

# **Dr. Mahmoud Ayesh Khodeir**

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<http://www.just.edu.jo/eportfolio/Pages/Default.aspx?email=makhodeir>

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## **Personal Data**

Date of Birth: 28/7/1980  
Nationality: Jordanian  
Marital Status: Married, 4 kids (Basel (2009), Bahaa (2011), Jawad (2012), and Buthaina (2016)).

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## **EDUCATION**

Ph.D. Electrical Engineering – July 2011, The University of New Mexico (UNM) – USA  
M.S. Electrical Engineering – Dec. 2007, The University of New Mexico (UNM) – USA  
B.S. Electrical Engineering – June 2003, Mutah University – Jordan

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**RESEARCH INTERESTS:** Wireless Communications, Wireless Networks, Computer Networks, MIMO, Cognitive Radio, Cooperative Networks, Ad-hoc Networks, Game Theory, Reconfigurable antennas.

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## **WORK EXPERIENCE**

Sep. 2017 – present  
Manger, Department of linking with industry, the Consultative Center for Science and Technology at Jordan University of Science and Technology (JUST), Jordan.

Sep. 2016 – present  
Associate Professor at Jordan University of Science and Technology (JUST), Jordan.

Sep. 2011 – Sep. 2016  
Assistant Professor at Jordan University of Science and Technology (JUST), Jordan.

Aug. 2011– Oct. 2011

Full Time Lecturer at Jordan University of Science and Technology (JUST), Jordan.

Jan. 2007 – Aug. 2011

Instructor, Research and Teaching Assistant (RA and TA) at the University of New Mexico (UNM), USA.

Aug. 2004 – Jan. 2006

Instructor at Hafar Al-Batin College of Technology (HBCT), KSA.

Sep. 2003 – Aug. 2004

Teaching Assistant (TA) at Jordan University of Science and Technology (JUST), Jordan.

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## Courses Taught

### ❖ **At Jordan University of Science and Technology, Irbid, Jordan.**

#### Undergraduate Courses

- 1) EE 100 Introduction to Electrical Engineering, Fall – 2012, 2013, 2014 Spring – 2013, 2014, 2015. (JUST)
- 2) EE 100 Introduction to Electrical Engineering LAB, Fall – 2012, 2013, 2014 and Spring – 2013, 2014, 2015. (JUST)
- 3) EE 212 Electric Circuit Analysis (non EE students), Fall 2016 and Summer 2017. (JUST)
- 4) EE 213 Circuits Laboratory, Spring – 2013, 2015, 2016 and Fall – 2013, 2014, 2015, 2016. (JUST)
- 5) EE 303 Principles of Electrical Circuits (non EE students), Fall – 2011, 2013, 2014, 2015, 2016, Spring – 2011, 2012, 2013, 2014, 2015, 2016 Summer – 2012, 2013. (JUST)
- 6) EE 306 Electrical Engineering LAB (non EE students) Fall 2016. (JUST)
- 7) EE 322 Electronic Circuits LAB, Fall – 2011 and Spring – 2012, 2016. (JUST)
- 8) EE 450 Communication Systems, Spring – 2012, 2014, 2017, Fall 2016 and Summer 2017. (JUST)
- 9) EE 452 Communications LAB, Spring – 2012, 2017. (JUST)
- 10) EE 462 Digital Signal Processing LAB, Spring – 2016. (JUST)
- 11) EE 490 Engineering Practice, Fall – 2014, 2015, Spring – 2014, 2015, and Summer – 2014, 2015. (JUST)
- 12) EE 552 Digital Communications LAB, Fall – 2016. (JUST)
- 13) EE 570 Communication and Computers Networks, Spring – 2012, 2014, 2015, 2016, 2017 and Summer – 2012. (JUST)

### Graduate Courses

- 14) EE 770 Wireless Networking Fall – 2011, 2012, 2013, 2014, 2015 and 2016. (JUST)
- 15) EE 789 Special Topics in Wireless Communications Fall – 2016. (JUST)

❖ **At The University of New Mexico, Albuquerque, New Mexico, USA.**

### Undergraduate Courses

- 16) ECE 322L Electronics II LAB, Fall, Spring, and Summer 2007 – 2010. (UNM)
- 17) ECE 340 Probabilistic Methods in Engineering, Summer – 2011. (UNM)

❖ **At Hafar Al-Batin College of Technology (HBCT), Hafar Al-Batin, KSA.**

### College level Courses

- 18) ELEC 140 Electrical Circuits (1) LAB. (HBCT)
- 19) ELEC 141 Electrical Circuits (2) LAB. (HBCT)
- 20) ELEC 144 Qualifying Workshop. (HBCT)
- 21) ELEC 147 Logic Circuits LAB. (HBCT)
- 22) ELEC 240 Electronics Circuit LAB. (HBCT)
- 23) ELEC 241 Power Electronics LAB. (HBCT)
- 24) ELEC 242 Control Systems LAB. (HBCT)
- 25) DAEM 111 Basics of Electrical and Electronics LAB. (HBCT)
- 26) DAEM 112 Basics Electronics Workshop. (HBCT)
- 27) DAEM 121 Digital Circuits LAB. (HBCT)

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❖ **Professional Software:** Matlab, PSpice, Microwave Studio, and HFSS.

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## **PUBLICATIONS**

### Journals

- 1) **M. Khodeir**, A. M. Hayajneh, M. Pourvali, N. Ghani, “Incremental Relaying Cooperative Networks with Dual Transmit Diversity”, Accepted in *Computer and Electrical Engineering Journal, Elsevier*. [doi: 0.1016/j.compeleceng.2016.11.013](https://doi.org/10.1016/j.compeleceng.2016.11.013). **(Impact Factor 1.084)**.
- 2) H. Bai, K. Shaban, **M. Khodeir**, F. Gu, J. Crichigno, S. Khan, N. Ghani, “Overlay network scheduling design”, *Communications Networks Journal, Elsevier*, Vol. 82, 5, 2016, pp. 28-38. [doi:10.1016/j.comcom.2016.02.009](https://doi.org/10.1016/j.comcom.2016.02.009). **(Impact Factor 2.099)**.

- 3) **M. A. Khodeir**, S. Khatalin and S. Al Ahmad, “Performance of Multihop CDMA Ad hoc Networks with Diversity Combining Techniques over Fading Environments”, *Simulation Modelling Practice and Theory Journal, Elsevier*, Vol. 64, May, 2016, pp. 69- 82. [doi:10.1016/j.simpat.2015.12.005](https://doi.org/10.1016/j.simpat.2015.12.005). **(Impact Factor 1.483)**.
- 4) M. M. Qasaymeh, **M. A. Khodeir**, “Blind Channel Estimation for Frequency Hopping System Using Subspace Based Method”, World Academy of Science, Engineering and Technology, *International Journal of Electrical, Computer, Electronics and Communication Engineering*, Vol: 9, No: 4, 2015, pp. 436-439.
- 5) **Mahmoud A. Khodeir** and Muteeah A. Jawarneh, “Approximate SER for M-PSK using MRC and STTD Techniques over Fading Channels” *International Journal of Advanced Computer Science and Applications (IJACSA)*, Special Issue on Extended Papers from Science and Information Conference 2013, 2013. Vol. 3, No. 4, December 2013, pp. 1-7. [doi.org/10.14569/SpecialIssue.2013.030401](https://doi.org/10.14569/SpecialIssue.2013.030401). **(Impact Factor 1.32)**.
- 6) O. Diaz, F. Xu, N. Minallah, **M. Khodeir**, M. Peng, S. Khan, N. Ghani, “Network Survivability for Multiple Probabilistic Failures”, *IEEE Communications Letters*, Vol. 16, No. 8, August 2012, pp. 1320-1323. **(Impact Factor 1.291)**.
- 7) **M. Alayesh**, N. Ghani, “Game-Theoretic Approach for Primary-Secondary User Power Control under Fast Flat Fading Channels”, *IEEE Communications Letters*, Vol. 15, No. 5, May 2011, pp. 491- 493. **(Impact Factor 1.291)**.

## Conferences

- 8) Lama N. Ibrahim, **Mahmoud A. Khodeir** and Mamoun F. Al-Mistarihi, “Outage Probability for End User Mobile in Cognitive Relay Networks with Best Relay Selection Over Mixed Fading Channels”, the *8th International Conference on Information and Communication Systems, (ICICS2017)*, Irbid, Jordan, April, 4-6, 2017.
- 9) **Mahmoud A. Khodeir**, Mamoun F. Al-Mistarihi, Razan Shatnawi and Laila Al Saleh “Security Enhancement Using Maximal Ratio Combining (MRC) Diversity over Nakagami- $m$  Fading”, *The 14<sup>th</sup> Annual IEEE Consumer Communications & Networking Conference (CCNC) 2017*, Las Vegas, USA, January, 8-11, 2017.
- 10) Lama N. Ibrahim, Mamoun F. Al-Mistarihi and **Mahmoud A. Khodeir**, “On the Outage Probability in Cognitive Amplify-and-Forward Relaying Systems over Mixed Fading Channels for End User Mobile”, *the 8<sup>th</sup> IEEE International Conference on Communication Software and Networks (ICCSN) 2016*, Beijing, China, June 4-6, 2016 (Excellent Presentation of ICCSN 2016 award).

- 11) **Mahmoud A. Khodeir** and Sari Khatalin, “SER Approximation for Orthogonal STBC over Nakagami- $m$  Fading Channel”, *The 7th International Conference on Information and Communication Systems, (ICICS2016)*, Irbid, Jordan, p.p 207-212, April 5-7, 2016. **DOI:** 10.1109/IACS.2016.7476112.
- 12) Suzan Al-Zoubi, Rami Mohaisen, Mamoun F. Al Mistarihi, Sari Khatalin, and **Mahmoud A. Khodeir**, “On the Outage Probability of DF Relay Selection Cooperative Wireless Networks over Nakagami- $m$  Fading Channels”, *2016 7th International Conference on Information and Communication Systems, (ICICS2016)*, Irbid, Jordan, p.p 186-189, April 5-7, 2016. **DOI:** 10.1109/IACS.2016.7476108.
- 13) **Mahmoud A. Khodeir**, Sari Khatalin, and Sahar Al Ahmad, “Performance of Multihop CDMA Ad hoc Networks over  $\kappa$ - $\mu$  Fading Channels”, *The sixth International Conference on Information and Communication Systems 2015, (ICICS2015)*, Amman, Jordan, April, 2015 (**Nominated for best paper award**).
- 14) Ali M. Hayajneh, **Mahmoud A. Khodeir**, and Mamoun F. Al Mistarihi, “Incremental-Relaying Cooperative-Networks using Dual Transmit Diversity and Decode and Forward Relaying Scheme with Best Relay Selection”, *Proc. 37th Jubilee International Convention on Information and Communication Technology, Electronics and Microelectronics, (MIPRO 2014)*, Opatija, Croatia, May 26-30, 2014.
- 15) A. Hayajneh, **M. Khodeir**, “Incremental-Relaying Cooperative-Networks using Dual Transmit Diversity with AF Technique”, *The fifth International Conference on Information and Communication Systems 2014, (ICICS2014)*, Irbid, Jordan, April, 2014.
- 16) M. Al-Zu'bi, **M. Khodeir**, M. Al-Mistarihi, “Modeling and Design of an Infrared-based Identification (IRID) System, Tag and Reader Design”, *The fifth International Conference on Information and Communication Systems 2014, (ICICS2014)*, Irbid, Jordan, April, 2014.
- 17) M. Al-Zu'bi, M. Al-Mistarihi, **M. Khodeir**, “Outage Probability and BER Analysis using Directional Antenna for Mobile WiMAX Communication”, *The fifth International Conference on Information and Communication Systems 2014, (ICICS2014)*, Irbid, Jordan, April, 2014.
- 18) **M. Khodeir**, M. Jawarneh, “Approximate Symbol Error Rate for M-ary Phase Shift Keying (M-PSK) using Maximum Ratio Combining (MRC) Technique over Fading Channels”, *Science and Information (SAI) Conference 2013*, p.p 99-103, London, UK, October 2013.

- 19) **M. Khodeir**, H. Sallouha, “Performance Analysis of Non-coherent FSK in Cooperative Networks Using EGC over Nakagami- $m$  Fading channels”, *Global Engineering, Science and Technology Conference 2013*, Dubai, UAE, April 2013.
  - 20) A. Hayajneh, **M. Khodeir**, “Incremental-Relaying Cooperative-Networks using Dual Transmit Diversity over Rayleigh Fading Channels”, *Global Engineering, Science and Technology Conference 2013*, Dubai, UAE, April 2013.
  - 21) **M. Alayesh**, N. Ghani, “Performance of a Primary-Secondary User Power Control under Rayleigh Fast Flat Fading Channel with Pricing”, *19th International Conference on Telecommunications (ICT) 2012*, Jounieh, Lebanon, April 2012.
  - 22) **M. Alayesh**, M. Peng, N. Ghani, “Power Control Game-Theoretic Approach in Cognitive Radios Networks under Rician Fast-Flat Fading Channel with Pricing”, *Wireless Communications, Networking, and Mobile Computing (WiCOM) 2011*, Wuhan, China, September 2011.
  - 23) **M. Alayesh**, N. Ghani, “Game Theoretic Power Control Under Rician Slow Flat Fading Channels in Cognitive Radio Networks”, *IEEE ICCCN 2011*, Maui, Hawaii, August 2011.
  - 24) **M. Alayesh**, N. Ghani, “Cognitive Radios Power Control Game under Rayleigh Slow Fading Channel”, *International Conference on Communications and Information Technology (ICCIT) 2011*, Aqaba, Jordan, March 2011.
  - 25) **M. Alayesh**, N. Ghani, “Performance of a Primary-Secondary User Power Control Game under Fast Fading Channels”, *IEEE HONET 2010*, Cairo, Egypt, December 2010.
  - 26) **M. Alayesh**, N. Ghani, “Impacts of Fast Flat Fading Channel on the Performance of a Primary-Secondary User Power Control Game for Cognitive Radios”, *IEEE GLOBECOM 2010 Broadband Wireless Access (BWA) Workshop*, Miami, FL, December 2010.
  - 27) **M. A. Alayesh**, C. G. Christodoulou, M. Joler, and S. E. Barbin, “Reconfigurable Multi-band Stacked Microstrip Antenna for Wireless Applications”, *Loughborough Antennas and Propagation Conference*, Leicestershire, UK, March 2008.
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## Research Thesis

- 28) “Resource Allocation in Realistic Wireless Cognitive Radios Networks”, Summer 2011, Ph.D. Dissertation, (Supervisor Prof. Nasir Ghani, UNM. Now at the University of South Florida (USF), USA). June, 2011.
- 29) “Analysis and Design of Reconfigurable Multi-Band Stacked Microstrip Patch Antennas (MSAs) for Wireless Applications”, Fall 2007, Master Thesis, (Supervisor Prof. Christos Christodoulou, IEEE Fellow, UNM). December, 2007.

## **M.S. THESES (Chair)**

### Completed

- 1) Lamma Naief Ibraheem, “Performance Analysis of Dual Hop Amplify-and-Forward Cognitive Relay Networks with Interference Power Constraints Over Mixed Fading Channels For End User Mobile”, Jordan University of Science and Technology, JUST, Irbid, Jordan, Summer, 2016. **(Co-Advisor)**
- 2) Sahar Mohammad Alahmad, “Performance of Multihop Code Division Multiple Access Ad hoc Networks with Diversity Combining Techniques in  $\kappa - \mu$  Fading Environments”, Jordan University of Science and Technology, JUST, Irbid, Jordan, December, 2015. **(Co-Advisor)**
- 3) Ali Mohammad Hayajneh, “Performance Analysis of Incremental-Relaying Cooperative-Networks using Dual Transmit Diversity”, Jordan University of Science and Technology, JUST, Irbid, Jordan, January, 2014. **(Main Advisor)**
- 4) Mutiah Ahmad Jawarneh, “An approximate Bit Error Rate (BER) for M-Ary Phase Shift Keying (M-PSK) over Realistic Slow-Flat Fading Channels with Space Time Transmit Diversity (STTD)”, Jordan University of Science and Technology, JUST, Irbid, Jordan, May, 2013. **(Main Advisor)**
- 5) Khadijah Sami Gaafer, “Novel Target Localization Algorithms for Wireless Sensor Networks”, Jordan University of Science and Technology, JUST, Irbid, Jordan, December, 2012. **(Main Advisor)**

### In Progress

- 6) Shimaab Abed Rabh, “Power and Rate Allocations for Primary-Secondary Users using Game Theoretical Approach with Pricing”, Jordan University of Science and Technology, JUST, Irbid, Jordan, Expected Summer, 2018 **(Main Advisor)**



- 7) Razan Shatnawi, "...", Jordan University of Science and Technology, JUST, Irbid, Jordan, Expected Summer, 2018 (**Co - Advisor**)

### **Graduation Projects (Chair)**

#### **Completed**

**Group 1**, Mohammad Youssef Ahmad Obeidat, Ali Nasir Ahmed Al Matari, Khaled Mohammad Abdo Alharizi, "**Water Pumping System using Solar Energy**", Fall, 2015.

**Group 2**, Mohammad Bassam Abed-alal, Mohammad Omar Afaneh, Mohammad Moayad Idrees, "**Piezo-electric Phone Charger**", Fall, 2016.

**Group 3**, Amer ziad bani-Hani, Abdallah Hamdan Gharaibeh, Mohammad Baker Al-qawaqneh, "**Phone charger using Hybrid Solar Cell and Wind Turbine**", Fall, 2016.

#### **In Progress**

### **Awards and honors**

- 1) Fellowship form JUST to pursue higher education leading to the Ph.D. degree in Electrical Engineering (2008 – 2011) at the University of New Mexico – USA.
  - 2) Fellowship form ECE department at the University of New Mexico to pursue higher education leading to M.S and Ph.D. degrees in Electrical Engineering (2007 – 2011) at the University of New Mexico – USA.
  - 3) Scholarship form Ministry of Higher Education in Jordan leading to B.Sc. degree in Electrical Engineering (1998 – 2003) at Mutah University – Jordan.
  - 4) Nominated for the best paper award in the sixth International Conference on Information and Communication Systems 2015, (ICICS2015), Amman, Jordan, 7-9 April, 2015.
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### **UNIVERSITY ACTIVITIES**

- ❖ The Jordan University of Science and Technology (JUST) representative for attending the First Isra International Engineering Conference which was held at the Isra university, Amman, Jordan, 07-08, April, 2015 according to invitation from the Isra university.
- ❖ The Jordan University of Science and Technology (JUST) representative for the joint Egyptian-Jordanian workshop on technical and research collaboration which was held in Amman, Jordan, 21-22, December, 2014 according to invitation from the scientific research support fund.
- ❖ Member in Student's Union Elections Committee for the years 2015, 2016 and 2017 at Jordan University of Science and Technology (JUST).



- ❖ The Social Committee with the ECE department at JUST.
- ❖ The Industry Sector and Graduates Committee with the ECE department at JUST.
- ❖ ABET Committee with the ECE department at JUST.
- ❖ Engineering Training Committee with the ECE department at JUST, from 09/2013 - 09/2015.
- ❖ Appointment Committee with the ECE department at JUST. (Communication Engineering Labs 2015).

## Membership of Scientific and Professional Societies

- Member of the Institute of Electrical and Electronics Engineers (IEEE).
- Member of the IEEE Communications Society.
- Member of Jordan Engineers Association.
- Member of the United States Universities Graduates – Jordan (USUG).

## Other Activities

- Technical Program Committee (TPC) member and reviewer with *the Second Irbid International Engineering Conference (IIEC 2017)*, Irbid, Jordan, 14-16, November, 2017.
- Technical Program Committee (TPC) member and reviewer with *the 8<sup>th</sup> IEEE International Conference on Communication Software and Networks (ICCSN) 2016*, Beijing, China, 6-8, May, 2017.
- Technical Program Committee (TPC) member and reviewer with *the 8<sup>th</sup> IEEE International Conference on Communication Software and Networks (ICCSN 2016)*, Beijing, China, 4-6, June, 2016.
- Technical Program Committee (TPC) member, reviewer and session chair of the networking, communications, sensor networks and mobile computing session with *the Seventh International Conference on Information and Communication Systems 2016, (ICICS 2016)*, Irbid, Jordan, 5-7 April, 2016.
- Technical Program Committee (TPC) member, reviewer and session chair of the wireless networks and applications session with *the Sixth International Conference on Information and Communication Systems 2015, (ICICS 2015)*, Amman, Jordan, 7-9 April, 2015.
- Reviewer with the Simulation Modelling Practice and Theory Journal, *Elsevier*.
- Reviewer with IEEE Communications Letter Committee.
- Reviewer with IEEE Communications Magazine Committee.
- Reviewer with IEEE Global Communication Conference Committee.
- Reviewer with the IEEE Wireless Communications and Networking Conference (WCNC) Conference Committee.
- Reviewer with the International Conference on Wireless Communications, Networking and Mobile Computing (WiCOM) Conference Committee.

## **Training, Development, Sessions, Workshops and Activities**

- Learning Design, Academic Development Center workshops, Irbid, Jordan, (09-10 /10/ 2017).
- Teaching Methods and Learning Styles, Academic Development Center workshops, Irbid, Jordan, (22-23 /02/ 2017).
- Development of Curriculum and Study Plans, Academic Development Center workshops, Irbid, Jordan, (13-16 /03/ 2014).
- Testing and Evaluation, Academic Development Center workshops, Irbid, Jordan , (19-20 /05/ 2013).