetic Retinopathy Computer-Aided Diagnosis Systems using an Ensemble of Texture Analysis Methods. Candidate: Shimaa Ragab Abdel-Rady	Aswan University, 2023
Masters	Classification of Heart Sounds Using Nonlinear Autoregressive Networks with Exogenous Inputs. Candidate: Sara Khaled Abdelnadeer Mahmoud	Aswan University, 2023
Masters	An Active, Continuous Camera-based System for Monitoring Heart Rate. Candidate: Somaya Abdel-Khier	Aswan University, 2023
PhD	A Novel Approach for Management of The Interworking In 5G Mobile Networks. Candidate: Ahmed Soliman Ali Mubarak.	Aswan University, 2019
PhD	Device-To-Device Communications in Millimeter-Wave 5G Cellular Networks. Candidate: Ahmed Abdelreheem Mohamed.	Aswan University, 2019
Masters	Performance Evaluation of MmWave For 5G Networks. Candidate: Ahmed M. Nor.	Aswan University, 2019
Masters	Design Of Microstrip Patch Antennas Using Metamaterials and Characteristics Model Theory For 5G Wireless Communication. Candidate: Ahmed Abdelaziz Taha Hassan.	Aswan University, 2019
Masters	Efficient Wi-Fi/WiGig Integration for Ultra-High Capacity 5G Access Points and Their Applications. Candidate: Rehab Abdel-Raouf.	Aswan University, 2019
Masters	Multicarrier Communication for Underwater Acoustic Channel. Candidate: Ahmed Ezzat.	Aswan University, 2019
Masters	Efficient Routing Protocols for Hybrid Underwater Wireless Sensor Networks. Candidate: Mona Mostafa.	Aswan University, 2019
Masters	Robust Multi-Carrier Modulation Techniques for Vehicle-to-Vehicle (V2V) Communication Systems. Candidate: Eman Rashedy	Aswan University, 2019
Masters	Li-Fi Channel Estimation Techniques. Candidate: Azza Alamir	Aswan University, 2019

EXTERNAL EXAMINER FOR Ph.D./MASTER THESIS

Degree	**Title**	**University / Year**
Masters	Automatic Modulation Classification Using Deep Learning Neural Networks in Wireless Communication Systems. Candidate: Mona Lotfy Mohamed	South Valley University, Egypt, 2023

AWARDS

Jun. 2021	Aswan University Publication Award, Egypt.
Dec. 2020	Scientific Excellence, for Egyptian Associate Professors.
Sep. 2019	Xiamen University, Postdoctoral Fellowship, Xiamen, China.

Jan. 2020	Excellent Postdoctoral Funding Project, Xiamen University, China.
May 2020	Aswan University Publication Award, Egypt.
Jun. 2019	Aswan University Publication Award, Egypt.
Dec. 2018 – Jun. 2019	Egypt-Japan Education Partnership for Postdoc Research, Egypt- Japan.
Sep. 2012 – Aug. 2015	The University of Tasmania Ph.D. Fellowship, Tasmania, Australia.
Jan. 2011 – Jul. 2011	Wonkwang University Research Scholarship, Iksan, South Korea.

SERVICES AND MEMBERSHIPS

The guest editor for the Sensors journal Special Issue "*Underwater Wireless Communications*". https://www.mdpi.com/journal/sensors/special_issues/UWC
The guest editor for the Hindawi journal "*Wireless Communications and Mobile Computing*" for Underwater Wireless Communications and Networks Special Issue.
https://www.hindawi.com/journals/wcmc/si/263437/

A TPC at ICT-2016, 2017, 2017, 2018, 2019, 2020; IEEE Global: Workshops: IEEE Workshop on Low Power Wide Area networking technologies for the emerging Internet of Things, ISCC-2017 and ICIST 2013, Chair ITCE 2018.

A reviewer for the Journal of IEEE Transactions on Signal Processing, IEEE Vehicular Technology Magazine, IEEE Transactions on Vehicular Technology, IEEE Transactions on Wireless Communication, IEEE Open Journal of the Communications Society, IEEE Access, IEEE Signal Processing Letters, IEEE Internet of Things Journal, IEEE Transactions on Green Communications and Networking, IEEE Open Journal of Signal Processing, IEEE Intelligent Transportation Systems Transactions and Magazine, IET Signal Processing, Frontiers in Marine Science, Electronics (MDPI), Sensors (MDPI), Wireless Personal Communications (Springer), International Journal of Antennas and Propagation (Hindawi), International Measurement Confederation, IEEE Open Journal of the Industrial Electronics Society, IEEE Transactions on Cognitive Communications and Networking, ETRI Journal, IET Communications, Journal of Marine Science and Engineering Mathematical, Problems in Engineering, Physical Communication, IEEE Transactions on Aerospace and Electronic Systems, Wireless Communications and Mobile Computing, IEEE Open Journal of Vehicular Technology, Defence Technology, IEEE Potentials, International Journal of Communication Systems, IEEE Systems Journal, IEEE Wireless Communications Letters, IEEE Communications Letters, and China Communication.

The financial Co-Chair of IEEE ITCE 2018.

The co-general chair of IEEE ISWC 2018.

A member of the syndicate of Egyptian Engineers.
https://www.eamc-engs.org/

IEEE Communication Society member.
https://www.comsoc.org/

RESEARCH PROJECTS

Title	**Place**	**My Job**	**Period**
AQUA-EIoUTs: Effective Internet of Underwater Things for The Aquaculture Industry	Aswan University, Egypt.	Principal Investigator	October 2023 - Sep. 2025
Consortium Blockchain for Secure Data Dissemination in Smart Cities	Luxor University, Egypt.	Member	Nov. 2023 – May 2025

High Data Transmission for The Internet of Underground Things	Aswan University, Egypt.	Principal Investigator	May 2022 – May 2023
Detecting, Countermeasure, and Communication System	Xiamen University	Co-Principal Investigator	August 2020 – July 2021
Communication Radiation Source Identification Test Based on Signal Characteristics.	Xiamen University	Member	July 2020 – June 2021
NOMA for Underwater Communication	Xiamen University	Member	Sep. 2019 – Sep. 2021
LTE/WiFi/WiGig Internetworking for Future 5G Cellular Networks.	Aswan University, Egypt.	Principal Investigator	Oct. 2016 ~ Oct. 2018
OFDM-Based Vehicular Communication System and Network.	Wonkwang University, Iksan, South Korea.	Member	January 2011 – July 2011

PUBLICATIONS

Refereed Journal Papers

1) **Hamada Esmaiel**, Guolin Zhao, Zeyad A. H. Qasem, Jie Qi and Haixin Sun "Double-Layer RRT* Objective Bias Anytime Motion Planning Algorithm" *Robotics*, vol. 13, no. 3, 2024.

2) Ruiping Song; Xiao Feng; Junfeng Wang; Haixin Sun; Mingzhang Zhou; **Hamada Esmaiel** "Underwater Acoustic Nonlinear Blind Ship Noise Separation Using Recurrent Attention Neural Networks" *Remote Sensing*, vol. 16, no. 4, 2024.

3) **Hamada Esmaiel**, Hussein A. Leftah, Naveed Ur Rehman Junejo, Haixin Sun "Deep Learning-based Index Modulation for Underground Communications" *IEEE Open Journal of the Communications Society*, vol. 169, 2024.

4) Ruiping Song; Xiao Feng; Junfeng Wang; Haixin Sun; Mingzhang Zhou; **Hamada Esmaiel** "Underwater Acoustic Nonlinear Blind Ship Noise Separation Using Recurrent Attention Neural Networks" *Remote Sensing*, vol. 16, no. 4, 2024

5) Mohamed Shoaib; Heba Emara; Jun Zhao; Walid El-Shafai; Naglaa F. Soliman; Ahmed S. Mubarak; Osama A. Omer; Fathi E. Abd El-Samie; **Hamada Esmaiel** "Deep Learning Innovations in Diagnosing Diabetic Retinopathy: The Potential of Transfer Learning and the DiaCNN Model" *Computers in Biology and Medicine*, vol. 169, 2024.

6) Mohamed A. Mohamed; Hassan A. Hassan; Mohamed H. Essai; **Hamada Esmaiel**; Ahmed S. Mubarak; Osama A. Omer "Modified state activation functions of Deep Learning-based SC-FDMA Channel Equalization System" *EURASIP Journal on Wireless Communications and Networking, 2023.*

7) Hassan A. Hassan; Mohamed H. Essai; **Hamada Esmaiel**; Ahmed S. Mubarak; Osama A. Omer "Deep Learning-Based SC-FDMA Channel Equalization" *International Journal of Electrical and Electronic Engineering & Telecommunications*, 2023

8) Hassan Ahmed Hassan, Mohammed A. Mohammed, Mohamed H. Essai, Ahmed Mubarak, **Hamada Esmaiel**, Osama A. Omer "An efficient and reliable OFDM channel state estimator using deep learning convolutional neural networks" JES. Journal of Engineering Sciences, 2023.

9) Mohamed A. Mohamed, Hassan A. Hassan, Mohamed H. Essai, **Hamada Esmaiel**, Ahmed S. Mubarak, and Osama A. Omer "Modified gate activation functions of Bi-LSTM-based SC-FDMA channel equalization" *Journal of Electrical Engineering*, vol. 74, no. 4, pp. 167-176, 2023.

10) Junejo, Naveed Ur Rehman, Mariyam Sattar, Saifullah Adnan, Haixin Sun, Abuzar B. M. Adam, Ahmad Hassan, and **Hamada Esmaiel** "A Survey on Physical Layer Techniques and

Challenges in Underwater Communication Systems" *Journal of Marine Science and Engineering*, vol. 11, no. 4, 2023.

11) Hassan, Hassan A., Mohamed A. Mohamed, Mohamed H. Essai, **Hamada Esmaiel**, Ahmed S. Mubarak, and Osama A. Omer. "Effective deep learning-based channel state estimation and signal detection for OFDM wireless systems." *Journal of Electrical Engineering*, vol. 74, no. 3, pp. 167-176, 2023.

12) Heba Nada, Osama Omer, **Hamada Esmaiel**, Mahmoud Ashour, Amany Arafa "Deep Learning Networks for Non-Destructive Detection of Food Irradiation" *Revue d'Intelligence Artificielle*, vol. 37, no. 3, pp. 551-556, June 2023.

13) Shimaa Mahmoud, Osama Ahmed Omer, Habeba Mahmoud, **Hamada Esmaiel**, Mohamed Abdel-Nasser "Diabetic retinopathy detection in eye fundus images using deep transfer learning and robust feature extractors" *Aswan University Journal of Sciences and Technology*, vol. 3, no. 1, pp. 69-77, 2023.

14) **Hamada Esmaiel** and Haixin Sun "Energy Harvesting for TDS-OFDM in NOMA-Based Underwater Communication Systems" in *Sensors*, vol. 22, no. 15, 2022.

15) Naveed UR Rehman Juneo, **Hamada Esmaiel**, Mariyam Sattar, Haixin Sun, Muhammad Amir Khalil, Ihsan Ullah "Sea Experimental for Compressive Sensing Based Sparse Channel Estimation of Underwater Acoustic TDS-OFDM System," in *Wireless Communications and Mobile Computing*, 2022.

16) Zeyad A. H. Qasem, Junfeng Wang, Hussein A. Leftah, Haixin Sun, Jie Qi, and **Hamada Esmaiel**" Underwater Acoustic Real Signal DHT-OFDM with Index Modulation" in *IEEE Journal of Oceanic Engineering*, vol. 48, no. 1, pp. 246 - 259, Jan. 2022.

17) Xiao Feng, Xuebo Zhang, Ruiping Song, Junfeng Wang, Haixin Sun, **Hamada Esmaiel** "Direction of arrival estimation under Class A modelled noise in shallow water using variational Bayesian inference method" in *IET Radar, Sonar & Navigation, 2022*.

18) Zeyad A. H. Qasem, Hussein A. Leftah, Haixin Sun, and **Hamada Esmaiel** "Precoded IM-OFDM-SS for underwater acoustic communication" in *Wireless Communications and Mobile Computing*, 2022.

19) **Hamada Esmaiel**, Dongri Xie, Zeyad A. H. Qasem, Haixin Sun, Jie Qi and Junfeng Wang "Multi-Stage Feature Extraction Method for Ship-Radiated Noise" in *Sensors*, vol. 22, no. 1, 2021.

20) Junfeng Wang, Yue Cui, Haixin Sun, Xiao Feng, Guangjie Han, Miaowen Wen, Jianghui Li, and **Hamada Esmaiel** "K-Factor Estimation for Wireless Communications over Rician Frequency-Flat Fading Channels" in *IEEE Wireless Communications Letters*, vol. 10, no. 9, pp. 2037-2040, Sept. 2021.

21) Zeyad A. H. Qasem, J. Wang, X. Kuai, H. Sun and **H. Esmaiel**, "Enabling Unique Word OFDM for Underwater Acoustic Communication," in *IEEE Wireless Communications Letters*, vol. 10, no. 9, pp. 1886-1889, Sept. 2021.

22) Zeyad A. H. Qasem, Hussein A. Leftah, Haixin Sun, Jie Qi and **Hamada Esmaiel** "X-transform Time-Domain Synchronous IM-OFDM-SS for Underwater Acoustic Communication" in *IEEE Systems Journal*, vol. 16, no. 2, pp. 1984-1995, June 2022.

23) Zeyad A. H. Qasem, Hussein A. Leftah, Haixin Sun, Jie Qi, Junfeng Wang, and **Hamada Esmaiel** "Deep Learning-based Code Indexed Modulation for Autonomous Underwater Vehicles systems" in *Vehicular Communications*, vol. 28, 2021.

24) Zeyad AH Qasem, **Hamada Esmaiel,** Haixin Sun, Jie Qi, Junfeng Wang "Deep Learning-Based Spread-Spectrum FGSM for Underwater Communication" in *Sensors*, vol. 20, no. 21, 2020.

25) **Hamada Esmaiel**, Zeyad A. H. Qasem, Haixin Sun, Jie Qi, Junfeng Wang "Wireless Information and Power Transfer for Underwater Acoustic Time-Reversed NOMA" in *IET Communications*, vol. 14, no. 19, pp. 3394 – 3403, 2020.

26) Shuangshuang Li, Haixin Sun, **Hamada Esmaiel** "Underwater TDOA Acoustical location based on Majorization-Minimization optimization" in *Sensors*, vol. 20, no. 16, 2020.

27) Azza Alamir, **Hamada Esmaiel,** and Hany S. Hussein "Efficient Optical MIMO-OFDM Channel Estimation Based on Correntropy Compressive Sensing" in *Wireless Personal Communications*, vol. 115, pp. 1955–1971, 2020.

28) Hao Zhang, Mingzhang Zhou, Haixin Sun, Guolin Zhao, Jie Qi, JUNFENG WANG, and **Hamada Esmaiel** "Que-Fi: A WIFI Deep Learning-Based Queuing People Counting" in *IEEE Systems Journal*, vol. 15, no. 2, pp. 2926-2937, June 2021.

29) Dongri Xie, **Hamada Esmaiel**, Haixin Sun, Jie Qi, and Zeyad A. H. Qasem "Feature Extraction of Ship-Radiated Noise Based on Enhanced Variational Mode Decomposition, Normalized Correlation Coefficient and Permutation Entropy" in *Entropy*, vol. 22, no. 4, 2020.

30) Junfeng Wang, Yue Cui, Hao Jiang, Gaofeng Pan, Haixin Sun, Jianghui Li, and **Hamada Esmaiel** "Estimation of Rice Factor Ratio for Doubly Selective Fading Channels" in *IEEE Access*, vol. 8, no.1, pp. 31330- 31340, February 2020.

31) Junfeng Wang, Yue Cui, Jianghui Li, Haixin Sun, Qiang Li, Biao Wang, Mingzhang Zhou, Zeyad A. H. Qasem, and **Hamada Esmaiel** "On orthogonal coding-based modulation" in *IEEE Communications Letters*, vol. 24, no. 4, pp. 816-820, April 2020.

32) **Hamada Esmaiel**, Zeyad A. H. Qasem, Haixin Sun, Junfeng Wang, Naveed Ur Rehman "Underwater Image Transmission using Spatial Modulation Unequal Error Protection for Internet of Underwater Things" in *Sensors*, vol. 19, no. 23, pp. 1-13, 2019.

33) Saifullah Adnan, Yuli Fu, Naveed Ur Rehman Junejo, Zhen Chen, **Hamada Esmaiel** "Sparse Detection with Orthogonal Matching Pursuit in Multiuser Uplink Quadrature Spatial Modulation MIMO System" in *IET Communications*, vol. 13, no 20, pp. 3472 – 3478, 2019.

34) Wang, Junfeng, Yue Cui, Haixin Sun, Jianghui Li, Mingzhang Zhou, Zeyad Qasem, **Hamada Esmaiel**, and Lanjun Liu. "Doppler Shift Estimation for Space-Based AIS Signals over Satellite-to-Ship Links" in *IEEE Access*, vol. 7, no.1, pp. 76250- 76262, June. 2019.

35) Naveed Ur. Rehman Junejo, **Hamada Esmaiel**, Haixin Sun, Zeyad A. H. Qasem, and Junfeng Wang "Pilot-Based Adaptive Channel Estimation for Underwater Spatial Modulation Technologies" in *Symmetry*, vol. 11, no. 5, pp. 711-728, 2019.

36) Zeyad A. H. Qasem, **Hamada Esmaiel,** Haixin Sun, Junfeng Wang, Yongchun Miao, Sheraz Anwar "Enhanced Fully Generalized Spatial Modulation for The Internet of Underwater Things" in *Sensors*, vol. 19, no. 7, pp. 1-16, 2019.

37) Ahmed Abdelreheem, Ehab Mahmoud Mohamed, **Hamada Esmaiel** "Adaptive Location-Based Millimeter-Wave Beamforming Using Compressive Sensing Based Channel Estimation" in *IET Communication*, vol. 13, no. 9, pp. 1287-1296, 2019.

38) Hany S. Hussein, Mohamed Elsayed, Usama Sayed Mohamed, **Hamada Esmaiel**, Ehab Mahmoud Mohamed "Spectral Efficient Spatial Modulation Techniques" in *IEEE Access*, vol. 7, no.1, pp. 1454-1469, Jan. 2019.

39) Naveed Ur Rehman Junejo, **Hamada Esmaiel**, Mingzhang Zhou, Haixin Sun, Jie Qi, and Junfeng Wang "Sparse Channel Estimation of Underwater TDS-OFDM System using Look-ahead Backtracking Orthogonal Matching Pursuit" in *IEEE Access*, vol. 6, no. 1, pp. 74389-74399, 2018.

40) Ahmed S. Mubarak, **Hamada Esmaiel,** Ehab Mahmoud Mohamed "LTE/Wi-Fi/mmWave RAN-Level Interworking Using 2C/U Plane Splitting for Future 5G Networks" in *IEEE Access*, vol. 6, no. 1, pp. 53473-53488, 2018.

41) **Hamada Esmaiel** "Damped Zero-Pseudorandom Noise OFDM Systems" in *International Journal of Electronics and Telecommunications*, vol. 64, pp. 433-438, 2018.

42) Hany S. Hussein, **Hamada Esmaiel** and Danchi Jiang "Fully Generalized Spatial Modulation Technique for Underwater Communication" in *Electronics Letters*, vol. 54, no. 14, pp. 907-909, 2018.

43) Eman Rashedy and **Hamada Esmaiel**, “Time Reversal based TDS-OFDM for V2V Communication Systems” in *WSEAS Transactions on Communications*, vol. 17, 2018.

44) Ahmed Abdelreheem, Ehab Mahmoud Mohamed, **Hamada Esmaiel** “Location-Based Millimeter Wave Multi-Level Beamforming using Compressive Sensing” in *IEEE Communications Letters*, vol. 22, no. 1, pp. 185-188, Jan. 2018.

45) **Hamada Esmaiel** and Danchi Jiang, "Spectrum and Energy Efficient OFDM Multicarrier Modulation for an Underwater Acoustic Channel,” in *Wireless Personal Communications*, vol. 96. 1, pp 1577–1593, 2017.

46) **Hamada Esmaiel** and Danchi Jiang, "Zero-Pseudorandom Noise Training OFDM," in *Electronics Letters*, vol. 50, pp. 650-652, 2014.

47) **Hamada Esmaiel** and Danchi Jiang, “Optimum Bit Rate for Image Transmission over Underwater Acoustic Channel," in *Journal of Electrical and Electronic Engineering*, vol. 2, pp. 64-74, 2014.

48) **Hamada Esmaiel** and Danchi Jiang, “Time Reversal Time-Domain Synchronisation Orthogonal Frequency Division Multiplexing over Multipath Fading Channels with Significant Tap Delays," in *The IET Journal of Engineering, vol. 1, 2014.*

49) **Hamada Esmaiel** and Danchi Jiang, "Review Article: Multicarrier Communication for Underwater Acoustic Channel," in *International Journal of Communications, Network and System Sciences*, vol. 6, pp. 361-376, 2013.

50) **Hamada Esmaiel,** Usama S. Mohammed, and Moonkyou Song, "PAPR Reduction Using Huffman Coding Combined with Selective Interleaver for OFDM Transmitter," in *Applied Mechanics and Materials*, Vol. 145, pp. 489-493, 2012.

51) Usama S. Mohammed and **Hamada Esmaiel**, "Image Transmission over OFDM Channel with Rate Allocation Scheme and Minimum Peak-to-Average Power Ratio," in *Journal of Telecommunication*, vol.2, issue 2, pp.70:78, 2010.

Papers Published in The Refereed Conferences

1) Ruiping Song, Haixin Sun, Yu Jiang, Cunxiao Fan, Jie Qi, **Hamada Esmaiel** “A Method of Multipath Mitigation Based on LS and Complex ResNet in Water Supply Pipes” IEEE ICCC Conference, 2021.

2) Xiao Feng, **Hamada Esmaiel**, Junfeng Wang, Jie Qi, Mingzhang Zhou, Zeyad A. H. Qasem, Haixin Sun, Yaping Gu "Underwater Acoustic Communications Based on OTFS," *15th IEEE International Conference on Signal Processing (ICSP)*, Beijing, China, 2020, pp. 439-444.

3) Ruiping Song, **Hamada Esmaiel**, Haixin Sun, Jie Qi, Hao Zhang, and Mingzhang Zhou, "Multi-Submarines Detection Using Multistatic Sonar System," In Proc. of IEEE 5th Information Technology and Mechatronics Engineering Conference (ITOEC), Chongqing, China, pp. 1671-1675, 2020.

4) M. Mostafa, **H. Esmaiel** and O. A. Omer, "Hybrid Energy Efficient Routing Protocol for UWSNs," *in 2nd International Conference on Computer and Information Sciences (ICCIS)*, 2020.

5) A. Abdelreheem, A. S. A. Mubarak, O. A. Omer, **H. Esmaiel** and U. S. Mohamed, "Improved D2D Millimeter Wave Communications for 5G Networks Using Deep Learning," *in 2nd International Conference on Computer and Information Sciences (ICCIS)*, 2020.

6) M. Zhou, J. Wang, H. Sun, J. Qi, X. Feng, and **H. Esmaiel**, "A Novel DNN Based Channel Estimator for Underwater Acoustic Communications with IM-OFDM," *in IEEE International Conference on Signal Processing, Communications and Computing (ICSPCC)*, 2020.

7) Ahmed Abdelreheem, Osama A Omer, **Hamada Esmaiel**, Usama S Mohamed “Deep learning-based relay selection in D2D millimeter wave communications” International Conference on Computer and Information Sciences (ICCIS), Sakaka, Saudi Arabia, 2020.

8) Jingxuan Xu, **Hamada Esmaiel**, Haixin Sun, Jie Qi, Mingzhang Zhou, Zeyad A. H. Qasem "CS-Based Channel Estimation for Underwater Acoustic Time Reversal FBMC System" 5th IEEE International Conference on Computer and Communications, China, 2019.

9) Ahmed S. Mubarak, Osama A. Omer, **Hamada Esmaiel**, and Usama S. Mohamed. "Geometry Aware Scheme for Initial Access and Control of MmWave Communications in Dynamic Environments" In Proc. of International Conference on Advanced Intelligent Systems and Informatics, Springer, Cham, pp. 760-769, 2019.

10) Rehab Abdel-Raouf, **Hamada Esmaiel,** and Osama A. Omer "Fuzzy Logic based Relay Selection for MmWave Communications" In Proc. of IEEE IEMEC, Jaipur, India, pp. 263-267, 2019.

11) Somaya M. Abdel-Khier, Osama A. Omer, and **Hamada Esmaiel** "Heart Rate Measurement Using Remote Photoplethysmograph Based on Skin Segmentation" In Proc. of International Conference on Advanced Intelligent Systems and Informatics, Springer, Cham, pp. 598-606, 2019.

12) Ahmed Abdelreheem, Osama A. Omer, **Hamada Esmaiel,** and Usama S. Mohamed "Location-Based Interference Cancellation in Device-to-Device Communications in Millimeter-Wave Beamforming" In Proc. of 36th National Radio Science Conference (NRSC), IEEE, Egypt, 2019.

13) Ahmed S. Mubarak, Osama A. Omer, **Hamada Esmaiel,** and Usama S. Mohamed "Backhaul Overhead Traffic Reduction in Dense MmWave Heterogeneous Networks Towards 5G Cellular Systems" In Proc. of 36th National Radio Science Conference (NRSC), IEEE, Egypt, 2019.

14) Ahmed M. Nor, **Hamada Esmaiel**, and Osama A. Omer. "Performance Evaluation of Proportional Fairness Scheduling in MmWave Network" In Proc. of International Conference on Computer and Information Sciences, IEEE, KSA, 2019.

15) Abdelreheem, Ahmed, Osama A. Omer, **Hamada Esmaiel**, and Usama S. Mohamed "Deep Learning-Based Relay Selection in D2D Millimeter-Wave Communications" In Proc. of International Conference on Computer and Information Sciences, IEEE, KSA, 2019.

16) Ahmed S. Mubarak, Ehab Mahmoud Mohamed, **Hamada Esmaiel** "Efficient mmWave Link Establishment and Maintaining using Wi-Fi/mmWave Interworking" in Proc. of IEEE, ICCECE'18, United Kingdom.

17) Rehab Abdel-Raouf, **Hamada Esmaiel,** and Ehab Mahmoud Mohamed "WiGig Coverage Area Management Based on Wi-Fi Received Signal Strength" in Proc. of IEEE, ICCECE'18, United Kingdom.

18) Azza Alamir, **Hamada Esmaiel** and Hany S. Hussein "Optical MIMO-TDS-OFDM with Generalized LED Index Modulation" in Proc. of IEEE, ICCECE'18, United Kingdom.

19) Ahmed Ezzat, **Hamada Esmaiel,** and Hany S. Hussein "Efficient Real-Time Image Transmission Over Underwater Acoustic mmWave Channel" in Proc. of IEEE, ICCECE'18, United Kingdom.

20) **Hamada Esmaiel** and Danchi Jiang "Progressive ZP-OFDM for Image Transmission Over Underwater Time-Dispersive Fading Channels" in Proc. of IEEE, ICCECE'18, United Kingdom.

21) Ahmed S. Mubarak, Ehab Mahmoud Mohamed, **Hamada Esmaiel** "Tightly Coupled LTE/Wi-Fi/mmWave HetNet Using 2C/U plane Splitting for 5G Networks" in Proc. of IEEE WCNC, 2018.

22) Mona Moustafa, **Hamada Esmaiel,** Ehab Mahmoud Mohamed "A Comparative Study on Underwater Communications for Enabling C/U Plane Splitting Based Hybrid UWSNs" in Proc. of IEEE WCNC, 2018.

23) Ahmed S. Mubarak, Ehab Mahmoud Mohamed, **Hamada Esmaiel** "New CAPWAP Architectures for IEEE 802.11ad Based Wi-Fi/WiGig WLANs" in Proc. of IEEE ITCE, 2018.

24) Mona Moustafa and **Hamada Esmaiel,** H. Mostafa, "UW-OFDM over Long Tap Delay Channel with a Concatenated Channel Estimation Technique" in Proc. of IEEE ITCE, 2018.

25) Ahmed Abdelreheem, Ahmed M. Nor, Ahmed S. A. Mubarak, **Hamada Esmaiel** and Ehab Mahmoud Mohamed "Comparative Study on Millimeter Wave Location-Based Beamforming" in Proc. of IEEE ITCE, 2018.

26) Ahmed Abdelreheem, Ehab Mahmoud Mohamed, **Hamada Esmaiel** "Millimeter Wave Location-based Beamforming using Compressive Sensing" *Proceedings of the IEEE International Conference on Microelectronics*, 17-19 December 2016, Cairo, Egypt.

27) Ahmed S. Mubarak, Ehab Mahmoud Mohamed, **Hamada Esmaiel** "Millimeter-Wave Beamforming Training, Discovery and Association using Wi-Fi Positioning in Outdoor Urban Environment" *Proceedings of the IEEE International Conference on Microelectronics*, 17-19 December 2016, Cairo, Egypt.

28) **Hamada Esmaiel** and Danchi Jiang, "OFDM Inter-Carrier Interference Reduction using Pulse Shaping Function for Underwater Acoustic Communications Systems," *Proceedings of the IEEE Second International Japan-Egypt Conference on Electronics, Communications, and Computers*, 17-19 December 2013, Cairo, Egypt, pp. 129-134.

29) **Hamada Esmaiel** and Danchi Jiang, "Image Transmission over Underwater Acoustic Environment using OFDM Technique with HQAM Mapper," *Proceedings of the Third IEEE International Conference on Information Science and Technology*, 23-25 March 2013, Yangzhou, China, pp. 1596-1601.

30) **Hamada Esmaiel** and Danchi Jiang, "SPIHT Coded Image Transmission over Underwater Acoustic Channel with Unequal Error Protection using HQAM," *Proceedings of the Third IEEE International Conference on Information Science and Technology*, 23-25 March 2013, Yangzhou, China, pp. 1365-1371.

31) **Hamada Esmaiel** and Usama S. Mohammed, "Image transmission over OFDM Channels with Efficient Rate Allocation and Minimum Peak-to-Average Power Ratio," *proceeding of the 3rd IEEE International Conference: E-Medical Systems*, 12-14 May 2010, Morocco.

THESES

1) Ph.D. (Dr. Eng.) Theses: "Advanced multi-band modulation technology for underwater communication systems," August 2015.

2) M.Sc. Theses: "Signal Transmission in Orthogonal Frequency Division Multiplexing (OFDM) Systems with Minimum Peak-to-Average Power Ratio (PAPR)" July 2010.

COMMUNITY SERVICE AND ENVIRONMENTAL DEVELOPMENT AFFAIRS

1) Member of the Executive Committee of the "Haya Karima" initiative at Aswan University from 10/14/2021 until now.

2) Participation in setting technical specifications and inspection committees to equip the laboratories of the Electrical Engineering Department, Faculty of Engineering, Aswan University.

3) Participation in developing technical specifications and examination committees to equip the Communications Research Center at the Faculty of Engineering, Aswan University.

4) Participation in the process of establishing the Faculty of Engineering in New Thebes - Luxor University.

5) Developing the conditions document for the limited tender to purchase machinery and equipment for the project of Support and Development of Educational Effectiveness in Higher Education Institutions (SDEE) at the College of Education, Aswan University 2022/2023.

6) Preparing the technical report on the process of raising the efficiency of the General Administration of Information Systems and Digital Transformation in the General Office of Aswan Governorate 2020/2021.

7) Technical receipt of the surveillance camera system in Aswan Governorate and its affiliated centers, 2021.

8) Participating in arbitration in student projects at the Upper Egypt in Action Conference, which is organized by the IEEE Student Branch in Aswan every year.

9) Participation in the preparation and implementation of student and academic exchange agreements between the Faculty of Graduate Studies in Biomedical and Medical Engineering at Tohoku University in Japan and the Faculty of Engineering - Aswan University.

10) Aswan University coordinator in the agreement signed between Aswan University and Etisalat Misr to establish the Generations Center for Cellular Communications Systems at the Faculty of Engineering - Aswan University.

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