

# Mohammed Abdel-Hafez

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## PERSONAL INFORMATION:

- Date of Birth: April 29, 1969
- Marital Status: Married (with four children)

## A. Education

- Ph.D.: Eastern Mediterranean University, Electrical & Electronic Engineering, N. Cyprus-TURKEY, (November, 1997). Digital Communications.
- M.Sc.: Eastern Mediterranean University, Electrical & Electronic Engineering, N. Cyprus-TURKEY, August 1994. Digital Communications.
- B.Sc.: Eastern Mediterranean University, Electrical & Electronic Engineering, N. Cyprus-TURKEY, June 1992, Telecommunications.

## B. Work Experience

- *Associate Professor* *United Arab Emirates University, UAE* *April 2005-Present*
- *Assistant Professor* *United Arab Emirates University, UAE* *Sep. 2000 - April 2005*
- *Senior Research Scientist* *Centre to Wireless Communications, University of Oulu, Oulu Finland.* *July.1999 - Aug. 2000*
- *Teaching and Research Assistant* *Electrical and Electronics Engineering Department, Eastern Mediterranean University, N. Cyprus, Turkey.* *Sept. 1992 - Aug. 1994*  
*Feb. 1995 - Nov. 1997*
- *Instructor* *Jerusalem University, Dept. of Elec. & Elec. Eng., Jerusalem, Palestine.* *Sept. 1994 – Feb 1995*
- *Visiting Research Scientist* *Centre to Wireless Communications, University of Oulu, Oulu Finland.* *Summer 2001, Summer 2002, , Summer 2004, and Jan. 2008*
- *Manager and Senior Engineer* *Palestine Telecommunication Company (PALTEL), Palestine.* *Jan. 1998 – Jul. 1999*

## C. Teaching Activities

### C.1 Teaching Experience (2000-Present)

- |  |                                      |                               |
|--|--------------------------------------|-------------------------------|
| <i>UAE University, UAE</i>             | <i>Assistant Professor (4 years)</i> | <i>Sep. 2000 – Present</i>    |
| <i>Jerusalem University, Jerusalem</i> | <i>Instructor</i>                    | <i>Sept. 1994 – Jan. 1995</i> |

## D. Research Activities

### D.1 Thesis Supervision

1. M.Sc Thesis, Opportunistic Spectrum Access in Wireless Networks, Omkalthoum ElBashir Ali Hamad, April 2011.
2. M.Sc Thesis, Performance Evaluation of Cooperative Transmission for Next Generation Wireless Networks, Rose Hasan, June 2011.
3. M.Sc Thesis, Wavelet based Spectrum Sensing for Cognitive radio Networks, Nedaa Al Hussain, 2012-now.
4. M.Sc Thesis, Optimal spectrum sharing with QoS awareness for cognitive radio networks, Nadir Sulieman Adam, 2012-now.
5. M.Sc Thesis, Interference limits on performance of Cooperative Networks, Ali Hudari, 2014-now.
6. Ph.D, Game Theoretic Approaches for Spectrum Management, Rita Abu Diyab, 2012-Now.

### D.2 Research Interests by Topic

My primary research interest is design, development, integration, deployment, simulation, analysis and optimization of wireless mobile communication systems. my research interests includes performance analysis of mobile communication systems, future broadband wireless systems, and Wireless LAN, Multicarrier CDMA, Smart Grid, cooperative communication Systems, Cognitive radio networks, digital signals processing and Neural Networks, and Ultra Wide Band (UWB) systems.

### D.3 Selected Research Grants (Max. 5)

No.	Duration (years)	Project title	Contribution	Sponsor	Amount
1	1	Joint Spectrum Mapping and Shaping for Dual-Hop Relay Communication Links	PI	UAEU-research council	19,300
2	2	The Effect of 3G Mobile Phone Bandwidth on the Performance on a Concomitant Perceptual-Motor Task	Co-PI	UAEU-research council	70,000
3	2	Smart Campus	Co-PI	NRF	375,000
4	3	Cooperative Mobile Satellite Communication	PI	PRE-PROPOSAL SPACE SCIENCE AND TECHNOLOGY CENTER	1,280,000 AED
5	2	Smart Meters Security: Penetration Testing and Design of an Access Control Mechanism	Co-PI	THE UAEU PROGRAM FOR ADVANCED RESEARCH (UPAR) GRANT COMPETITION	368,000 AED

### D.4 Publications

#### Selected publications in refereed international Journals

- Mohammed Abdel-Hafez, and Fatih Alagoz, " A Generalized Performance Study of DS-CDMA Uplink/Downlink Receivers in Nakagami Wideband Fading Channel", IEICE Transactions on Communications, 2005, Vol.E88-B No.1, pp.333-344.

- Taha Amir, Mohammed Abdel-Hafez and Kamal Sharaf Ali , "The Effect of Deciphering Limited Bandwidth Auditory Stimuli Coming on the Performance on A Concomitant Perceptual-Motor Task: Implications for The Use of Mobile Phones While Driving", Teaching Psychology around the Word, Cambridge Scholar Publishing, 2007, UK.
- Taha Amir, Mohammed Abdel-Hafez and Kamal Sharaf Ali , "The Effect of Deciphering Limited Bandwidth Auditory Stimuli Coming on the Performance on A Concomitant Perceptual-Motor Task: Implications for The Use of Mobile Phones While Driving", Teaching Psychology around the Word, Cambridge Scholar Publishing, 2007, UK.
- Mohammed Abdel-Hafez, "Effect of Pulse Selection on the Capacity of Multi-User UWB Systems", International Transactions on Communication and Signal Processing, Global Engineering, Science, and Technology Society (GETS), Volume & No.; vol 53 no.2, 2009.
- Shuaib, Khaled; Zhang, Liren; Gaouda, Ahmed; Abdel-Hafez, Mohammed, "A PEV Charging Service Model for Smart Grids." Special Issue Smart Grid and the Future Electrical Network, Energies 5, 2012, no. 11: 4665-4682.
- Khaled Shuaib, Issa Khalil and Mohammad Abdel-Hafez, "Communications in Smart Grid: A Review with Performance, Reliability and Security Consideration," Accepted in Journal of Networks, JNW, Academy Publisher, to appear, 2013.
- Omkalthoum Al Bashir, Mohammed Abdel-Hafez, and Khalid Shuaib, "Fading Severity Effects on Collaborative Sensing for Opportunistic Spectrum Access," Computer and Electrical Engineering Journal, Elsevier, Volume 40, Issue 2, February 2014, Pages 577–586.
- Mohammed Abdel-Hafez, Omkalthoum Al Bashir, and Khalid Shuaib, "Secondary Users Capacity in Cognitive Radio Network over Rayleigh Fading Channels," Inter. Journal of Wireless Personal Communications, Special Issue on Cognitive radio networks, Springer, accepted and to appear.

### **Selected refereed papers presented and published in the proceedings of scientific conferences and meetings (Max. 5)**

- Mohammed Abdel-Hafez, Fatih Alagz, "Capacity of DS-CDMA versus TH-PPM for Multi-User Ultra-Wideband Systems", PIMRC 2006, Helsinki, Sept. 2006.
- Mohammed Abdel Hafez, Gurkan Gur, and Fatih Alagoz, "Exploring Issues of TCP over Satellite IP Networks", the UAE Forum in Telecommunication Research 2006 (FTR 2006), Sharjah, UAE.
- M.Abel-Hafez, G. Gür and F.Alagoz, "Exploring TCP Issues over Satellite IP Networks," Forum in Telecommunications Research (FTR2006), Dubai, UAE, May 2006.
- Taha Amir, Mohammed Abdel-Hafez and Kamal Sharaf Ali , "The Effect of Deciphering Limited Bandwidth Auditory Stimuli Coming through Cellular Phones on the Vigilance Performance Required for a Concomitant Perceptual-Motor Task", International Council of Psychologists and International Conference of Psychology Education: Teaching And Training in Psychology July 16-20, 2005, Bourbon Resort and Convention Center, Foz do Iguacu, Brazil.
- Mohammed Abdel-Hafez, and Ahmed Gaouda, "A New Look at Classification of Transformer Normal and Abnormal Currents", The 15th IEEE Mediterranean Electrotechnical Conference Melecon 2010, Valletta, Malta, 26 - 28 April 2010, Malta.
- Mohammed Abdel-Hafez, "Almost Exact Outage Capacity of Cooperative Relay Protocols in Wireless Communication Systems over Nakagami-m Fading Channels", the 12th International Symposium on Wireless Personal Multimedia Communications (WPMC'09), September 7 - 10, 2009, Sendai, Japan.
- Rose Hasan, and Mohammed Abdel-Hafez, Outage Capacity of Best Relay Selection Protocol for Cooperative Wireless Networks over Nonidentical Nakagami-m Channels with Arbitrary m, The Sixth International Conference on Wireless and Mobile Communications, ICWMC 2010, September 20-25,

2010, Valencia, Spain.

- Omkalthoum Al Bashir, and Mohammed Abdel-Hafez , 'Opportunistic Spectrum Access Using Collaborative Sensing in Nakagami-m Fading Channel with Real Fading Parameter, IEEE IWCMC 2011, pp. 472 – 476, July 5-8, 2011, Istanbul, Turkey.
- Omkalthoum Al Bashir, and Mohammed Abdel-Hafez, Multi-Level Collaborative Spectrum Sensing in Nakagami Fading Channels, The Seventh International Conference on Wireless and Mobile Communications, ICWMC 2012, pp 284 – 289, June 24-29, 2012 - Venice, Italy.
- Mohammed Abdel-Hafez, Omkalthoum Al Bashir, and Khalid Shuaib, On the Channel Capacity of Opportunistic Spectrum Access in Rayleigh Fading Channels, CRCN2013, International Workshop on Cognitive Radio Communications and Networks in conjunction with the 5th International Conference on Ubiquitous and Future Networks from July 2 to July 5, 2013 in Da Nang, Vietnam.
- Mariam Alnuaimi, Khalid Shuaib, and Mohammed Abdel-Hafez, “Clustering Protocols in WSN for Border Monitoring,” Accepted in the WMNC’2013 – IFIP/IEEE Wireless and Mobile Networking Conference to be held in Dubai, UAE, from 23th to 25th April 2013.
- Ahmed Gaouda, Khaled Shuaib, Mohammed Abdel-Hafez, Mahmoud Alahmad, Nasser Aljuhaishi, Hamid Sharif, “Conserving Energy in UAE Buildings: Demand Side Management and Methods for Experiencing Energy,” submitted to IEEE - GCC Conference and Exhibition 2013, 17th to 20th of November 2013 at Doha, Qatar.
- Mohammed Abdel-Hafez, Khalid Shuaib, and Samer Mayaleh, “Unified Analytical Solution for Average Symbol Error Probability of Cooperative Relay Protocol over Non-Identical Nakagami Fading Channels,” submitted to European Wireless 2014, EW2014, 2014 Barcelona, Spain, 14-16 May 2014.
- Mariam Alnuaimi, Khalid Shuaib, Klaithem Al nuaimi and Mohammed Abdel-Hafez, “Clustering in Wireless Sensor networks Based on Node Ranking,” Accepted at IWCMC 2014 Wireless Sensor Symposium – International Wireless Communications and Mobile Computing Conference, Nicosia, Cyprus, 4-8 August. 2014.
- Khaled Shuaib, Farag Sallabi Mohammed Abdel-Hafez, Ahmed Gaouda, “Mathematical Modeling of a PEV Service Admission Control (PEVSAC) Scheme in Smart Grid,” accepted at the 2014 IEEE Innovative Smart Grid Technologies Conference - Asia (ISGT ASIA) - Smart Grid Operation, Control and Protection, May 20 – 23, 2014, Kuala Lumpur.
- Nadir Adam, Mohammed Abdel-Hafez, Khalid Shuaib, “Spectrum Sharing with Quality of Service Assurance in Cognitive Radio Networks”, submitted to the 10th International Conference on Innovations in Information Technology (IIT), 2014, Al-Ain, UAE.
- Nedaa Al Hussien, Mohammed Abdel-Hafez, Khalid Shuaib, “Collaborative Sensing for Cognitive Radio under Log-Normal Shadowing”, submitted to the 8th IEEE GCC Conference and Exhibition (GCC), Communication & Signal Processing, 2015, Masqat, OMAN.
- Nedaa Al Hussien, Mohammed Abdel-Hafez, Khalid Shuaib, “A Comparison of Fusion Rules for Collaborative Sensing under Log-Normal Shadowing”, submitted to the 10th International Conference on Innovations in Information Technology (IIT), 2014, Al-Ain, UAE.
- Mariam Alnuaimi, Khalid Shuaib, Klaithem Al nuaimi and Mohammed Abdel-Hafez, “Data Gathering in Wireless Sensor Networks with Ferry Nodes”, submitted to the 10th International Conference on Innovations in Information Technology (IIT), 2014, Al-Ain, UAE.

## **E. University & Community Services**

### ***E.1 Administrative & academic activities, committee membership and duties (Max. 5)***

- EE promotion Committee, 2010/2011.

- College PET (Peer-evaluation of teaching committee), 2006-now.
- Scheduling coordinator of Elec. Eng. Department (2010-2013).
- 5<sup>th</sup> EE female activities day, Electrical Engineering, April 24, 2011.
- 7th EE female activities day, Electrical Engineering, May 14, 2013.
- 8th EE female activities day, Electrical Engineering, May 14, 2013.

## **E.2 Invited Seminars/Panels on national, regional or global levels**

- Evolution of Telecommunication in Palestinian territories after Oslo Agreement, University of Oulu, IEEE Finland Chapter, Finland, March 1999.
- MAPEC 2004, <http://www.mapec.at/>, Keynotes Speaker: 'Wireless Campus: Issues & Challenges'.
- A workshop on Fundamentals of Communication Systems, ADASI, 2012, UAEU, AI-Ai.
- Robotics Fundamentals using Mindstorm NXT2, summer camps, 2010/2011, UAEU.
- ABET workshop, Najah National University, Palestine, August 2011.

## **E.3 Memberships and activities for Performance and Skills Development**

- Member of the Technical Program Committee (TPC) of more than 20 international conferences.
- Member of the Editorial board of the UAEU journal of engineering (2004, 2006).
- MEMBERSHIP OF SCIENTIFIC AND PROFESSIONAL ORGANIZATIONS:
  - Member of IEEE.
  - Member of IEEE Communication Soc.
  - Member of IEEE Vehicular technology Soc.
- Referee for several Journals:
  - IEEE Transactions on Signal Processing,
  - IEEE Transactions on Communications,
  - Journal of Communications Networks (JCN),
  - IEEE Transactions on Wireless Networks,
  - IEEE Transactions on Vehicular Technology,
  - Journal of Communication Systems, Wiley.
  - Computer and Electrical Engineering Journal (ComElec, Elsevier)
  - Real Time Imaging.