Mohamed Abdallah (Associate Professor)

CONTACT INFORMATION

A0036-B, College of Science and Engineering
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EDUCATION

University of Maryland, College Park, MD, USA

Ph.D., Electrical and Computer Engineering, May 2006
Dissertation Title: Beamforming Algorithms for Information Relaying in Dense Wireless Networks.

University of Maryland, College Park, MD, USA

M.S., Electrical and Computer Engineering, Jan 2001
Thesis Title: Resource-efficient Sequential Encoding and Estimation Strategies for Wireless Sensor Networks.

Cairo University, Cairo, Egypt

M.S., Electrical and Computer Engineering, Jan 1999
Thesis Title: Call Admission Control in Wireless Multimedia Networks.

Cairo University, Cairo, Egypt

B.Sc. with honors, Electrical and Computer Engineering, July 1996.

SUMMARY OF ACCOMPLISHMENTS

- **Research outcome:** 5 book chapters, 3 US patents, 45 journal papers, and 96 conference papers (mostly in IEEE journals and conferences). Google Scholar citations: 1408, h-index: 19, i-10 index: 50.
- **Research funding:** Principal investigator (3 Lead PI, 2 Co-Lead PI and 4 PI) in nine research proposal grants in the total amount of USD 7M. Six of them is granted from NPRP-QNRF.
- **Advising experience:** Graduated 9 M.Sc students 1 Ph.D. student, and advising 7 Ph.D. student, 3 M.Sc students, and 2 postdoctoral at Hamad Bin Khalifa University. Graduated and advised several postdoctoral research associates, graduate students at Texas A&M at Qatar, Texas A&M College Station, University of South Florida and Cairo University in their dissertation and theses.
- **Teaching experience:** Taught eight classes at HBKU with instructor evaluation score 4.1. Eight years experience in teaching a variety of courses in wireless networks and its security aspects, communications and signal processing for both undergraduate and graduate students, and research methods and ethics. Organized and supervised lab sessions in the areas of computer networks, digital electronics and communication theory. Advising undergraduate students in several senior design projects in cooperation with local industry.
- **Professional activities:** Associate Editor for IEEE Transactions on Communications; Associate Editor for IEEE Open Access Journal of Communications, Track co-chair at the 90th IEEE Vehicular Technology Conference (VTC2019-Fall); Technical program co-chair of the 10th International Conference on Cognitive Radio Oriented Wireless Networks (Crowncom, 2015); Workshop co-chair of the the IEEE WCNC'16 workshop on Optical Wireless Communications; and member of IEEE standard 802.15.7r1 titled 'Short range optical communications'.

Professional Experience Academic

Hamad Bin Khalifa University, Doha, Qatar

Assiociate Professor, Division of ICT, College of Science and Engineering **June 19- Present**
Assistant Professor, Division of ICT, College of Science and Engineering **Sept. 16 - June 19**

- Instructed undergraduate and graduate courses including
  - ICT501: Research Methods and Ethics in ICT (F'17,F'18).
  - ICT701: Research Graduate Seminar (S'18).
  - CYSE627: Wireless Networks and Security (S'17,S'18)
  - CSE 510: Advanced Algorithms and Data Structures (S'17,S'18)(*co-teaching 40% of class).*
  - CYSE 570: Cybersecurity Policy, management, and IT ethics. (F'16)
  - CPEG 114: Electrical Circuit Theory (F'16)

Texas A& M University at Qatar, Doha, Qatar

Associate Research Scientist, Electrical and Computer Eng. Dept. **Oct. 12 - Aug. 16**
Assistant Research Scientist, Electrical and Computer Eng. Dept. **Feb. 11 - Oct. 12**
Postdoctoral Associate, Electrical and Computer Eng. Dept. **Oct. 09 - Feb. 11**

- Conducting and managing research in the area of cellular heterogeneous network, cognitive networks and sensor network with focus on resource allocation, user scheduling, distributed beamforming, cooperative user communication and relaying, detection and estimation, and data fusion algorithms. Recently, I also worked on understanding the physical layers challenges and providing efficient algorithms for novel emerging applications such as visible light and free-space optical communication systems, reconfigurable antenna systems, smart grids, location determination techniques, and cyber security systems.
- Co-advising graduate students on both Qatar and Texas main campuses for their theses, and dissertations.

Cairo University, Giza, Egypt

Associate Professor **July 12 - Aug 16**
Assistant Professor **June 06 - July 12**
(*Was taking a leave of absence since Oct 2009 to work at Texas A&M University at Qatar.*)

- Instructed undergraduate courses including
  - Computer Networks.
  - Analog communication systems.
  - Digital communication systems.
  - Signal processing and linear systems.
  - Probability Theory.
- Instructed graduate courses including
  - Detection and estimation theory.
  - Advanced signal processing.
  - Advanced digital Communications.

American University at Cairo, Cairo, Egypt

Adjunct Faculty, Electrical Eng. Dept. **Jan. 07 - Sept. 09**

- Spring 2007: Instructed "Computer Networks " course.

- Spring 2008: Instructed "Digital Communications" course.
- Research collaboration with regular faculty members in the area of cognitive networks.

University of Maryland, College Park, Maryland, USA
Research and Teaching Assistant, ECE Department **Jan. 02 - Jun 06**

- Assisted in teaching Estimation and Detection Theory.
- Conducted recitation classes, Graded exams and homework.
- Conducted research in the area of resource-efficient communication and signal processing algorithms for wireless ad-hoc networks.

Cairo University, Cairo, Egypt
Teaching Assistant, ECE Dept. **Sept. 96 - Dec. 98**

- Assisted in teaching undergraduate communication classes.
- Preparing and instructing undergraduate labs in the areas of digital electronics, analog/digital communications and signal processing.

Work Experience - Industrial

Varkon Semiconductors
Principal Systems Engineer **Sept. 08 - Sept. 09**

- Physical layer design and implementation of Digital video broadcasting (DVB) systems using Matlab and C++.

New Bridge Company, Cairo branch, Egypt
Systems Engineer **Sep. 96 - Sep. 97**

- Develop and design of telecommunication WAN and LAN for the Egyptian government and private companies.

InterUniversity Microelectronics Center (IMEC), Leuven, Belgium.
Summer Intern **June 94 - July 94**

- Develop measurement tools for nanotechnology.

Universtat des Saarlandes, Saarbrucken, Germany.
Summer Intern **July 94 - Aug. 94**

- Implement C++ software program for WAN simulation.

Honors and Awards

1. **Best Paper Award:** Mohammed Elamassie, Mehdi Karbalayghareh, Farshad Miramirkhani, Murat Uysal, Mohamed Abdallah, and Khalid Qaraqe. "Resource Allocation for Downlink OFDMA in Underwater Visible Light Communications." *EEE International Black Sea Conference on Communications and Networking (BlackSeaCom)*, pp. 1-6. IEEE, 2019.
2. **Research Fellow Excellence Award**: Texas A & M University at Qatar, 2016.
3. **Best Paper Award:** Mohamed Ismail, Islam Bayram, Mohamed Abdallah, Erchin Serpedin, and Khalid Qaraqe "Optimal planning of PEV fast charging stations", *IEEE First Workshop On Smart Grid And Renewable Energy*, Doha, Qatar, Mar. 2015.
4. **Nortel Networks Industrial Fellowship** at University of Maryland, College Park, MD. Awarded for five consecutive years 1999 - 2003. Awarded only to ONE Ph.D. graduate student.

5. **Best Poster Award:** Honors with Distinction (First Place) in University of Maryland Graduate Research Interaction Day (GRID), 2004.
6. **Best Talk Award:** Honors with Distinction (First Place) in University of Maryland Graduate Research Interaction Day (GRID), 2003.
7. **Distinction at M. Sc** (top 1%), Cairo University, Dec 1998.
8. **Distinction with Honor degree at B.Sc.** (top 1 %), Cairo University, July 1996.
9. **Faculty Certificate of Honor**, 1992-1996., Cairo University, Egypt.

Research Grants Awarded

1. **Electric Grid Failures – Don't Wait Until They Happen**, funded by Qatar National Research Fund.

   Mohamed Abdallah (PI), Collaborators: Bo Wang (LPI), Edgar Sanchez-Sinencio, Patrick Mercier, Javier Hernandez Fernandez

   Amount: US$ 600 (2019-2022).
2. **Relay-assisted Visible Light Communication Systems**, Technology Development Fund (TDF) funded by Qatar National Research Fund.

   Mohamed Abdallah (Lead PI), Collaborators: Murat Uysal, Khalid Qaraqe, Ali Gorcin.

   Amount: US$ 130K (2018-2019).
3. **Optical Wireless communications: Complementary Technology for Solving RF Spectrum Congestion in 5G Heterogeneous Networks**,

   Mohamed Abdallah (PI), Collaborators: Khalid Qaraqe, Khaled B. Letaif, Mohamed-Slim Alouini, Zouheir Rezki, Ahmed Salah, and Mohamed Khairy. Amount: US$ 720K (2016-2019).
4. **Visible Light Communication for Underwater Sensor Networks**, funded by Qatar National Research Fund.

   Mohamed Abdallah (Lead PI), Collaborators: Murat Uysal, Costas Georghiades, Boon Ooi and Bassem Shihada.

   Amount: US$ 810K (2016-2019).

   Currently serving as a PI after I moved from TAMUQ to HBKU
5. **A Signal Processing Framework for Secure Monitoring, Power-Line Communications, and Energy Management in Energy Grids**, funded by Qatar National Research Fund.

   Mohamed Abdallah (Lead PI), Collaborators: Khalid Qaraqe, Naofal El-Dahrir and Ali Tajer.

   Amount: US$ 1M (2014-2017).
6. **Cognitive Heterogeneous Networks: Interference-aware Resource-efficient Design and Performance Analysis**, funded by Qatar National Research Fund.

   Mohamed Abdallah (PI) , Collaborators: Khalid Qaraqe, Mohamed-Slim Alouini, and Mohamed Khairy.

   Amount: US$ 1M (2012 - 2015).
7. **Smarter Smart Phones: Adapting to a Changing Digital Landscape with Reconfigurable Antennas**, funded by Qatar National Research Fund.

   Mohamed Abdallah (Co-Lead PI), Collaborators: Jean-Francois Chamberland and Gregory Huff.

   Amount: US$ 1M (2012 - 2015).

8. **Visible Light Communications**, funded by Qatar National Research Fund.
   Mohamed Abdallah (Co-Lead PI), Collaborators: Costas Georghiades, Murat Uysal and Harald Haas.
   Amount: US$ 1M (2012 - 2015).
9. **Mobile WiMaX System Design and Analysis**, funded by National Telecommunication Regulatory Authority, Egypt.
   Mohamed Abdallah (PI), Collaborators: Mohamed Khairy, Ahmed Shalash, Mohammed Nafie.
   Amount: US$ 400K (2007 - 2009).

Students and Postdoctoral Fellows-Current

- **Current Postdoctoral Associates**
  1. Dr. Nourreddine Lasla (HKBU, 2018-current)
     Topic: Developing Blockchain Technology for peer-to-peer Energy Trading Systems.
  2. Dr. Bekir Ciftler HBKU, 2019-current
     Topic: Federated Learrning for Wireless Networks
- **Current Ph.D. Students (Main advisor)**
  1. Abdullatif Albasser (HBKU, Expected Graduation May 2021)
     Thesis title: Semisupervised Federated Learning.
  2. Abdulmalik Alwarafy (HBKU, Expected Graduation May 2022)
     Thesis title: Beamfroming techniques using Federated Learning.
  3. Danya Saifaldeen (HBKU, Expected Graduation May 2020)
     Thesis title: Developing machine learning techniques for hybrid RF/VLC systems.
  4. Hamed Al-Shaibani (HBKU, Expected Graduation May 2020)
     Thesis title: Developing Blockchain-based solutions for the the financial sector.
  5. Noora Al-Maslmani (HBKU, Expected Graduation May 2021)
     Thesis title: Blockchain systems for IoT networks
  6. Afaf Al-Sherawi (HBKU, Expected Graduation May 2021)
     Thesis title: Security techniques for smart grid networks
  7. Eman Abouzohri (HBKU, Expected Graduation May 2022)
     Thesis title: Physical layer security for Wireless EV charging Systems
- **Current M. Sc. Students (Main advisor)**
  1. Noor AlMarrii (HBKU, Expected Graduation May 2020)
     Thesis title: IoT malware detection using machine learning techniques
  2. Bader Al-Sada (HBKU, Expected Graduation May 2020)
     Thesis title: Developing blockchain technology for IoT-based energy trading systems
  3. Majid Al-Nisf (HBKU, Expected Graduation May 2020)
     Thesis title: Direction Finder systems for Passive Radar.

Students and Postdoctoral Fellows-Former

- **Former Postdoctoral Associates**
  1. Dr. Galymzhan Nauryzbayev (HBKU, 2017-2019)
     Topic: Resource optimization for next generation wireless networks.
  2. Dr. Imran Ansari (TAMUQ, Currently working as an Assistant Professor at University of Glasgow)
     Topic: Performance analysis of hybrid RF/FSO systems.

3. Dr. Islam Baryram (TAMUQ, Currently working as a research scientist at Qatar Environment and Energy Research Institute)
   Topic: Energy management in smart grids and electric vehicles.
4. Dr. Mohamed El-Kashef (TAMUQ, Currently working as a Research Associate at National Institute of Standards and Technology)
   Topic: Cooperative User Scheduling for Visible light communication.
5. Dr. Ochirkhand Erdene-Ochir (TAMUQ, Currently working as a Patent Examiner at European Patent Office)
   Topic: Network resilience framework for smart metering systems.

- **Former Ph.D. and M. Sc. Students (Main advisor)**

1. Jaber Al-Khori (HBKU, Defended May 2018)
   Thesis title: Physical layer security for relaying systems in hybrid RF/VLC systems.
2. Maryam Al-Ammari (HBKU, Defended May 2018)
   Thesis title: Developing blockchain technology for IoT-based energy trading systems
3. Noora Al-Maslmani (HBKU, Defended May 2018)
   Thesis title: Sinkhole Attack Detection in WSN using Swarm Intelligence Optimization
4. Amna Al-Mejali (HBKU, Defended May 2018)
   Thesis title: Voip Security: Dos Flooding-based Attacks Detection
5. Maryam Al-Fehani (HBKU, Defended May 2018)
   Thesis title: The Use of Political Bots for Political Propaganda and Astroturfing.
6. Afaf Al-Sherawi (HBKU, Defended May 2018)
   Thesis title: Electrical Demand Load Forecasting for Qatar using a hybrid model of Artificial Neural Network and Swarm Intelligence Optimization
7. Nour Elhoda Tabet (HBKU, Defended May 2018)
   Thesis title: Multi-Metrics Jamming Detection algorithm for UAV networks
8. Mahmoud El-Achi (HBKU, Defended May 2018)
   Project title: Project Performance Assessment of Ofdm-PLC technology for Smart Meters Deployment in Qatar
9. Aseel Ghazal (HBKU, Defended June 2018)
   Thesis title: Intentions of Twitter Automation: A study of Tweet Sources.
10. Ahmed Elshahraany (Cairo University, Graduated in Aug. 2014)
    Thesis title: On Relay Selection in Multiuser Cognitive Systems.
11. Mostafa ElSayed (Cairo University, Graduated in Aug. 2013)
    Thesis title: Efficient Diversity Techniques for Cognitive Spectrum Sharing Networks.
12. Ahmed Gamal (Cairo University, Graduated in July 2011)
    Thesis title: Adaptive Rate Transmission and Power Allocation for Spectrum Sharing in Cognitive Radio Networks.
13. Mohamed Nassar (Cairo University, Graduated in June 2011)
    Thesis title:Interference Mitigation Schemes for Advanced MIMO Systems.
14. Mahmoud Sobhy (Cairo University, Graduated in Oct. 2010)
    Thesis title: Opportunistic Cognitive Relaying for Wireless Networks: Performance Analysis and Optimization.
15. Mohamed Hany (Cairo University, Graduated in Aug 2009.)
    Thesis title: Interference-Minimizing Code Assignment for Cognitive Underlay CDMA Systems.
16. Mohamed Khairy (Cairo University, Graduated in June 2009)
    Thesis title: Implementation of Fixed Sphere Decoder for MIMO Systems.

Exam Committees

- **Member of M.Sc. Thesis Committee**
  1. Ahmed Al-Kuawri, M. Sc. of Cybersecurity, May 2018.
  2. Abdulaziz H. Al-Marwani, M. Sc. of Cybersecurity, May 2018.
  3. Priyanka Dodia, M. Sc. of Cybersecurity, May 2018.
  4. Mohammed E. Alshriem, M. Sc. of Cybersecurity, May 2018.
  5. Aqsa Nazir, M. Sc. of Cybersecurity, May 2018.
  6. Mehazabeen Mannan (chair), M.Sc. of Sustainability, May 2018.
  7. Abulrahman Altamimi (chair), M.Sc. of Sustainability, May 2018.
  8. Saad Ghani Ullah Hafiz (chair), M.Sc. of Sustainability, May 2018.
  9. Noor Al-Maslamani (chair), M.Sc. of Life Sciences, May 2018.
  10. Meead Al-Jassim (chair), M.Sc. of Sustainability, May 2018.
  11. Ameema Zainab, M.Sc. of Data Science, May 2018.
  12. Abdulaziz Yousaf Al-Homaid, M.Sc. of Data Science, May 2018.
  13. Kamela Al-Manai, M.Sc. of Data Science, May 2018.
  14. Ali ElDous, M.Sc. of Data Science, May 2018.
- **Member of Ph.D. Qualification Exam Committee**
  1. Ali Al-Rashid, Ph.D. of Computer Science and Engineering, June 2018.
  2. Hend Gedawy, Ph.D. of Computer Science and Engineering, April 2018.
  3. Elmahdi Bentafat, Ph.D. of Computer Science and Engineering, April 2018.
  4. Sana Alfarsi, Ph.D. of Computer Science and Engineering, June 2018.
  5. Dana Abdeen, Ph.D. of Sustainability, June 2018.

Books Chapters

1. Ahmed Sherif, Ahmad Alsharif, Mohamed M E A Mahmoud, and Mohamed M. Abdallah, "Priority-based and Privacy-preserving Electric Vehicle Dynamic Charging System with Divisible E-Payment," *Smart Cities Cybersecurity and Privacy Book*, Elsevier Press, USA
2. Mohamed Kashef, Muhammad Ismail, Mohamed Abdallah, Khalid A. Qaraqe, and Erchin Serpedin, "Visible Light Communications for Energy Efficient Heterogeneous Wireless Networks," *Energy Management in Wireless Cellular and Ad-hoc Networks*, pp. 299-317, Springer International Publishing, 2016.
3. Khalid A. Qaraqe, Mohamed Abdallah, Muhammad Zeeshan Shakir, "Resource Efficient Design for Heterogeneous Networks (REDHET)," *Excellence and Impact of Research at Texas A&M at Qatar,* QScience, Bloomsbury Publishing UK, 2013.
4. Ayman Elezabi, Mohamed Kashef, Mohamed Abdallah, "A survey of interference mitigation in underlay cognitive radio networks," invited chapter in *Cognitive Radio: Terminology, Technology and Techniques,* Nova Science Publishers.
5. Mohamed S. Khairy, Mohamed M. Abdallah and Serag E. D. Habib, "Efficient Implementation of MIMO decoders," invited chapter in *MIMO Systems, Theory and Applications*, InTech Open Access Publisher.

Patents

1. Hassan Mohamed El-Sallabi, Mohamed Abdallah, Khalid Ali Qaraqe, Gregory H. Huff, and Jean-Francois Chamberland, "Geo-security method and system," U.S. Patent Application 15/286,527, filed April 6, 2017.
2. Hassan Mohamed El-Sallabi, Mohamed Abdallah, Khalid Ali Qaraqe, Gregory H. Huff, and Jean-Francois Chamberland, "Reconfigurable Radio Direction Finder System," U.S. Patent 9,819,081, issued November 14, 2017.
3. Ayman Elezabi, Mohamed Kashef, Mohamed Abdallah, and Mohamed Khairy, "Methods, systems, and computer readable media for interference-minimizing code assignment and system parameter selection for code division multiple access (CDMA) networks," U.S. Patent 8,737,362, issued May 27, 2014.

Publications - Journals

1. Nabil, Mahmoud, Ahmed Sherif, Mohamed Mahmoud, Ahmad Alsharif, and Mohamed Abdallah. "Efficient and Privacy-Preserving Ridesharing Organization for Transferable and Non-Transferable Services." *IEEE Transactions on Dependable and Secure Computing*, 2019.
2. Sultangali Arzykulov, Galymzhan Nauryzbayev, Theodoros A. Tsiftsis, Behrouz Maham, and Mohamed Abdallah. "On the Outage of Underlay CR-NOMA Networks with Detect-and-Forward Relaying." *IEEE Transactions on Cognitive Communications and Networking* , 2019.
3. Jaber Al-Khori, Galymzhan Nauryzbayev, Mohamed M. Abdallah, and Mounir Hamdi. "Joint beamforming design and power minimization for friendly jamming relaying hybrid RF/VLC systems." *IEEE Photonics Journal* vol. 11, no. 2, 2019.
4. Ahmad Alsharif, Mahmoud Nabil, Mohamed MEA Mahmoud, and Mohamed Abdallah. "EPDA: Efficient and Privacy-Preserving Data Collection and Access Control Scheme for Multi-Recipient AMI Networks." *IEEE Access* vol. 7, pp. 27829-27845, 2019.
5. Noha Anous, Tarek Ramadan, Mohamed Abdallah, Khalid Qaraqe, and Diaa Khalil. "Planar asymmetric nano-resonators for highly angle tolerant trans-reflective color filters." *OSA Continuum* vol. 2, no. 3, pp. 890-904, 2019.
6. Sultangali Arzykulov, Theodoros A. Tsiftsis, Galymzhan Nauryzbayev, and Mohamed Abdallah. "Outage performance of cooperative underlay CR-NOMA with imperfect CSI." *IEEE Communications Letters,* vol. 23, no. 1, pp. 176-179, 2018.
7. Galymzhan Nauryzbayev, Mohamed Abdallah, and Hany Elgala. "Outage of SEE-OFDM VLC-NOMA Networks." *IEEE Photonics Technology Letters* vol. 31, no. 2 pp. 121-124, 2018.
8. Noha Anous, Tarek Ramadan, Mohamed Abdallah, Khalid Qaraqe, and Diaa Khalil, "Impact of blue filtering on effective modulation bandwidth and wide-angle operation in white LED-based VLC systems," *OSA Continuum,* vol 1, no. 3, pp. 910-929, 2018.
9. Salah Hessien, Sezer Can Tokgoz, Noha Anous, Ali Boyacı, Mohamed Abdallah, and Khalid Qaraqe, "Experimental Evaluation of OFDM based Underwater Visible Light Communication System," *IEEE Photonics Journal.*, vol. 10, no. 5, 2018.
10. Mai Kafafy, Yasmine Fahmy, Mohamed Abdallah, and Mohamed Khairy, "A novel bandwidth and power allocation scheme for power efficient hybrid RF/VLC indoor systems," *Physical Communication*, May 2018.
11. G. Nauryzbayev, K. M. Rabie, M. Abdallah and B. Adebisi, "On the Performance of Wireless Powered AF Relaying Systems over α-μ Fading Channels," *IEEE Access,* vol. 6, no. 1, pp. 37138-37149, December 2018.
12. S. Arzykulov, G. Nauryzbayev, T. A. Tsiftsis and M. Abdallah, "On the Performance of Wireless Powered Cognitive Relay Network With Interference Alignment," *IEEE Transactions on Communications,* vol. 66, no. 9, pp. 3825-3836, Sept. 2018.
13. Miramirkhani, Farshad, Murat Uysal, Omer Narmanlioglu, Mohamed Abdallah, and Khalid Qaraqe, "Visible Light Channel Modeling for Gas Pipelines," *IEEE Photonics Journal,* vol. 10, no. 2, pp. 1-10, April 2018.

14. N. Anous, M. Abdallah, M. Uysal and K. Qaraqe, "Performance Evaluation of LOS and NLOS Vertical Inhomogeneous Links in Underwater Visible Light Communications," *IEEE Access,* vol. 6, pp. 22408-22420, 2018.

15. M. Kashef, M. Abdallah and N. Al-Dhahir, "Transmit Power Optimization for a Hybrid PLC/VLC/RF Communication System," *IEEE Transactions on Green Communications and Networking,* vol. 2, no. 1, pp. 234-245, March 2018.

16. G. Nauryzbayev, E. Alsusa and M. Abdallah, "On the Feasibility of Interference Alignment in Compounded MIMO Broadcast Channels with Antenna Correlation and Mixed User Classes," *IEEE Transactions on Vehicular Technology,* vol. 67, no. 3, pp. 2130-2140, March 2018.

17. Y. Sapenov, A. Chaaban, Z. Rezki, M. Abdallah, K. Qaraqe and M. S. Alouini, "Diversity Order Results for MIMO Optical Wireless Communications,"*IEEE Wireless Communications Letters,* vol. 7, no. 1, pp. 74-77, Feb. 2018.

18. Noha Anous, Tarek Ramadan, Mohamed Abdallah, Khalid Qaraqe, and Diaa Khalil, "Planar broad-band and wide-angle hybrid plasmonic IMI filters with induced transmission for visible light applications," *Applied Optics,* vol. 56, no. 31, pp. 8751-8758, 2017.

19. Mohammed Elamassie, Murat Uysal, Yahya Baykal, Mohamed Abdallah, and Khalid Qaraqe, "Effect of eddy diffusivity ratio on underwater optical scintillation index," *Journal of the Optical Society of America A,* vol. 34, issue 11, pp. 1969-1973, 2017.

20. Taniya Shafique, Osama Amin, Mohamed Abdallah, Imran Shafique Ansari, Mohamed-Slim Alouini, and Khalid Qaraqe, "Performance Analysis of Single Photon Avalanche Diode Underwater VLC System Using ARQ," *IEEE Photonics Journal,* vol. 9, no. 5, pp. 1-11, Oct. 2017.

21. Hassan Oubei, Emna Zedini, Rami T. ElAfandy, Abla Kammoun, Mohamed Abdallah, Tien Khee Ng, Mounir Hamdi, Mohamed-Slim Alouini, and Boon S. Ooi, "Simple statistical Channel Model for Weak Temperature-induced Turbulence in Underwater Wireless Optical Communication Systems," *Optics Letters,* vol. 42, issue 13, pp. 2455-2458, 2017.

22. Carlos E. Mejia, Costas N. Georghiades, Mohamed M. Abdallah, and Yazan H. Al-Badarneh, "Code Design for Flicker Mitigation in Visible Light Communications Using Finite State Machines," *IEEE Transactions on Communications,* vol. 65, no. 5, pp. 2091-2100, May 2017.

23. Ahmed Elsamadouny, Ahmed El Shafie, Mohamed Abdallah, and Noafal Al-Dhahir, "Secure Sum-Rate-Optimal MIMO Multicasting over Medium-Voltage NB-PLC Networks," in *IEEE Transactions on Smart Grid*, vol. 9, no. 4, pp. 2954-2963, July 2018.

24. Noha Anous, Mohamed Abdallah, Tarek Ramadan, Khalid Qaraqe, and Diaa Khalil, "Angle-tolerant hybrid plasmonic filters for visible light communications," *Applied Optics*, vol. 56, issue 4, pp. C106-C116, 2017.

25. Islam Bayram, Mohamed Abdallah, Ali Tajer and Khalid Qaraqe,"A Stochastic Sizing Approach for Sharing-Based Energy Storage Applications," *IEEE Transactions on Smart grids*, vol. 8, no. 3, pp. 1075-1084, May 2017.

26. Z. Bouida, H. El-Sallabi, M. Abdallah, A. Ghrayeb and K. A. Qaraqe, "Reconfigurable Antenna-Based Space-Shift Keying for Spectrum Sharing Systems Under Rician Fading," in *IEEE Transactions on Communications*, vol. 64, no. 9, pp. 3970-3980, Sept. 2016.

27. M. Kashef, M. Ismail, M. Abdallah, K. A. Qaraqe and E. Serpedin, "Energy Efficient Resource Allocation for Mixed RF/VLC Heterogeneous Wireless Networks," in *IEEE Journal on Selected Areas in Communications*, vol. 34, no. 4, pp. 883-893, April 2016.

28. Mohamed Kashef, Mohamed Abdallah, Khalid Qaraqe, Harald Haas, and Murat Uysal, "Coordinated Interference Management for Visible Light Communication Systems,"in *IEEE/OSA Journal of Optical Communication and Networks*, vol. 7, no. 11, pp. 1098-1108, November 2015.

29. Mohamed Marzban, Muhammad Ismail, Mohamed Abdallah, Mohamed Khairy, Khalid A. Qaraqe, and Erchin Serpedin, "IDC Interference-Aware Resource Allocation for LTE/WLAN Heterogeneous Networks," *IEEE Transactions on Wireless Communication Letters*, vol. 4, no. 6, pp. 581-584, Dec. 2015.
30. Mustafa Yilmaz, Mohamed Abdallah, Hassan El-Sallabi, Jean-Francois Chamberland, Khalid Qaraqe, and Hussein Arslan, "Joint Subcarrier and Antenna State Selection for Cognitive Heterogeneous Networks with Reconfigurable Antennas," *IEEE Transaction on Communication*, vol. 63, no. 11, pp. 4015-4025, Nov. 2015.
31. Mohamed Marzban, Muhammad Ismail, Mohamed Abdallah, Mohamed Khairy, Khalid A. Qaraqe, and Erchin Serpedin, "IDC Interference-Aware Resource Allocation for LTE/WLAN Heterogeneous Networks," *IEEE Transactions on Wireless Communication Letters*, vol. 4, no. 6, pp. 581-584, Dec. 2015.
32. Pierre Brunisholz, Ochirkhand Erdene-Ochir, Mohamed Abdallah, Khalid Qaraqe, Marine Minier, and Fabrice Valois, "Network Coding versus Replication Based Resilient Techniques to Mitigate Insider Attacks for Smart Metering," *International Journal of Distributed Sensor Networks*, vol. 11, no. 6, pp. 737269, 2015.
33. Islam Bayram, Ali Tajer, Mohamed Abdallah, and Khalid Qaraqe, "Capacity Planning Frameworks for Electric Vehicle Charging Stations With Multiclass Customers," in *IEEE Transactions on Smart grids*, vol. 6, no. 4, pp. 1934-1943, July 2015.
34. Marwa Qaraqe, Mohamed Abdallah, Mohamed-Slim Alouini, and Erchin Serpedin, "Performance Analysis of Switch-based Multiuser Scheduling Schemes with Adaptive Modulation in Spectrum Sharing Systems," *Journal of Wireless Communications and Mobile Computing*, vol. 15, no. 17, pp. 2095-2110, 2015.
35. Mostafa Sayed, Mohamed Abdallah, Khalid Qaraqe, Kamel Tourki, and Mohamed-Slim Alouini, "Joint Opportunistic Beam and Spectrum Selection Schemes for Spectrum Sharing Systems with Limited Feedback", *IEEE Transactions on Vehicular Technology*, March 2014.
36. Kamel Tourki, Khalid Qaraqe, and Mohamed Abdallah, "Outage Analysis of Spectrum Sharing Cognitive DF Relay Networks Using Outdated CSI", *IEEE Communication Letters*, vol.17, no.12, pp. 2272 - 2275, Dec. 2013.
37. Mostafa Sayed, Mohamed Abdallah, Khalid Qaraqe, and Mohamed-Slim Alouini, "Joint Switched Multi-Spectrum and Transmit Antenna Diversity for Spectrum Sharing Systems," *IEEE Transactions on Wireless Communications*, vol. 12, no. 10, pp. 4827 - 4839, Oct. 2013.
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Academic Services

- **College Level**
  - Director of the Undergraduate Studies, Sept.2018-Present.
  - Member of Learning and Curriculum committee, Sept.2018-Present.
- **Division Level**
  - Chair of Admission and Student affairs committee, Sept.2018-Present.
  - Member of the Admission committee, Sept.2017-Sept.2018.
  - Chair of Students Affairs committee for the undergraduate computer engineering program, Sept.2017- Sept. 2018.
  - Member of the Curriculum committee, Sept.2017-Sept. 2018.
  - Member of the Faculty Search committee, Sept.2017-Sept. 2018.
  - Academic Advisor for the undergraduate computer engineering program, Sept. 2017-Sept. 2018.

Professional Activities

- **Editorial Board**
  - Associate Editor for IEEE Transactions on Communications, Dec 2015 - Present.
  - Associate Editor for IEEE Open Access Journal of Communications, Sept. 2019 - Present.
- **Conference and Workshop Organization**
  - Track co-chair: Multiple Antenna Systems and Cooperative Communications, 90th IEEE Vehicular Technology Conference (VTC Fall 2019).
  - Track co-chair: Next Generation Systems and Networks Symposium, 13th International Wireless Communications and Mobile Computing Conference (IWCMC), June 2017.
  - Workshop co-chair: The IEEE Wireless Communications and Networking Conference (WCNC) workshop on Optical Wireless Communications, April 2016.
  - Technical Program co-chair: 10th International Conference on Cognitive Radio Oriented Wireless Networks (Crowncom, 2015).
- **Program Committee Membership**
  - IEEE Wireless Communications and Networking Conference (WCNC), Physical layer track, Marrakech, Morocco, April 2019.
  - IEEE Global Communications Conference (Globecom), Wireless Communication, Abu Dhabi, UAE, Dec. 2018.
  - IEEE Global Communications Conference (Globecom), Wireless Communication, Singapore, Dec. 2017.
  - IEEE Global Communications Conference (Globecom), Signal Processing for Communication, Washington DC, USA, Dec. 2016.

- IEEE Vehicular Technology Conference (VTC), Adhoc Networks Symposium track, Montreal, Canada, Fall 2016.
- IEEE International Conference on Communications (ICC), Cognitive Radio Symposium, Malaysia, Dec. 2016.
- IEEE Wireless Communications and Networking Conference (WCNC), Physical layer track, Doha, Qatar, April 2016.
- The 24th World International Traffic Medicine Association (ITMA) Congress, Doha, Qatar, Nov. 2016.
- IEEE Global Communications Conference (Globecom), Signal Processing for Communication, San Diego, USA, Dec. 2015.
- IEEE Global Communications Conference (Globecom), Cognitive Radio Symposium, Austin, Texas, Dec. 2014.
- IEEE International Conference on Communications (ICC), Cognitive Radio Symposium, Sydney, Australia, May 2014.
- IEEE International Conference on Communications (ICC), Cognitive Radio Symposium, Budapest, Hungary, May 2013.
- IEEE International Conference on Communications (ICC), Cognitive Radio Symposium, Ottawa, Canada, May 2012
- International Conference on Cognitive Radio Oriented Wireless Networks (Crowncom) Stockholm, Sweden, 2012.
- IEEE International Symposium on Personal, Indoor and Mobile Radio Communications (PIMRC 2011), Toronto, Canada.
- International Conference on Cognitive Radio Oriented Wireless Networks (Crowncom), Japan, 2011.
- IEEE International Conference on Telecommunications (ICT), Doha, Qatar, April 2010.
- IEEE Global Communications Conference (Globecom) - AdHoc and Sensor Networks Symposium 2007.

- **Standard Memberships**
  - IEEE 802.16m WiMAX standard committee member (2008-2010).
  - IEEE standard 802.15.7r1 titled 'Short range optical communications' standard committee member (2015-2017).
- **Journal Reviewing**
  - IEEE Transactions on Communications, IEEE Transactions on Wireless Communications, IEEE Communication Letters, IEEE Journal on Selected Areas in Communications, IEEE Transactions on Signal Processing, IEEE Transactions on Signal Processing letters, and IET Transactions on Signal Processing.
- **Professional Memberships**
  - Senior IEEE member.
  - IEEE Communication Society.
- **Judge Activities**
  - Panelist: NPRP GSRA 2nd cycle program.
  - Judge: QNRF Annual research conference (ARC) held in Doha, Nov. 2013.

Selected Presentation and Talks

- "Secure and Reliable Infrastructure for Dynamic Electric Vehicle Charging in Smart Grid," "Deploying Autonomous Vehicles in Smart Cities," Panel at the International Conference on Computing Sciences and Engineering (ICCSE 2018), Kuwait. (**Invited Talk**).
- Adaptive Discrete Power and Rate Modulation for Spectrum Sharing Systems, KAUST, May 2010 (**Invited Talk**).
- It is a fact: Noise can be useful, University of Maryland Research Interaction Day (GRID), Spring 2003, (**Best Talk Award**).