

Muhammad Umar Khan

Associate Professor
School of Electrical Engineering and Computer Science

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About

Dr. Muhammad Umar Khan is working as Associate Professor in the School of Electrical Engineering and Computer Science. Dr. Muhammad Umar Khan has a PhD in Electrical Engineering (Applied Electromagnetics). Dr. Muhammad Umar Khan has published 57 research articles & conference papers having a citation count of 1434, carried out 8 projects and filed 2 intellectual property.

Qualifications

PhD in Electrical Engineering (Applied Electromagnetics) King Fahad University of Petroleum and Minerals , Saudi Arabia	2011 - 2015
MS in Electronic Engineering Ghulam Ishaq Khan Institute of Science & Technology , Pakistan	2006 - 2008
BE in Electrical Engineering NUST, Islamabad , Pakistan	2003 - 2006
F.Sc in Pre-Engineering FBISE, Islamabad , Pakistan	2000 - 2002
Matric (SSC) in Science FBISE, Islamabad , Pakistan	1998 - 2000

Experience

Associate Professor School of Electrical Engineering and Computer Science	2024- Present
Associate Professor School of Electrical Engineering and Computer Science	2022 - 2022
Associate Professor School of Electrical Engineering and Computer Science	2021 - 2022
Assistant Professor Research Institute For Microwave And Millimeter-Wave Studies	2018 - 2015
Assistant Professor Research Institute For Microwave And Millimeter-Wave Studies	2015 - 2021
Assistant Professor Research Institute For Microwave And Millimeter-Wave Studies	2015 - 2018
Lecturer GIK Institute of Engineering Sciences & Technology , GIK Institute, Topi, Pakistan	2008 - 2011

Professional Memberships

PEC	Since 2009
IEEE	Since 2012

Research Projects

National Projects

Development of GNSS System for Repeat, Record/Replay and Simulation	2024
Funding Agency: Project Management Organization (PMO)	
Amount: PKR 7,484,400.00	
Status: Approved_inprocess	
Development of RL 1-2 GHz Antenna for Vera-E System	2023
Funding Agency: MoDP	
Amount: PKR 1,947,000.00	
Status: Approved_inprocess	
Development of AL2W 1090 MHz Antenna with Adopter for Vera-E System	2023
Funding Agency: MoDP	
Amount: PKR 1,970,000.00	
Status: Approved_inprocess	
Indigenous Development of Log-Periodic Dipole Antenna	2022
Funding Agency: PAF	
Amount: PKR 982,000.00	
Status: Approved_inprocess	
Portar: Development of a Portable Radar for Tactical, Defense & Security Applications	2022
Funding Agency: HEC	
Amount: PKR 18,750,000.00	
Status: Approved_inprocess	
RF Analysis and Development of Wideband Omni-directional Bi-Conical Antenna	2021
Funding Agency: PAF	
Amount: PKR 1,500,000.00	
Status: Completed	
Indigenous Development of Qty 02 Antennas for Vera-E System of PAF	2020
Funding Agency: Pakistan Air Force	
Amount: PKR 1,960,000.00	
Status: Completed	
Design of Radome Enclosed 5G MIMO Antennas with FSS Based Decorrelation System and its Characterization	2019
Funding Agency: HEC	
Amount: PKR 1,603,479.00	
Status: Completed	

International Projects

Research Articles

Singly-Fed Large Frequency Ratio Composite Dielectric Resonator Antenna for sub-6 GHz and mm-Wave 5G Applications	2024
Asadullah Muhammad Umar Khan Awab Muhammad Mohammad S. Sharawi Moath Al Athbah	
IEEE Access , Volume 12, Pages 67837-67846	
Impact Factor: 3.900 Quartile: 2 Citations: 9	
DOI: 10.1109/ACCESS.2024.3399814	
An Integrated DRA-Based Large Frequency Ratio Antenna System Consisting of a MM-Wave Array and a MIMO Antenna for 5G Applications	2024
Awab Muhammad Muhammad Umar Khan Reza Shamsaei Malfajani Mohammad S. Sharawi Moath Al Athbah	
IEEE Open Journal of Antennas and Propagation, Volume 5, Issue 2, Pages 368-378	
Impact Factor: 3.500 Quartile: 2 Citations: 17	
DOI: 10.1109/OJAP.2024.3349455	
A Graded Index All-Dielectric Lens for Field Decorrelation and Decoupling of a Wideband MIMO Antenna	2023
Usman Qureshi Muhammad Umar Khan Mohammad S. Sharawi Shah Nawaz Burokur Raj Mittra	
IEEE Open Journal of Antennas and Propagation, Volume 4, Pages 180-195	

Impact Factor: 0 Citations: 1 DOI: 10.1109/OJAP.2023.3241349	
A highly compact Fabry Perot cavity-based MIMO antenna with decorrelated fields <i>Muhammad Umair Illahi Muhammad Umar Khan Rifaqat Hussain Farooq Ahmad Tahir</i> <i>Scientific Reports</i> , Volume 12, Issue 1, Article Number: 14021 Impact Factor: 4.996 Quartile: 2 Citations: 4 DOI: https://doi.org/10.1038/s41598-022-18050-w	2022
Field Decorrelation and Isolation Improvement in an MIMO Antenna Using an All-Dielectric Device Based on Transformation Electromagnetics <i>Usman Qureshi Muhammad Umar Khan Mohammad S. Sharawi Shah Nawaz Burokur Raj Mittra</i> <i>Sensors</i> , Volume 21(22), Article Number 7577 Impact Factor: 3.576 Quartile: 1 Citations: 5 DOI: 10.3390/s21227577	2021
Frequency agile multiple-input-multiple-output antenna design for 5G dynamic spectrum sharing in cognitive radio networks <i>Rifaqat Hussain Muhammad Umer Khan Naveed Iqbal Eqab AlMajali Saqer S. Alja'afreh Umar Johar Atif Shamim Mohammad S. Sharawi</i> <i>Microwave and Optical Technology Letters</i> , Pages 1-6 Impact Factor: 1.392 Quartile: 4 Citations: 10 DOI: https://doi.org/10.1002/mop.32668	2020
Stacked frequency reconfigurable Yagi-like MIMO antenna system <i>Rifaqat Hussain Syed Shahan Jehangir Muhammad Umer Khan Mohammad S. Sharawi</i> <i>IET Microwaves, Antennas & Propagation</i> , Volume 14, Issue 6, Pages 532-538 Impact Factor: 2.016 Quartile: 3 Citations: 7 DOI: 10.1049/iet-map.2019.0822	2020
Quad-Band 3D Rectenna Array for Ambient RF Energy Harvesting <i>Fatima Khalid Warda Saeed Noshawan Shoaib Muhammad Umer Khan Hammad Mehmood Cheema</i> <i>International Journal of Antennas and Propagation</i> , Volume 2020 Article ID 7169846 23 pages Impact Factor: 1.174 Quartile: 4 Citations: 24 DOI: https://doi.org/10.1155/2020/7169846	2020
A Dual-Band Zero-Index Metamaterial Superstrate for Concurrent Antenna Gain Enhancement at 2.4 and 3.5 GHz <i>Muhammad Umer Khan Hammad Mehmood Cheema Zain Haider</i> <i>IETE Journal of Research</i> , Pages 1-11 Impact Factor: 2.333 Quartile: 3 Citations: 6 DOI: 10.1080/03772063.2020.1732842	2020
Design and Analysis of a Miniaturized Meandered Slot-Line-Based Quad-Band Frequency Agile MIMO Antenna <i>Rifaqat Hussain Muhammad Umer Khan Mohammad S. Sharawi</i> <i>IEEE Transactions on Antennas and Propagation</i> , Volume 68, No. 3, Pages 2410-2415 Impact Factor: 4.388 Quartile: 1 Citations: 36 DOI: 10.1109/TAP.2019.2943685	2020
Split-ring-resonator-loaded multiband frequency agile slot-based MIMO antenna system <i>Rifaqat Hussain Muhammad Umer Khan Eqab Almajali Mohammad S. Sharawi</i> <i>IET Microwaves, Antennas & Propagation</i> , Vol 13, Issue 14, Pages 2449–2456 Impact Factor: 1.972 Quartile: 3 Citations: 13 DOI: 10.1049/iet-map.2019.0333	2019
Miniaturized frequency reconfigurable pentagonal MIMO slot antenna for interweave CR applications <i>Rifaqat Hussain Ali Raza Atif Shamim Mohammad S. Sharawi Muhammad Umer Khan</i> <i>International Journal of RF and Microwave Computer Aided Engineering</i> , Volume: 29 , Issue: 9, article Number e21811, Pages 1-12 Impact Factor: 1.528 Quartile: 3 Citations: 30 DOI: 10.1002/mmce.21811	2019
Small-Sized UWB MIMO Antenna With Band Rejection Capability <i>Hassan Tariq Chattha Farooq Ahmad Tahir Farah Latif Muhammad Umer Khan Xiaodong Yang</i> <i>IEEE Access</i> , Volume 7, Pages 121816 - 121824 Impact Factor: 3.745 Quartile: 1 Citations: 37	2019

DOI: 10.1109/ACCESS.2019.2937322

A Compact, Low-Profile Fractal Antenna for Wearable On-Body WBAN Applications 2019

Ali Arif Muhammad Zubair Mubasher Ali Muhammad Qasim Mehmood Muhammad Umer Khan

IEEE Antennas and Wireless Propagation Letters, Volume: 18, Issue: 5, Pages 981-985

Impact Factor: 3.726 | **Quartile:** 1 | **Citations:** 264

DOI: 10.1109/LAWP.2019.2906829

A 2-element Meandered-line Slot-based Frequency Reconfigurable MIMO Antenna System 2018

Ali Raza Muhammad Umer Khan Farooq Ahmad Tahir Rifaqat Hussain Mohammad S. Sharawi

Microwave and Optical Technology Letters, Volume 60, Issue 11, Pages 2794-2801

Impact Factor: 0.933 | **Quartile:** 4 | **Citations:** 15

DOI: <https://onlinelibrary.wiley.com/doi/full/10.1002/mop.31459>

Broad Band Impedance Matching Transformer Design Consideration for High Power Electro-acoustic Transducer 2018

Muhammad Yasin Shahid Ali Sajjad Hussain Usmani Muhammad Umer Khan

Journal of Electrical Systems, Volume: 14, Issue: 3, Pages: 26-35

Impact Factor: -

DOI: http://apps.webofknowledge.com/full_record.do?product=WOS&search_mode=GeneralSearch&qid=2&SID=E2GyZcXdvmVqjqFs3jT&page=4&doc=37

A 5GHz Narrow-Beam Leaky-Wave Antenna Using Binomially Distributed Slot based Substrate Integrated Waveguide 2018

Hammad Mehmood Cheema Muhammad Umer Khan Memoona Farooq

Microwave and Optical Technology Letters, Volume 60, Issue 9, Pages 2288-2293

Impact Factor: 0.933 | **Quartile:** 4 | **Citations:** 8

DOI: <https://onlinelibrary.wiley.com/doi/abs/10.1002/mop.31342>

An FSS Based Correlation Reduction Technique for MIMO Antennas 2018

Tayyab Hassan Hussain Attia Mohammad S. Sharawi Muhammad Umer Khan

IEEE Transactions on Antennas and Propagation, Volume: 66, Issue:9, Pages 4900-4905, Published: Sep 2018

Impact Factor: 4.435 | **Quartile:** 1 | **Citations:** 72

DOI: 10.1109/TAP.2018.2842256

An Integrated Dual MIMO Antenna System With Dual-Function GND-Plane Frequency-Agile Antenna 2018

Rifaqat Hussain M. S. Sharawi Muhammad Umer Khan

IEEE Antennas and Wireless Propagation Letters, Volume:17, Issue:1, Pages 142 - 145

Impact Factor: 3.510 | **Quartile:** 2 | **Citations:** 69

DOI: 10.1109/LAWP.2017.2778182

Correlation coefficient calculations for MIMO antenna systems: a comparative study 2017

Mohammad s. sharawi Abdelmoniem t. hassan Muhammad Umer Khan

International Journal for Wireless and Microwave Technology, Volume 9, Issue 10, Pages 1991-2004

Impact Factor: 0.745 | **Quartile:** 4 | **Citations:** 118

DOI: 10.1017/S1759078717000903

A Frequency Reconfigurable MIMO Antenna System for Cognitive Radio Applications 2017

Ali Raza Farooq Ahmad Tahir Muhammad Umer Khan

Frequenz, Volume 71, Issue 11-12, Pages 567–573

Impact Factor: 0.280 | **Quartile:** 4 | **Citations:** 10

DOI: 10.1515/freq-2016-0185

Dual-frequency DRA-based MIMO antenna system for wireless access points 2017

Symon K. Podilchak Yahia M. Antar Mohammad S. Sharawi Muhammad Umer Khan

IET Microwaves, Antennas & Propagation, Volume: 11, Issue: 8, Pages 1174-1182

Impact Factor: 1.739 | **Quartile:** 3 | **Citations:** 89

DOI: 10.1049/iet-map.2016.0671

An Ultra-wide Band Diversity Antenna with Band-rejection Capability for Imaging Applications 2017

Farah Latif Farooq Ahmad Tahir Mohammad S. Sharawi Muhammad Umer Khan

Microwave and Optical Technology Letters, Volume: 59, Issue: 7, Pages 1661-1668

Impact Factor: 0.948 | **Quartile:** 4 | **Citations:** 11

DOI: <https://doi.org/10.1002/mop.30603>

Characterization of Reconfigurable MIMO Antennas for Channel Capacity in an Indoor Environment 2016

Wajih Abu-Al-Saud Ali H. Muqaibel Mohammad S. Sharawi Rifaqat Hussain Muhammad Umer Khan

Impact Factor: 0 | Citations: 6

DOI: 10.2528/PIERC16042703

Microstrip Patch Antenna Miniaturization Techniques : A Review 2015

Mohammad Said Sharaw Raj Mittr Muhammad Umer Khan

IET Microwaves, Antennas & Propagation , Vol.9(9), Article Number 913, Pages 1-10

Impact Factor: 0.817 | Quartile: 3 | Citations: 163

DOI: 10.1049/iet-map.2014.0602

A Dual Band Microstrip Annular Slot Based MIMO Antenna System 2015

Mohammad S. Sharawi Muhammad Umer Khan

Microwave and Optical Technology Letters, Volume 57, Issue 2, Pages 360-364

Impact Factor: 0.545 | Quartile: 4 | Citations: 31

DOI: https://doi.org/10.1002/mop.28855

A 2 x 1 Multi-band MIMO Antenna System Consisting of Miniaturized Patch Elements 2014

Mohammad. S. Sharawi Muhammad Umer Khan

Microwave and Optical Technology Letters, Volume 56, Issue 6, Pages 1371-1375

Impact Factor: 0.568 | Quartile: 4 | Citations: 20

DOI: https://doi.org/10.1002/mop.28360

A CSRR loaded MIMO Antenna System for ISM Band Operation 2013

Mohammad S. Sharawi Ahmad B. Numan Daniel N. Aloï Muhammad Umer Khan

IEEE Transactions on Antennas and Propagation, Volume 61, Issue 8, Pages 4265-4274

Impact Factor: 2.459 | Quartile: 1 | Citations: 160

DOI: 10.1109/TAP.2013.2263214

A Dual Element Dual Band MIMO Antenna System with Enhanced Isolation for Mobile Terminals 2012

Mohammad S. Sharawi Ahmed B. Numan Daniel N. Aloï Muhammad Umer Khan

IEEE Antennas and Wireless Propagation Letters, Volume 11, Pages 1006-1009

Impact Factor: 1.667 | Quartile: 1 | Citations: 149

DOI: 10.1109/LAWP.2012.2214433

Conference Proceedings

Filtering Rectangular Dielectric Antennas for Large Frequency Ratio Applications 2025

Asadullah Muhammad Umar Khan

2025 2nd International Conference on Microwave, Antennas and Circuits, ICMAC 2025, res.country(177,)

Citations: N/A

DOI: 10.1109/ICMAC64768.2025.11003227

Pattern-Reconfigurable Antenna with Fluidically Control Metasurface 2024

Taimoor Shah Muhammad Umar Khan Wasif Tanveer Khan Rifaqat Hussain Akram Alomainy

2024 IEEE International Symposium on Antennas and Propagation and INC/USNC-URSI Radio Science Meeting (AP-S/INC-USNC-URSI), res.country(109,)

Citations: N/A

DOI: Nil

Liquid-Based Reconfigurable 4x4 Butler Matrix for Enhanced Spatial Coverage 2024

Sohail Iqbal Muhammad Umar Khan Wasif Tanveer Khan Rifaqat Hussain James Kelly Akram Alomainy

2024 IEEE International Symposium on Antennas and Propagation and INC/USNC-URSI Radio Science Meeting (AP-S/INC-USNC-URSI), res.country(109,)

Citations: N/A

DOI: 10.1109/AP-S/INC-USNC-URSI52054.2024.10686759

A Liquid-Based Reconfigurable Fabry-Perot Cavity Antenna for Beam Steering 2023

Mubahsir Ashfaq Muhammad Umar Khan Tayyaba Farooqi Ravi Kumar Arya Junwei Dong Raj Mittra

2023 IEEE 11th Asia-Pacific Conference on Antennas and Propagation, APCAP 2023 - Proceedings, res.country(48,)

Citations: N/A

DOI: 10.1109/APCAP59480.2023.10470097

Antipodal Vivaldi Array Systems for Azimuth and Elevation Beamsteering Application 2023

Shehroze Amir Muhammad Umar Khan Awab Muhammad

2023 International Conference on Radar, Antenna, Microwave, Electronics, and Telecommunications: Empowering Global Progress: Innovative Electronic

<i>and Telecommunication Solutions for a Sustainable Future, ICRAMET 2023</i> , res.country(100,)	
Citations: N/A	
DOI: 10.1109/ICRAMET60171.2023.10366768	
Dielectric Resonators-Based Large Frequency Ratio Antenna	2023
<i>Awab Muhammad Muhammad Umar Khan Reza Shamsaei Malfajani Mohammad S. Sharawi</i>	
<i>IEEE Antennas and Propagation Society, AP-S International Symposium (Digest)</i> , res.country(233,)	
Citations: N/A	
DOI: 10.1109/USNC-URSI52151.2023.10237803	
Dual-Band Stacked Dielectric Resonator Antenna for mid- and high-band 5G Applications	2021
<i>Asadullah Muhammad Umar Khan Mohammad Said Sharawi</i>	
<i>2021 1st International Conference on Microwave, Antennas and Circuits, ICMAC 2021</i> , res.country(177,)	
Citations: 4	
DOI: 10.1109/ICMAC54080.2021.9678292	
Beam Steering Antenna System Based on Active Partially Reflective Surface	2021
<i>Aimen Raza Noshawan Shoaib M. Umer Khan</i>	
<i>2021 1st International Conference on Microwave, Antennas & Circuits (ICMAC)</i> , res.country(177,)	
Citations: N/A	
DOI: 10.1109/ICMAC54080.2021.9678239	
Circularly Polarized Dielectric Resonator Antenna for mm- Wave Applications	2021
<i>Asadullah Muhammad Umar Khan Mohammad Said Sharawi Atif Shamim</i>	
<i>2021 International Applied Computational Electromagnetics Society Symposium (ACES)</i> , res.country(38,)	
Citations: N/A	
DOI: Nil	
A Miniaturized Cavity backed Archimedean Spiral Antenna for mm-Wave Applications	2021
<i>M. Saad Khan Farooq Ahmad Tahir Muhammad Umer Khan Hammad M. Cheema Atif Shamim</i>	
<i>2021 International Applied Computational Electromagnetics Society Symposium (ACES)</i> , res.country(38,)	
Citations: N/A	
DOI: 10.1109/ACES53325.2021.00183	
A Compact Sub-1 GHz IoT Antenna Design with Wide Tuning Capabilities	2021
<i>Rifaqat Hussain Mohamed Abou-Kousa Muhammad Umar Khan Mohammad S. Sharawi</i>	
<i>2021 15th European Conference on Antennas and Propagation (EuCAP)</i> , res.country(57,)	
Citations: N/A	
DOI: 10.23919/EuCAP51087.2021.9411308	
A New Sampling Approach for Beam Shaping Through Superposition of Taylor Distributed Composing Functions	2020
<i>Awab Muhammad Muhammad Umar Khan Rifaqat Hussain Farooq Ahmad Tahir</i>	
<i>International Conference on UK-China Emerging Technologies (UCET)</i> , res.country(231,)	
Citations: N/A	
DOI: https://www.gla.ac.uk/events/conferences/ucet/conferenceprogram/	
An Ultra-Wideband Metasurface for Half-Mirror and QWP Operations	2020
<i>Syed Muhammad Qasim Ali Shah Fahad Ahmed Noshawan Shoaib Muhammad U. Khan</i>	
<i>2020 IEEE International Symposium on Antennas and Propagation and North American Radio Science Meeting</i> , res.country(38,)	
Citations: N/A	
DOI: 10.1109/IEEECONF35879.2020.9329873	
A Multiband and Multifunctional Metasurface for Polarization Conversion Applications	2020
<i>Sana Ilyas Aimen Raza Fahad Ahmed Syed M. Qasim Ali Shah Noshawan Shoaib Muhammad Umar Khan Muhammad U. Khan</i>	
<i>2020 IEEE International Symposium on Antennas and Propagation and North American Radio Science Meeting</i> , res.country(38,)	
Citations: N/A	
DOI: 10.1109/IEEECONF35879.2020.9329677	
A Wide-band Slot-based Frequency Agile Yagi-Like MIMO Antenna System	2020
<i>Rifaqat Hussain Syed S. Jahngir Muhammad Umar Khan Mohammad S. Sharawi</i>	
<i>14th European Conference on Antennas and Propagation</i> , res.country(59,)	
Citations: N/A	
DOI: 10.23919/EuCAP48036.2020.9135620	

Field Decorrelation in a MIMO Antenna using Transformation Electromagnetics <i>Usman Qureshi Muhammad Umar Khan Tayyab Hassan Mohammad S. Sharawi Shah Nawaz Burokur Raj Mittra</i> <i>International Workshop on Antenna Technology (iWAT), res.country(188,)</i> Citations: N/A DOI: 10.1109/iWAT48004.2020.1570599232	2020
Reduction of Correlation Coefficient in Wideband MIMO Antennas using Partially Reflective Surface <i>Tayyaba Farooqi Muhammad Umar Khan Tayyab Hassan Rifaqat Hussain Mohammad S. Sharawi Raj Mittra</i> <i>International Symposium on Antennas and Propagation (ISAP), res.country(48,)</i> Citations: N/A DOI: https://ieeexplore.ieee.org/document/8963213	2019
Slot Based Frequency Reconfigurable and UWB Sensing MIMO Antennas for CR Applications <i>Rifaqat Hussain Muhammad Umar Khan Amna Kamran Mohammad S. Sharawi</i> <i>IEEE Antennas and Propagation Symposium 2019, res.country(233,)</i> Citations: N/A DOI: 10.1109/APUSNCURSINRSM.2019.8889247	2019
Meandered H-Shaped Slot-line Quad-Band Frequency Reconfigurable MIMO Antenna <i>Rifaqat Hussain Muhammad Umar Khan Mohammad S. Sharawi</i> <i>13th European Conference on Antennas and Propagation, res.country(178,)</i> Citations: N/A DOI: https://ieeexplore.ieee.org/document/8739799	2019
Frequency Reconfigurable MIMO Antenna using SRR for Multi-Band Operation <i>Rifaqat Hussain Muhammad Umar Khan Mohammad S. Sharawi</i> <i>13th European Conference on Antennas and Propagation, res.country(178,)</i> Citations: N/A DOI: https://ieeexplore.ieee.org/document/8739835	2019
Correlation Reduction in a 4-Element MIMO Antenna using Partially Reflective Surface <i>Tayyab Hassan Muhammad U. Khan Noshawan Shoaib Rifaqat Hussain Mohammad S. Sharawi</i> <i>2019 13th European Conference on Antennas and Propagation (EuCAP), res.country(178,)</i> Citations: N/A DOI: https://ieeexplore.ieee.org/document/8739462	2019
Triband Impedance Transformer for Frequency Dependent Complex Load <i>Warda Saeed Dr. Noshawan Shoaib Dr. Hammad Mehmood Cheema Dr. Muhammad Umar Khan Fatima Khalid</i> <i>Proceedings of 18th International Symposium on Antenna Technology and Applied Electromagnetics (ANTEM), res.country(38,)</i> Citations: N/A	2018
A Broadband SIW Antenna for 5G Applications <i>Muhammad R. Wali Farooq A. Tahir Muhammad U. Khan R. Hussain</i> <i>2018 IEEE International Symposium on Antennas and Propagation & USNC/URSI National Radio Science Meeting, res.country(233,)</i> Citations: N/A DOI: 10.1109/APUSNCURSINRSM.2018.8608665	2018
A Dual-Band Metamaterial Superstrate for Antenna Gain Enhancement <i>Zain Haider Dr. Muhammad Umar Khan Dr. Hammad Mahmood Cheema</i> <i>Proceedings of the Proceedings of the IEEE AP-S/URSI Conference, res.country(233,)</i> Citations: N/A	2018
Multiband Antenna Design for Ambient Energy Harvesting based on RF Field Investigation <i>Fatima Khalid Muhammad U. Khan Noshawan Shoaib Warda Saeed Hammad M. Cheema</i> <i>Proceedings of the IEEE AP-S/URSI Conference, res.country(233,)</i> Citations: N/A DOI: 10.1109/APUSNCURSINRSM.2018.8609329	2018
A Dual PIFA Based MIMO and Tunable DGS MIMO Antenna System <i>Rifaqat Hussain Muhammad U. Khan Mohammad S. Sharawi</i> <i>12th European Conference on Antennas and Propagation (EuCAP), res.country(231,)</i> Citations: N/A DOI: 10.1049/cp.2018.0569	2018

Book Chapters

MIMO Antennas for 5G-Enabled Devices <i>Rifaqat Hussain Muhammad Umer Khan Mohamed A. Abou-Khousa Mohammad S. Sharawi</i> In: <i>Book on Wideband, Multiband, and Smart Antenna Systems</i> , Chapter 4, Pages 95-130 Citations: 1 DOI: 10.1007/978-3-030-74311-6_4	2021
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Intellectual Property

Copyrights

Patents

Patch Antenna Array with Wide Bandwidth, High Gain and Wide Azimuth Beamwidth for Passive Sensing Status: Filed	2020
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Industrial Designs

Blade Antenna Array Status: Filed	2023
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