



Gameel Saleh, Ph.D.

Associate Professor



POSITION

Associate Professor of Electrical and Biomedical Engineering

Personal Data

College of Engineering, Biomedical Engineering Department

Imam Abdulrahman Bin Faisal (Dammam, Saudi Arabia) – Since 2015

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Language Proficiency

Language	Read	Write	Speak
Arabic	Excellent	Excellent	Excellent
English	Excellent	Excellent	Excellent

Academic Qualifications

Date	Academic Degree	Place of Issue	Address
2009-2013	Ph.D. with Distinction (Magna Cum Laude) In Electrical and Electronics (Medical Imaging - MRI)	University of Duisburg-Essen	NRW, Germany
2006-2008	Master of Science in Electronics Engineering	Jordan University of Science and Technology (JUST)	Irbid, Jordan
1996-2001	Bachelor of Science in Electronics Engineering (With Distinction)	Aden University	Aden, Yemen
1991-1995	Higher Diploma in Electrical Engineering (With Distinction)	Industrial Technical Institute	Aden, Yemen

PhD Thesis Title:

PhD	Metamaterials for Magnetic Resonance Imaging Applications
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Fellowships:

The German DAAD Fellowship (2009 - 2013)	To study the PhD in Germany
The German DAAD Fellowship (2006 - 2008)	To study the Master in Jordan



Professional Record:

Job Rank	Place and Address of Work			Date
Associate Prof.	Imam Abdulrahman Bin Faisal University	Biomedical Engineering Department	Dammam, Saudi Arabia	2022- present
Assistant Prof.	Imam Abdulrahman Bin Faisal University	Biomedical Engineering Department	Dammam, Saudi Arabia	2015- 2022
Assistant Prof.	Aden University	Electronics and Communications	Aden, Yemen	2014-2015
Lecturer & Teaching Assistant	Aden University	Electronics and Communications	Aden, Yemen	2008-2009 and 2003-2006
Network Switching System (NSS) Engineer	Spacotel (MTN)-Company	Aden Switch	Aden, Yemen	2001-2003

Awards

#	Award Title	Description
1	The first place Award in the Innovation Exhibition Path – 5th Health Innovation Hackathon at King Saud bin Abdulaziz University for Health Sciences (21-24 Jan. 2025)	A recognition under the patronage of the Saudi Minister of Education and KSAU-HS president on 24 Jan. 2024. Out of 170+ innovations representing the Universities and specialized colleges in Saudi Arabia, our project (Microwave Imaging System for Breast Cancer Detection) won the first-place Award .
2	The first place Award in the 1st Annual Innovation Ceremony of Imam Abdulrahman bin Faisal University (16-17 Jan. 2024)	A recognition from prince of the eastern province and IAU president, on 16 Jan. 2024. Out of 80+ innovations at IAU, my project (Microstripline Switches for MRI) won the first-place Award .
3	The Second place Award in the Innovation Exhibition Path – 4th Health Innovation Hackathon at King Saud bin Abdulaziz University for Health Sciences (20-22 Jan. 2024)	A recognition from the Saudi Minister of Education on 22 Jan. 2024. Out of 120+ innovations representing 52+ Universities and specialized colleges in Saudi Arabia, our project (Optical Bilirubin Sensor for Jaundice Detection) won the second-place Award .
4	The Outstanding Award in Research	A recognition from Dean college of engineering at IAU, as the third best researcher in the college for the academic year 2021/2022, received on May 10 th , 2022.
5	The Excellence Award in Teaching	A recognition from Dean college of engineering at IAU, as the best instructor in teaching, in the department, in the academic year 2021/2022. Received on May 10 th , 2022.
6	The best presented paper	The best conference presented paper in the IEEE IEMTRONICS conference April 20 th , 2021- Toronto, CANADA
7	MSc fellowship from the German Academic Exchange Service (DAAD)	MSc scholarship from the German Academic Exchange Service (DAAD) for the distinguished students (2006-2008).
8	PhD fellowship from the German Academic Exchange Service (DAAD)	PhD scholarship from the German Academic Exchange Service (DAAD) for the distinguished students (2009-2013).
9	Eight awards for the first rank students, during Bachelor	Recognition from Rector of Aden University and Dean college of engineering between 1997-2001



Administration Duties:

Administrative Position	Date
Member, university consultation committee for developing programs	2022- Present
Chairman, college curriculums unit	2022- Present
Chairman, college quality and accreditation committee	2020 -2022
Chairman, college graduation projects committee	2020 -2022
Chairman, department advisory board committee	2021- Present
Member, college of engineering professional exams committee	2020- Present
Member, department scientific research committee	2023 - Present

MASTER and Bachelor Courses Taught by the Faculty

#	Program	Courses
1	MASTER Courses	Magnetic Resonance Imaging in Medicine (MSc in biomedical engineering -college of engineering)
		Advance diagnostic imaging MRI (MSc in college of applied sciences - IAU)
		Medical Imaging Techniques (MSc program in college of science – IAU)
		Special Topics in Biomedical Engineering
		Digital Health (MSc in biomedical engineering -COE)
		Research Project (MSc in biomedical engineering -COE)
2	Bachelor courses	Signals and Systems in Biomedical Engineering
		Electromagnetics
		Magnetic Resonance Imaging
		Electronics
		Digital Signal Processing
		Antennas and Propagation
		Analog and Digital Electronics
		Computer Programming
		Digital Circuits
Electric Circuits		

Scientific Achievements

Books

#	Name of Investigator(s)	Book Title	Date of Publication
1	<u>Gameel Saleh</u>	Artificial Ground Planes for Magnetic Resonance Coils.	Lambert Academic Publishing, 11. August 2014.

Patents

#	Name of Investigator(s)	Patent Title	Date of Publication
1	Saleh, G.*	PATENT: Method for making a heterogeneous breast phantom	Published Patent App. US-2025-0017550-A1, 1/16/2025.
2	Saleh, G.*	PATENT: Broadband transmit/receive switches for Magnetic Resonance Imaging	Published Patent App. US-20240045007-A1, 8/2/2024.



3	Saleh G.*	PATENT: Heterogeneous Multimodal Breast Phantom	Granted Patent from USPTO. US-11998381-B2, June 04th, 2024.
4	Saleh, G.*	PATENT: Dual Resonant Wearable Antenna	Granted Patent from USPTO, US-11870135-B2, 09/01/2024.
5	Saleh, G.	PATENT: Magnetic Resonance Imaging Medical Device.	Granted US Patent from USPTO, US-11579223-B1, Feb. 14th, 2023.
6	Saleh, G.	PATENT: Transmit/Receive Switch based on Microstripline Coupler	Granted US Patent from USPTO, US-11493578-B1, Nov. 18th, 2022.
7	Saleh, G.	PATENT: Dual Tuned Magnetic Resonance Medical Imaging Device	Granted US Patent from USPTO, US-11789100-B2, Oct. 17 th , 2023.
8	Saleh, G.*	PATENT: Monitoring system for the current flow to dual resonant 1H/31P MRI coils	US Patent App. (2024) – Filed
9	Saleh, G.*	PATENT: Built-in Coil Current Sensing for 1H/23Na MRI	USPTO Patent App. 2024 - Filed
10	Saleh, G.*	PATENT: 1H broadband switch for 3T and 7T MRI	USPTO Patent App. 18/423,792, January 26, 2024
11	Saleh, G.*	PATENT: Broadband switch for 3T and 7T magnetic resonance imaging.	USPTO Patent App. March 26 th , 2024 – Filed. Application no. 18/616,521
12	Saleh, G.*	PATENT: Multisegment Breast Tissue Mimic	Granted Patent from USPTO, US-12097068-B1, Sept. 24 th , 2024.
13	Saleh, G.*	PATENT: Heterogeneous breast phantom with carcinoma model	Granted Patent from USPTO, US 12138106-B1, Nov. 12, 2024
14	Saleh, G.*	PATENT: Method for Transmitting Radiant Frequency Signals to An MRI RF Coil	USPTO Patent App., US-20240310463-A1, Sept. 19 th , 2024.
15	Saleh, G.*	PATENT: Multi-resonance broadband transmit/receive switches without tuning used in for magnetic resonance imaging	USPTO Filed patent - # 541460US – 2025
16	Saleh, G.*	PATENT: Magnetic resonance imaging with serpentine transmission lines.	USPTO Continuation Filed patent – # 557361US -2025

*First or solo inventor



Journal Articles:

https://scholar.google.com/citations?hl=en&user=fQB28dUAAA&view_op=list_works&ortby=pubdate

1	Saleh, G.	Dual-Resonant RF Coil for Proton and Phosphorus Imaging at 7 Tesla MRI.	(2025) International Journal of Imaging Systems and Technology, https://doi.org/10.1002/ima.70081
2	Saleh, G.	AI-driven health analysis for emerging respiratory diseases: A case study of Yemen patients using COVID-19 data.	(2025) Mathematical biosciences and engineering: MBE, 22(3), 554-584. DOI: 10.3934/mbe.2025021
3	Saleh, G.	Aerobic Athletes Tracking System Using Smart Glove for Physiological and Kinematic Monitoring	(2024) International Conference on Engineering and Emerging Technologies (ICEET), IEEE, DOI: 10.1109/ICEET65156.2024.10913622, 27-28 December 2024.
4	Saleh, G.	A Felt Fabric Wearable Antenna with Bending and Different Loading Effects for Wireless Body Area Network Applications	(2024) International Conference on Innovative Engineering Sciences and Technological Research (ICIESTR), IEEE, DOI: 10.1109/ICIESTR60916.2024.10798297, 1-6, 14 May 2024.
5	Saleh, G.	Built-In Coil Current Sensing for 7-Tesla ¹ H/ ²³ Na and ¹ H/ ³¹ P Magnetic Resonance Imaging	(2024) Journal of Electromagnetic Engineering and Science 24 (2), 1
6	Saleh, G.	Broadband Transmit/Receive Switch for 3T and 7T Magnetic Resonance Imaging	(2024) Journal of Electromagnetic Engineering and Science 2024;24(3):243-253.
7	Saleh, G.	Parametric Analysis on Single-Band Planar Inverted F and Dual-Band Planar Inverted F-L Implant Antennas for Biomedical Services	(2024) International Journal on Communications Antenna and Propagation (IRECAP)
8	Saleh, G.	Microstripline Switch for 3T and 7T Proton Coils	(2023) International Journal on Communications Antenna and Propagation (IRECAP) Vol (13), issue (5)
9	Saleh, G.*	Heterogeneous breast phantom for computed tomography and magnetic resonance	(2023) PLoS ONE 18(4): e0284531. https://doi.org/10.1371/journal.pone.0284531



10	Saleh, G.	Two-section branch-line hybrid couplers-based broadband transmit/receive switch	(2023) International Journal of Electrical and Computer Engineering (IJECE) Vol. 13, No. 3, June 2023, pp. 2600~2607 ISSN: 2088-8708, DOI: 10.11591/ijece.v13i3.pp2600-2607
11	Saleh, G.	Assessment of reference dose levels for nuclear medicine center in Jordan	(2023) Journal of Pharmaceutical and Allied Sciences, V 12 - I 1, Pages - 5500 – 5503, DOI: 10.55522/jumps. V12I1.3446
12	Saleh, G.	Influence of erbium on structural, and charged particles, photons, and neutrons shielding properties of Ba _{1-x} Er _x SnO ₃ perovskite ceramics	(2023) Journal of R.E, https://doi.org/10.1016/j.jre.2023.05.008
13	Saleh, G.	Broadbands Four-Branch Hybrid Coupler-Based T/R Switch for 7-Tesla Magnetic Resonance Imaging	(2022) <i>International Journal on Communications Antenna and Propagation (IRECAP)</i> , 12 (5), pp. 380-384. doi: https://doi.org/10.15866/irecap.v12i5.22449
14	Saleh, G.	Dual tuned 1H/31P quadrature microstripline-based transmit/ receive switch for 7 Tesla magnetic resonance imaging	(2022) International Journal of Electrical & Computer Engineering (2088-8708)/ June 2022
15	Saleh, G.	Multi- and dual-tuned microstripline-based transmit/ receive switch for 7-Tesla magnetic resonance imaging	(2022) International Journal of Imaging Systems and Technology/ March
16	Saleh, G.	T- and Cascaded Pi-Shaped 1H T/R Switches with Realistic Trace Width for 7 Tesla MRI	(2022) International Journal on Communications Antenna and Propagation (IRECAP)
17	Saleh, G.*	Glucose Level Sensing using Single Metamaterial Resonator	(2021) Sensors/ April 2021, https://doi.org/10.3390/s21092945
18	Saleh, G.	Radiation shielding features for various tellurium-based alloys: a comparative study	(2021) Journal of Materials Science: Materials in Electronics 32 (22), 26798-26811 / 2021
19	Saleh, G.*	Dual Resonant Wearable Metamaterial for Medical Applications	(2021) International Journal on Communications Antenna and Propagation (IRECAP) Vol. 11, No. 2, PP. 8/ April 2021



20	Saleh, G.	Symmetrical and Unsymmetrical Microstripline-based Transmit/Receive Switches for 7 Tesla Magnetic Resonance	(2021) International Journal of Circuit Theory and Applications/ April 2021
21	Saleh, G.	Heterogenous Mouse Phantom with Water Tumor Model for Ionizing Imaging Machines	(2021) 4th IEEE International Symposium on Advanced Electrical and Communication Technologies (ISAECT)
22	Saleh, G.	A Pi-Shaped Compact Dual Tuned 1H/23Na Microstripline-Based Switch for 7-Tesla MRI	(2021) International Journal on Communications Antenna and Propagation (IRECAP)/ Feb 2021
23	Saleh, G.	Dual Tuned Switch for Dual Resonance 1H/13C MRI Coil	(2021) IEEE – International IOT, Electronics and Mechatronics Conference (IEMTRONICS 2021) / 2021
24	Saleh, G.	Heterogenous Breast Phantom with Carcinoma for Ionizing Machines	(2021) IEEE – International IOT, Electronics and Mechatronics Conference (IEMTRONICS 2021)
25	Saleh, G.	Via-less electromagnetic band-gap-enabled antenna based on textile material for wearable applications	(2021) PLOS ONE, 28th January 202, https://doi.org/10.1371/journal.pone.0246057
26	Saleh, G.	A comprehensive ionizing radiation shielding study of FexSe0. 5Te0. 5 alloys with various iron concentrations	(2020) Journal of Alloys and Compounds. Available online since 24 October 2020
27	Saleh, G.	Radiation shielding properties of Nd0. 6Sr0. 4Mn1– yNiyO3 substitute with different concentrations of nickle	(2020) Radiation Physics and Chemistry Volume 174, September 2020, 108920
28	Saleh, G.	Automated Stance Controlled-Knee-Ankle-Foot Orthosis	(2019) The IEEE 8 th international conference on modelling, simulation, and automation (ICMSAO19) conference in Bahrain; 15-17 April 2019
29	Saleh, G.	Metamaterial inspired fabric antenna for wearable applications	(2019) International Journal of RF and Microwave Computer-Aided Engineering, USA, Wily Blackwell, ISI- indexed, March 2019, Pe21640
30	Saleh, G.*	Tuning of High Impedance Surfaces using Coaxial Cables for Magnetic Resonance Imaging Machines	(2018) International Journal of RF and Microwave Computer-Aided Engineering, USA, Wily Blackwell,



			ISI- indexed, Issue 7; Vol. 28; P e21477; published 10.09.2018
31	Saleh, G.*	Design of non-invasive glucose meter using near-infrared technique	(2018) Journal of Medical Engineering and Technology, Taylor and Francis, UK, first published: 07 March 2018
32	Saleh, G.*	Effects of tissues and geometric shapes of phantoms on the specific energy absorption rate (MRI application)	(2018) International Journal of RF and Microwave Computer-Aided Engineering, USA, Wiley Blackwell, ISI- indexed, 25 January 2018
33	Saleh, G.	Design of Flexible Textile Wearable Antennas for Telemedicine Applications	(2018) International conference on Radiation Medicine (ICRM 2018), Riyadh, Saudi Arabia, 11-15. Feb. 2018.
34	Saleh, G.*	The Enhanced Meander Dipole Radiofrequency Coil for 7 Tesla Magnetic Resonance Imaging Machines	(2018) International conference on Radiation Medicine (ICRM 2018), Riyadh, Saudi Arabia, 11-15. Feb. 2018.
35	Saleh, G.	Wireless Blood Pressure Self-Monitoring System	(2018) International conference on Radiation Medicine (ICRM 2018), Riyadh, Saudi Arabia, 11-15. Feb. 2018.
36	Saleh, G.	Flexible Wearable Antenna on Electromagnetic Band Gap using PDMS substrate	(2017) TELKOMNIKA journal paper (Telecommunication, Computing, Electronics and Control) – Sep. 2017
37	Saleh, G.*	“Artificial Ground Plane for Magnetic Resonance Coils to Reduce the Energy Specific Absorption Rate”	(2014) QF-ARC'14, Doha, Qatar, Volume: 1, 2014
38	Saleh, G.*	SOFT Surfaces to Improve The H/E Field Ratio of Stripline Coil for 7Tesla MRI	(2013) ISMRM2013, Salt Lake City, Utah, USA, 20-26 April 2013.
39	Saleh, G.*	Four-Leaf-Clover-Shaped EBG Structure to Improve The H/E Field Ratio of Stripline Coil for 7Tesla MRI	(2013) EuCAP2013, Gothenburg, Sweden, 8-12 April 2013.
40	Saleh, G.*	SAR Reduction for Dipole RF Coil Element At 7 Tesla by using Dielectric Overlay	(2012) LAPC2012, Loughborough, England-UK, Nov. 2012.
41	Saleh, G.*	EBG Structure to Improve the B1 Efficiency of Stripline Coil for 7 Tesla MRI	(2012) EuCAP2012, Prag, Czech Republic, March. 2012.
42	Saleh, G.*	EBG Structure for Low Frequency Applications	(2012) GeMiC 2012, Illmenau, Germany, Feb. 2012



43	Saleh, G.	“Joint Beamforming and Power Control for Interference Reduction in Wireless Communications Using Particle Swarm Optimization,”	(2010) <i>Int. Journal of Electronics and Communications AEU</i> , Germany. 2010.
44	Saleh, G.*	M, “Radio Resource Management – Interference Reduction Using PSO”.	(2008) 2 nd Engineering conf. in Aden University, 2008.

*First or solo author

Funded Projects

#	Project Title	Sponsor
1	Design a compact system of Optical and mmWave Sensors for the Dengue Virus Detection (2.520 million SAR), PI	Supported by the Saudi National Institute of Health (SNIH) 2025.
2	An integrated approach with in vivo molecular imaging and machine learning to characterize tissue microenvironment for accurate diagnosis and prognosis of infection, inflammation, and cancer (7.5 million SAR), CO-I	Deputyship for Research & Innovation, Ministry of Education in Saudi Arabia through the project number IF-2020-013-Eng at IAU University (2020-2022)
3	Development of novel non-invasive systems for the characterization of blood glucose levels (1.5 million SAR), CO-I	Supported by Saudi Ministry of Education; Research and Development Office RDO: (2019-2022)
4	Radio Frequency Safety against Electromagnetic Field Exposure in Magnetic Resonance Imaging (47,000 SAR), PI	Supported by Deanship of Scientific Research, IAU University, under the grant (2017-268-Eng)
5	Design and implementation of economical Automated Peritoneal Dialysis Machine (240,000 SAR), CO-I	Deputyship for Research & Innovation, Institutional Fund, Ministry of Education in Saudi Arabia (2021-2023)
6	Electromagnetic Band Gap Structures for MRI Applications (2.5 million euro)	Supported by DFG-Germany (2011-2014)

Workshops/Invited Speaker

#	Activity/Course Title and Code	Subject	College and University or Program	Date
1	Seminar Speaker	New Imaging Techniques for Breast Cancer Detection	Imam Abdulrahman Bin Faisal University	2025
2	Workshop Speaker	MRI in Diagnostics: Chances and Challenges	Organized by Biomedical Engineering Technology Society in Riyadh	2024
3	Workshop Speaker	The Role of Biomedical Engineers in Innovation and Research	Princes Noura bent Abdulrahman University	2024
4	Seminar Speaker	Power Allocations using PSO	Aachen University - Germany	2008
5	Seminar Speaker	Power Control and Transmit Beamforming using PSO	Ilmenau University of Technology	2009



Research Supervision

#	Title	Institution	Date
1	Cholesterol Levels Measurements using Optical Sensors	IAU University	2024-2025
2	Design of Microwave Imaging System for Breast Cancer Detection	IAU University	2023-2024
3	Design a Non-invasive Microwave Glucose Sensor for Glucose detection using CSRR Resonators	IAU University	2022-2023
4	Design of Non-invasive Optical Sensor for early Detection of Hyperbilirubinemia	IAU University	2022-2023
5	Design and Development of Mouse Phantom for CT and MRI	IAU University	2021-2022
6	Design and Development of Multimodal Breast Phantom	IAU University	2020-2021
7	RFID for Transferring and Monitoring Vital Signs	IAU University	2019 - 2020
8	Automated Stance Controlled Knee-Ankle-and Foot Orthosis (ASCKAFO)	IAU University	2018 - 2019
9	Wearable Antenna for Biomedical Applications	IAU University	2017 - 2018
10	Non-invasive Blood Glucose Level Monitoring	IAU University	2016-2017
11	RF Antennas for Ultrahigh Field MRI	IAU University	2015-2016

Personal Key Competencies and Skills: (Computer, Information technology, technical, etc.)

1	Microwave Studio MW-CST
2	HFSS
3	EMPIRE XCcel
4	Matlab, C++, and LabVIEW
5	Microsoft Office

Last Update

Name: Dr. Gameel Saleh

Date: April 2025