DR. UMAR S. ALQASEMI

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Education

Degree	Field	Institution	Year
PhD	Biomedical Engineering	University of Connecticut, Storrs, Mansfield, USA	July 2013
MS	Biomedical Engineering	University of Connecticut, Storrs, Mansfield, USA	Jan. 2011
BS	Electrical and Computer Engineering (Biomedical),	King Abdulaziz University, Jeddah, KSA	July 2007

Academic Experience

From	To	Institution	Rank	Title (Chair, Coordinator, etc.)	Full or Part Time
2019	Date	King Abdulaziz Univ.	Associate Professor		Full Time
2014	2019	King Abdulaziz Univ.	Assistant Professor	Coordinator of Senior Design Projects (SDP) Committee	Full Time
2013	2014	King Abdulaziz Univ.	TA		Full Time
2010	2013	Univ. of Connecticut	RA		Part Time
2008	2009	King Abdulaziz Univ.	TA		Full Time

Non Academic Industrial Experience *(including Consultations)*

From	To	Company/Entity	Title	Position Description (Brief)	Full or Part Time
2013	2014	Golden Line Factory	Consultant	Troubleshooting and Preventive Maintenance	Part Time
2008	2008	King Abdulaziz University Radiation Safety Committee	Radiation Safety Engineer	Research and Quality Assurance	Full Time
2006	2006	King Fahad General Hospital	BME Intern	Management and Maintenance	Full Time

Current Membership in Professional Societies and Organizations

	Society/organization	Rank	Member Since
1.	SSSBE: Saudi Scientific Society of Biomedical Engineering http://www.sssbe.org/	Board Member	2018
2.	IEEE: Institute of Electrical and Electronics Engineers	Member	2009
3.	SPIE: the international society for optics and photonics	Member	2010

Honours and Awards

1. Reviewer in SPIE Journal of Medical Imaging since 2019.
2. Reviewer in Elsevier Journal of Biomedical Signal Processing and Control, since 2017
3. Reviewer in SPIE Journal of Biomedical Optics (Impact Factor ~3.5), 2011-2017.
2. Reviewer in SPIE Journal of Electronic Imaging, 2016.
3. Reviewer in IEEE Photonics Journal, 2016.
4. Listed four times in the Editor's Selection of Highly Cited Articles in IEEE UFFC, July, Oct, and Dec 2013, and Jan 2014.
5. UConn BME Graduate Researcher Award, University of Connecticut, USA, 2013.
6. UConn BME Graduate Student Travel Award, University of Connecticut, USA, 2013.
7. SACM Early PhD Graduation Award, Royal Embassy of Saudi Arabia, USA, 2013.
8. SACM Excellent PhD Graduation Award, Royal Embassy of Saudi Arabia, USA, 2013.
9. Top Accessed IEEE UFFC Articles in Nov 2012.
10. UConn BME Advanced Graduate Student Fellowship, University of Connecticut, USA, 2011.
11. NEA Summer Research Fellowship, National Education Association, USA, 2010.

Journal Publications

1. Shabbir Chowdhury, Rino Ferdian Surakusumah, Umar Alqasemi, "Dealing with Unethical Colleague in the field of Biomedical Engineering," Journal Technological Science & Engineering (JTSE), Vol. 1, No. 2, July 02, 2021.
2. SaheedAdemola Bello, Umar Alqasemi, "Computer Aided Detection of Obstructive Sleep Apnea From EEG Signals," Signal & Image Processing: An International Journal (SIPIJ), Vol.12, No. 3, June 20, 2021.
3. Ali Raza, Ali Mustafa, Umar Alqasemi, Kumars Rouzbehi, Raheel Muzzammel, Song Guobing, Ghulam Abbas, "HVdc Circuit Breakers: Prospects and Challenges," MDPI, Appl. Sci. 2021, 11, 5047, May 29, 2021.
4. Mohammed K. Bin jaah, Abdullah Aljuhani, Umar S. Alqasemi, "Characterization of liver Disease Based on Ultrasound Imaging System," International Journal of Engineering and Advanced Technology (IJEAT), ISSN: 2249-8958, Vol. 10, No. 3, Feb. 28, 2021.
5. Iqra Tariq, Raheel Muzzammel, Umar Alqasmi, Ali Raza, "Artificial Neural Network-Based Control of Switched Reluctance Motor for Torque Ripple Reduction," Hindawi, Mathematical Problems in Engineering, Vol. 2020, Article ID 9812715, Dec. 07, 2020.
6. Umar S. Alqasemi, Anas Y. Saleh, "Computer Aided Diagnosis of Magnatic Resonance Brain Tumors Images with Automatic Segmentation," International Journal of Engineering Research & Technology (IJERT), ISSN: 2278-0181, Vol. 9, No. 12, Dec. 2020.
7. M Aldahami, U Alqasemi, "Classification of OCT Images for Detecting Diabetic Retinopathy Disease Using Machine Learning," BMC Medical Imaging, In Review since Aug. 14, 2020.
8. Loai Kinani, Umar Alqasemi "Computer-Aided Diagnosis of Mammography Cancer," International Journal of Engineering and Advanced Technology (IJEAT), ISSN: 2249 – 8958, Vol. 9, No. 5, June 2020.
9. Umar Alqasmi, Ammar Alzuhair, Abduallah Bama'bad, "Enhanced System for Computer-Aided Detection of MRI Brain Tumors," Signal & Image Processing: An International Journal (SIPIJ) Vol. 11, No. 1, February 2020
10. Yahia Osman, Umar Alqasemi, "Breast Cancer Computer-Aided Detection System based on Simple Statistical Features and SVM Classification," (IJACSA) International Journal of Advanced Computer Science and Applications, Vol. 11, No. 1, Jan. 2020.
11. Saleh A. Alzahrani, Umar S. Alqasemi, "Computer Aided Diagnosis of Ventricular Arrhythmias from Electrocardiogram Lead II Signals," *Signal & Image Processing*: An International Journal (SIPIJ), ISSN: 2229 – 3922, Vol. 9, No. 5, pp. 1-18, Oct. 2018.
12. Umar S. Alqasemi, Ahmed A. Qashgari, Mukhtar M. Alansari, "Computer-Aided Diagnosis of Digital Mammograms using Gabor Wavelets," *International Journal of Engineering and Advanced Technology* (IJEAT), ISSN: 2249 – 8958, Volume-8 Issue-1, pp. 15-17, Oct. 2018.
13. Umar S. Alqasemi, Ahmed A. Qashgari, Mukhtar M. Alansari, "Enhanced Detecting System for Computer-Aided Diagnosis of CT Lung Cancer," *International Journal of Engineering and Advanced*

Technology (IJEAT), ISSN: 2249 – 8958, Volume-8 Issue-1, pp. 11-14, Oct. 2018.

14. Umar Alqasemi, Hassan S. Salehi, and Quing Zhu, "Method for estimating closed-form solutions of light diffusion equation for turbid media of any boundary shape," *Journal of Optical Society of America A*, vol. 33(2), pp. 205-213, Feb. 2016.

15. Hassan Salehi, Patrick Kumavor, Umar Alqasemi, Hai Li, Tianheng Wang, Chen Xu, and Quing Zhu, "Design of optimal light delivery system for co-registered transvaginal ultrasound and photoacoustic imaging of ovarian tissue," Elsevier, *Photoacoustics,* vol. 3(3), pp. 114-122, Sept. 2015.

16. Hai Li, Patrick Kumavor, Umar Salman Alqasemi, and Quing Zhu, "Utilizing spatial and spectral features of photoacoustic imaging for ovarian cancer detection and diagnosis", *J. Biomed. Opt.*, vol. 20(1), Jan. 2015.

17. Guangqian Yuan, Umar Alqasemi, Aaron Chen, Yi Yang, and Quing Zhu, "Light-emitting diode-based multiwavelength diffuse optical tomography system guided by ultrasound", *J. Biomed. Opt.*, vol. 19(12), Dec. 2014.

18. Umar Alqasemi, Hai Li, Guagqian Yuan, Patrick Kumavor, Saeid Zanganeh, and Quing Zhu, "Interlaced photoacoustic and ultrasound imaging system with real-time coregistration for ovarian tissue characterization," *Journal of Biomedical Optics*, vol. 19(7), July 2014.

19. Chen Xu, Patrick Kumavor, Umar Alqasemi, Hai Li, Yan Xu, Saeid Zanganeh, and Quing Zhu, "Indocyanine Green Enhanced Co-registered Diffuse Optical Tomography and Photoacoustic Tomography," *Journal of Biomedical Optics*, vol. 18(12), Dec. 2013.

20. Tianheng Wang, Yi Yang, Umar Alqasemi, Patrick D. Kumavor, Xiaohong Wang, Melinda Sanders, Molly Brewer, and Quing Zhu, "Characterization of ovarian tissue based on quantitative analysis of photoacoustic microscopy images," *Biomedical Optics Express*, vol. 4(12), Dec. 2013.

21. Saeid Zanganeh, Hai Li, Patrick D. Kumavor, Umar Alqasemi, Andres Aguirre, Innus Mohammad, Courtney Stanford, Michael B. Smith, and Quing Zhu, "Photoacoustic imaging enhanced by ICG conjugated single wall carbon nanotubes," *Journal of Biomedical Optics*, vol. 18(9), Sept. 2013.

22. Patrick Kumavor, Umar Alqasemi, Behnoosh Tavakoli, and Quing Zhu, "Co-registered Pulse-Echo/Photoacoustic Transvaginal Probe for Real Time Imaging of Ovarian Tissue," *Journal of Biophotonics*, vol. 6(6-7), June 2013.

23. Umar Alqasemi, Patrick D Kumavor, Andres Aguirre, and Quing Zhu, "A recognition algorithm for assisting ovarian cancer diagnosis using co-registered ultrasound and photoacoustic images: an ex vivo study," *Journal of Biomedical Optics*, vol. 17(12), Dec. 2012.

24. (Cover Paper) Umar Alqasemi, Hai Li, Andres Aguirre, and Quing Zhu, "FPGA-based Reconfigurable Processor for Ultrafast Interlaced Ultrasound and Photoacoustic Imaging," *IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control*, vol. 59(7), July 2012.

25. Patrick D. Kumavor ; Chen Xu ; Andres Aguirre ; John Gamelin ; Yasaman Ardeshirpour, et al., "Target detection and quantification using a hybrid hand-held diffuse optical tomography and photoacoustic tomography system", J. Biomed. Opt., vol. 16(4), April 2011.

Conference Presentations

1. Guangqian Yuan, Umar Alqasemi, Yi Yang, and Quing Zhu, "A Low-cost Multi-wavelengths Continuous-wave Diffuse Optical Tomography System Using LED Sources," Proceedings of Biomedical Optics Conference, by Optical Society of America, April 2014.

2. Tianheng Wang, Yi Yang, Umar Alqasemi, Patrick Kumavor, Molly Brewer, and Quing Zhu, "Quantification of photoacoustic microscopy images for ovarian cancer detection," *Proc. of SPIE 8943, Photons Plus Ultrasound: Imaging and Sensing* 2014, 894306, Mar. 2014.

3. Hassan Salehi, Patrick Kumavor, Umar Alqasemi, Hai Li, Tianheng Wang, and Quing Zhu, "High-throughput fiber-array transvaginal photoacoustic probe for in vivo ovarian cancer imaging," *Proc. of SPIE 8943, Photons Plus Ultrasound: Imaging and Sensing* 2014, 894335, Mar. 2014.

4. Hai Li, Patrick Kumavor, Umar Alqasemi, and Quing Zhu, "Classification algorithm of ovarian tissue based on co-registered ultrasound and photoacoustic tomography," Proc. of *SPIE 8943, Photons Plus Ultrasound: Imaging and Sensing* 2014, 894349, Mar. 2014.

5. Umar Alqasemi, Hai Li, Quangqian Yuan, Patrick Kumavor, Saeid Zanganeh, and Quing Zhu, "Real-time interlaced ultrasound and photoacoustic system for in vivo ovarian tissue imaging," *Proc. of SPIE 8581, Photons Plus Ultrasound: Imaging and Sensing* 2013, 85814S, Mar. 2013.

6. Umar Alqasemi, Patrick Kumavor, Andres Aguirre, and Quing Zhu, "Recognizing ovarian cancer from co-registered ultrasound and photoacoustic images," *Proc. of SPIE* 8581, *Photons Plus Ultrasound: Imaging and Sensing* 2013, 85812Q, Mar. 2013.

7. Patrick D. Kumavor, Umar S. Alqasemi, Behnoosh Tavakoli, Hai Li, Yi Yang, and Quing Zhu, "Transvaginal photoacoustic imaging probe and system based on a multiport fiber-optic beamsplitter and a real time imager for ovarian cancer detection," *Proc. of SPIE* 8581, *Photons Plus Ultrasound: Imaging and Sensing* 2013, 85813L, Mar. 2013.

8. Saeid Zanganeh, Hai Li, Patrick D. Kumavor, Umar S. Alqasemi, Andres Aguirre, Innus Mohammad, Courtney Stanford, Michael B. Smith, Quing Zhu, "Single wall carbon nanotube/bis carboxylic acid-ICG as a sensitive contrast agent for in vivo tumor imaging in photoacoustic tomography," *Proc. of SPIE* 8581, *Photons Plus Ultrasound: Imaging and Sensing* 2013 , 85814R, Mar. 2013.

9. Tianheng Wang, Yi Yang, Umar Alqasemi, Patrick Kumavor, Molly Brewer, and Quing Zhu, "Photoacoustic microscopy for ovarian tissue characterization," *Proc. of SPIE* 8581, *Photons Plus Ultrasound: Imaging and Sensing* 2013, 85814M, Mar. 2013.

10. Umar S. Alqasemi, Hai Li, Andres Aguirre, Quing Zhu, "Ultrafast ultrasound and photoacoustic co-registered imaging system based on FPGA parallel processing", *Proc. SPIE* 8223, 82232U, Feb. 2012.

11. Umar Alqasemi, Hai Li, Andres Aguirre and Quing Zhu, "Real-time co-registered ultrasound and photoacoustic imaging system based on FPGA and DSP architecture",Proc. SPIE 7899, 78993S, Feb. 2011.

12. Aaron Chen, Yi Yang, Umar Alqasemi, Andres Aguirre and Quing Zhu, "A low cost multi-wavelength tomography system based on LED sources", Proc. SPIE 7896, 789613, Feb. 2011.

13. Patrick D. Kumavor, Andres Aguirre, Chen Xu, John Gamelin, Yasaman Ardeshirpour, Behnoosh Tavakoli, Saeid Zanganeh, Umar S. Alqasemi and Quing Zhu, "Target detection and characterization using a hybrid handheld diffuse optical tomography and photoacoustic tomography system", Proc. SPIE 7896, 789614, Feb. 2011.

14. Saeid Zanganeh, Andres Aguirre, Nrusingh C. Biswal, Christopher Pavlik, Michael B. Smith, Umar Alqasemi, Hai Li and Quing Zhu, "Hypoxia targeted carbon nanotubes as a sensitive contrast agent for photoacoustic imaging of tumors", Proc. SPIE 7899, 78991S, Feb. 2011.

Key Skills and Experiences

1. Image and Signal Processing Using MATLAB
2. Genetic Algorithm Using MATLAB
3. Neural Network Design Using MATLAB
4. Support Vector Machine Classification.
5. k-Wave MATLAB Package for Time-domain Simulation of Acoustic and Photoacoustic Wave Fields.
6. Ultrasound and Photoacoustic Signal Processing and Image Formation.
7. Diffuse Optical Tomography.
8. Gradient and Conjugate Gradient Descent Algorithms.
9. FEM Simulation using COMSOL Multiphysics 5.1; including Light in Diffusive Regime, Electromagnetic package, and Microfluidic Channels Design for Lab-on-Chip.
10. Simulation using Monte Carlo Modeling of Light (MCML) software.
11. FPGA/CPLD Design & HDL Programming
12. Design of Ultra-low Noise VHF PCBs
13. Low Voltage Differential Signal (LVDS) Processing and PCB Design for High Speed Communication Applications
14. High Fidelity Power Supply Design for Imaging Systems
15. C/C++/BASIC/MATLAB Programming
16. MATLAB SIMULINK
17. Lego Mindstorms Programming
18. Mechanical CAD Design / Basic Workshop Skills / 3-D Printing
19. Q-switched Nano-second Pulsed Lasers.
20. Laser diodes for CW & FD Diffuse Optical Imaging
21. Ultrasound Hydrophones and Linear/Phased Array Transducers.