

Maryam M. Akhozahieh, Ph.D.

CURRICULUM VITAE

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PERSONAL DATA **Born:** Jan. 8, 1958; **Place:** Kuwait **Nationality:** Jordanian

EDUCATION **Ph.D.** **Electrical Engineering**, The University of Akron, **Ohio State, USA**, 2006.

M. S. **Electrical Engineering**, Kuwait university, **Kuwait, Kuwait**, 1989

B. S. **Electrical Engineering**, Kuwait university, **Kuwait, Kuwait**, 1984

TITLES OF THESIS **Ph. D.** Design and Analysis of Multicarrier Multicode Wavelet Packets Based CDMA Communication Systems with Multiuser Detection.

M.S. Application of Multicriterion Optimization to the Design of 2-Dimensional IIR Digital Filters.

October;2021- June; 2022 **Head of the department of**, Electrical Engineering Dept., Applied Science Private University, Amman-Jordan

August;2021- Present **Professor**, Electrical Engineering Dept., Applied Science Private University, Amman-Jordan

Nobember;2013- August; 2021 **Associate Professor**, Electrical Engineering Dept., Applied Science Private University, Amman-Jordan

JOB HISTORY **2010-2012** **Dean's Assistant**, Faculty of Engineering, Applied Science Private University, Amman-Jordan.

Spetmber;2006- Nobember;2013 **Assistance Professor**, Electrical and Computer Engineering Dept., Applied Science Private University, Amman-Jordan.

1996-2003: **Teacher**, Electrical and Computer Engineering Dept., Applied Science Private University, Amman-Jordan.

1992-1996: **Lecturer**, Electrical and Computer Engineering Dept., Applied Science Private University, Amman-Jordan.

March;1990- August;1990 **Lab Engineer**, Electrical and Computer Engineering Dept., Kuwait University, Kuwait-Kuwait

March1984- March;1990 **Scientific Assistance**, Electrical and Computer Engineering Dept., Kuwait University, Kuwait-Kuwait.

RESEARCH PROJECTS

The PhD research entitled “Design and Analysis of Multicarrier Multicode Wavelet Packets Based CDMA Communication Systems with Multiuser Detection” aims to investigate analytically and by simulation modeling, the use of wavelet packets in code division multiple access (CDMA) communication systems. By combining multicarrier, multicode, multiuser, diversity techniques and wavelet packets, two novel communication systems that could provide a reliable and efficient transmission systems over cellular mobile radio channel are developed. Those two systems provide superior performance compared to existing/proposed CDMA based systems.

The MS research entitled “Application of Multicriterion Optimization to the Design of 2-Dimensional IIR Digital Filters” aims to design a 2-D infinite impulse response filters that meet simultaneously magnitude and group delay specifications. By using the properties of the octagonal symmetry in the design of circular symmetric filters and the properties of double quadrantal symmetry in the design of fan filter, it was possible to substantially reduce the number of variables to be adjusted in the optimization problem.

TEACHING EXPERIENCE**Undergraduate Courses:**

- Circuit 1
- Electronics 1 and 2
- Machine
- Communications
- Digital Communications
- Introduction to computers
- Advance Engineering Mathematics
- Communication Electronics
- Communications systems and Networks
- Optical Communication
- Systems and Signals Processing (Digital and Analog)

RESEARCH INTERESTS

Wireless Communications, digital signal processing, multiuser systems, multicarrier systems, multicode systems, CDMA systems, wavelet packets and their application in communication systems.

MEMBERSHIP OF UNIVERSITY COMMITTEES

- Head of the Faculty Schedule and Exams Committee, Applied Science University, 2010 – present.
[To arrange exam schedule, arrange the reservation of room common exam and make sure that there is no conflict between the schedule of exams of all department in the faculty]
- Head of the Faculty Quality Control Assurance Committee, Applied Science University, 2010 – 2013.
[To be responsible for the assurance of quality and maintenance of standards across all undergraduate taught]
- Head of the Faculty Webpage Development and Maintenance Committee, Applied Science University, 2010 – 2013.
[To design and modify the webpage for engineering faculty; add new faculty member name and CV, news of the faculty, activity, and announcement]
- Head of the Faculty Engineering Laboratories Committee, Applied Science University, 2010 – 2013.
[To be sure that the lab are up to date by renew the equipment and experiments, to study and make recommendation for the Tender of the new lab]
- Head of the Department Exams Committee Applied Science University, 2007 – present.
- Member of the Department Quality Control Assurance Committee Applied Science University, 2008 – 2012.

- Head of the Department Webpage Development and Maintenance Committee, Applied Science University, 2010 – 2013.
- Head of the Department Engineering Laboratories Committee, Applied Science University, 2007 – 2010, 2019.

REVIEWER FOR JOURNAL AND CONFRENCES

- **Chair of C8** in *1st International Conference on Communications, Signal Processing and their Applications*, Sharjah, UAE, 2013.
- **Reviewer** for “*Science Alert*”, since 2012.
- **Reviewer** for “*Caspian Journal of Applied Sciences Research*”, for the paper: Mostafa Moridi , “A Current Conveyor Based SC Band-Pass Filter”, 15/9/2012. The paper still under review.
- **Reviewer** for “*IEEE Signal Processing Letters*”, for the paper: , Huihua Chen, Minli Yao, and Weimin Jia, “Code Discriminator Design for Multipath Mitigation in GNSS Receiver”, the paper rejected, 2012.
- **Reviewer** for “*IEEE Transactions on Vehicular Technology*”, for the paper: Yusung Lee , “A RAKE Receiver with ICI/ISI Equalizer for CCK Modem”, Vol. 58, No. 1, 2009, pp. 198 – 206.
- **Reviewer** for “*Science Alert*”, since 2012

PROFESSIONAL AND SCIENTIFIC SOCIETIES

- IEEE Membership 2006 – present
- IEEE Communications Society Membership 2006 – present
- IEEE Vehicular Technology Society Membership 2006 – present
- Jordan Engineering Association Membership 1990 – present

List of Publications

Published Refereed International Journal

- 1- **Akho-Zahieh, M.**, Nashwanand, O. and Abdellatif, N. (2021). Method for the Analytical Evaluation of Convolution Integral. “*ARNP Journal of Engineering and Applied Sciences*”. 16(14): 1552-1558.
- 2- Baniyounes, A., Ghadi, Y., **Akho Zahieh, M.**, Radwan, E., and Oliemat, K. (2021). Energy, Economic and Environmental Analysis of Fuzzy Logic Controllers Used in Smart Buildings. “*International Journal of Power Electronics and Drive System (IJPEDS)*”.
- 3- Abdellatif, N. and **Akho-Zahieh, M.** (2020). Performance Analysis of Geometric Codes. “*ARNP Journal of Engineering and Applied Sciences*” 15(12): 1341-1345.
- 4- **Akho-Zahieh, M.**, and Abdellatif, N. (2020). Effect of Coding and Diversity on the Performance of Wavelet Packets Multicarrier Multimode CDMA system. “*International Journal on Communications Antenna and Propagation (IRECAP)*”. 10(1): 1-15. DOI: <https://doi.org/10.15866/irecap.v10i1.18136>
- 5- **Akho-Zahieh, M.**, and Abdellatif, N., (2019). Performance Analysis of MIMO Wavelet Packet Multicarrier Multicode CDMA System with Antenna Selection. “*Advances in Electrical and Electronic Engineering*” 17(4): 423-435.

- 6- **Akho-Zahieh, M.**, (2018). Effect of Multirate and Suppression Filter in the Performance of Wavelet Packet Multicarrier Multicode CDMA system. "International Journal of Circuits Systems and Signal Processing" 12: 12-20.
- 7- **Akho-Zahieh, M.**, (2017). Effect of Diversity and Filtering on the Performance of Decorrelating Multiuser Detector Combining with Wavelet Packets Multicarrier CDMA system. "International Journal of Applied Engineering Research" 12(21): 11186-11197.
- 8- **Akho-Zahieh, M.**, and Abdellatif, N., (2016). Narrowband Interference Suppression in Wavelet Packet Multirate Multicarrier Multicode CDMA System. 15th International Conference on Circuits, Systems, Electronics, Control & Signal Processing. Istanbul, Turkey.
- 9- **Akho-Zahieh, M.**, and Abdellatif, N. (2015). Effect of Diversity and Filtering on the Performance of Wavelet Packets Base Multicarrier Multicode CDMA System. "Journal of Signal and Information Processing" 6: 165-179.
- 10- **Akho-Zahieh, M.**, and Abdellatif, N. (2014). Performance Analysis of Wavelet Packet Multirate Multicarrier Multicode CDMA for Wireless Multimedia Communications. "International Journal of Electronics and Communications (AEÜ)" 68(4): 291-300.
- 11- **Akho-Zahieh, M.**, and Abdellatif, N. (2012), Narrow-band interference suppression in wavelet packets based multicarrier multicode CDMA overlay system. "Wireless Communications and Mobile Computing". DOI: 10.1002/wcm.2325.
- 12- **Akho-Zahieh, M.**, and Abdellatif, N. (2013). Effect of jamming and diversity on the performance of a wavelet packet based multicarrier multicode CDMA communication system. "International Journal of Electronics and Communications" 67(2): 157-166.
- 13- **Akho-Zahieh, M.**, and Ugweje, O.C. (2008). Diversity Performance of a Wavelet-Packet-Based Multicarrier Multicode CDMA Communication System. "IEEE Transactions on Vehicular". 57(2): 787-797.
- 14- **Akho-Zahieh, M.** and Ugweje, O.C (2006). Wavelet packet based MC/MCD-CDMA communication system. "Electronics Letters" 42(11): 644-645.

Published Refereed Local Journal

1. **Maryam Akho-Zahieh**, khalil Saleh and Nasser Abdellatif, *Outage Probability Performance of Wavelet Packet Multirate Multicarrier Multicode CDMA System*, The Jordan Journal of Applied Science, Vol. 11, No. 1.
2. Nasser Abdellatif and **Maryam Akho-Zahieh**, *Effect of Narrowband Interference on the Performance of Wavelet Packets Based Multicarrier CDMA System With Decorrelating Multiuser Detector*, The Jordan Journal of Applied Science, Vol. 11, No. 1.

Published Refereed International Conferences

1. **Maryam Akho-Zahieh**, khalil Saleh and Nasser Abdellatif, *Performance of Wavelet Packets Based Multicarrier Multicode CDMA Communication System in the Presence of Narrowband Jamming*, 1st International Conference on Communications, Signal Processing and their Applications, Sharjah, UAE, 2013 *1st International Conference on Communications, Signal Processing and their Applications*, Sharjah, UAE, Digital Object Identifier: 10.1109/ICCSPA.2013.6487223, *IEEE Conference Publications, 2013*.

Published Refereed Local Conferences

1. **Maryam Akho-Zahieh** and O.C. Ugweje, *A Wavelet Packets Based Multicarrier Multicode CDMA Communication System*, 6th International Philadelphia Engineering Conference on Computational Aspects and their Applications in Electrical Engineering, Amman, Jordan, 2006, pp. 440-448.