

DR. MOAZAM MAQSOOD

Correspondence Address: Apartment 15, 2nd Floor, Block B, Rania Heights, Zaraj
Housing Society, Islamabad

Contact number: +92335-1862445, +9251-9075563

Email: moazammaqsood@gmail.com
moazam.maqsood@fbse.paf-iast.edu.pk

BRIEF BIOGRAPHY

Moazam got his PhD degree in 2013 from the University of Surrey, UK, He joined Institute of Space Technology, Pakistan in the same year and got involved in various R&D projects. He has a vast experience of managing projects both during his study period as well as in the professional career. He has worked with Surrey Satellite Technology Ltd.; a leading satellite manufacturer. He also has experience of managing big projects and handling large teams. He secured funding (15M) for the development of High Altitude Platform for providing Internet services to the remote areas of Pakistan. He is currently involved in several projects related to RF front end design such as “Design and Development of Landing Assist system for UAVs” and “Design and Development of Wideband Isotropic Antennas for Spectrum Sensing.” He has also held several administrative positions within IST. Moazam has so far supervised more than 30 students at BS and MS levels. He has co-authored more than 25 international publications for different conferences and reputable journals. He has recently received the Best University Teacher Award at Institute of Space Technology, Islamabad. He is now working as Assistant Professor at Pak-Austria Fachhochschule: Institute of Applied Sciences and Technology.

TEACHING EXPERIENCE

Assistant Professor	2022 - date
Electrical & Computer Engineering Department Pak-Austria Fachhochschule: Institute of Applied Sciences and Technology, Mang, Haripur	

Assistant Professor	2013 - 2022
Electrical Engineering Department Institute of Space Technology, Islamabad	

EDUCATION

PhD. Electrical Engineering **2009 - 2013**
University of Surrey, Guilford, UK

MSc. Microwave Engineering and Wireless Subsystem Design **2008 - 2009**
University of Surrey, Guilford, UK
Distinction (86.8%)

BS Communication Systems Engineering
Institute of Space Technology, Islamabad
CGPA = 3.82/4, Gold Medalist

2002 - 2006

R&D PROJECTS

Project	Funding Agency	Role
Wideband Wilkinson Power Divider for X-Band Radar Applications	NESCOM	Principal Investigator
Wide Band RF Front End for Spectrum Sensing	PAEC-ICCC	Co- Principal Investigator
Provision of Wireless and Internet Services to remotely located areas of Pakistan using High Altitude Platforms	IGNITE	Principal Investigator
Design and development of 3U CubeSat	HEC	Co- Principal Investigator
Design and Development of Dual band antenna array for high altitude platform with polarization switching capability	HEC	Principal Investigator
Mutual coupling compensation in large phased array antennas	NESCOM	Principal Investigator
Design of 40 element Uniform Linear Array employing monopulse technique for target resolution	NESCOM	Principal Investigator
Design and Development of Deployable Antenna and RF components for Pakistan National Student Satellite (PNSS)	SUPARCO	Principal Investigator

RESEARCH PUBLICATIONS

1. U. R. Qureshi, **M. Maqsood**, M. Amin, A.R. Maud and N. Shoaib, "A boomerang-shaped UWB antenna for spectrum sensing", Journal of Electromagnetic Waves and Applications, 2021.
2. U. Ullah, F. A. Bhatti, A. R. Maud, M. I. Asim, K. Khurshid, **M. Maqsood**, "IoT-enabled computer vision-based parts inspection system for SME 4.0", Microprocessors and Microsystems, 2021, 104354, ISSN 0141-9331.
3. H. T. Ali, S. Amin, M. Amin, **M. Maqsood**, A.R. Maud, and M. Yusuf, "Design and Development of a Near Isotropic Printed Arc Antenna for Direction of Arrival (DoA) Applications". MDPI Electronics, vol. 10, pg. 797, 2021.

4. M. Shahzaib, S. Shakil, S. Ghaffar, **M. Maqsood** and F. A. Bhatti, "Classification of Forearm EMG Signals for Ten Motions using Optimum Feature-Channel Combinations", *Computer Methods in Biomechanics and Biomedical Engineering*, Dec 2020.
5. O. Ansari, M. Amin, **M. Maqsood** and A. R. Maud, "Inter-subset Hamming Distance Maximization for Enhancing the Physical Layer Security of Antenna Subset Modulation", *IEEE Access*, vol. 8, pp. 221513-221524, 2020.
6. Iqbal, A.; Siddique, S.; **Maqsood, M.**; Atiq Ur Rehman, M.; Yasir, M. Comparative Analysis on the Structure and Properties of Iron-Based Amorphous Coating Sprayed with the Thermal Spraying Techniques. *Coatings* 2020, 10, 1006.
7. Saad MM, Bhatti FA, Zafar A, Jangsher S, Kim D, **Maqsood M.** Air-interface virtualization using filter bank multicarrier and orthogonal frequency division multiplexing configurations. *Trans Emerging Tel Tech.* 2020.
8. M. M. Hassan, Z. Zahid, A. A. Khan, I. Rashid, A. Rauf, **M. Maqsood** and F. A. Bhatti (2020) Two element MIMO antenna with frequency reconfigurable characteristics utilizing RF MEMS for 5G applications, *Journal of Electromagnetic Waves and Applications*, 34:9, 1210-1224
9. M. A. Jamshed, O. Amjad, **M. Maqsood**, M. Ur Rehman, D. N. Jayakody and H. Pervaiz, Haris. A Dipole Sub-array with Reduced Mutual Coupling for Large Antenna Array Applications. *IEEE Access*. PP. 1-1. 10.1109/ACCESS.2019.2955855.
10. Y. Gillani, I. Saeed, **M. Maqsood**, R. Mahmood and T. Mehmood, "Design and Development of Deployable Dipole Antennas for Micro and Nano Satellites", *Journal of Space Technology*, 2020
11. M. M. Hassan, Z. Zahid, A. A. Khan and **M. Maqsood**, "A wideband loop-type ground radiation antenna using ground mode tuning and optimum impedance level", *Microwave and Optical Technology Letters*, vol. 61, 09, 2056-2061, 2019.
12. T. Hamed and **M. Maqsood**, "SAR Calculation & Temperature Response of Human Body Exposure to Electromagnetic Radiations at 28, 40 and 60 GHz mmWave Frequencies," *Progress In Electromagnetics Research M*, Vol. 73, 47-59, 2018.
13. M. A. Jamshed, O. Amjad and **M. Maqsood**, "Layered structure printed dipole antenna with integrated balun for phased array radars", *2018 International Conference on Computing, Mathematics and Engineering Technologies (iCoMET)*, Sukkhar, Pakistan
14. M. U. Khan, **M. Maqsood** and A. I. Najam, "Design of Dual Band Printed Inverted F Antenna (PIFA) for Low Earth Orbit (LEO) small satellites", *IEEE International Symposium on Recent Advances in Electrical Engineering (RAEE)*, Islamabad, Pakistan, 2017.
15. A. Nauman and **M. Maqsood**, "System design and performance evaluation of High Altitude Platform: Link Budget and Power budget", *The 19th International Conference on Advanced Communications Technology*, South Korea, 2017
16. A. Nasir and **M. Maqsood**, "Correction for beamforming in array antenna using firefly & harmony search algorithm," *2015 12th International Conference on High-capacity Optical Networks and Enabling/Emerging Technologies (HONET)*, Islamabad, 2015.
17. **M. Maqsood**, S. Gao, T. Brown, M. Unwin, R. D. Steenwijk, J. D. Xu and C. I.

Underwood, “Low-Cost Dual-Band Circularly Polarized Switched-Beam Array for Global Navigation Satellite System”, IEEE Transactions on Antenna and Propagation, vol. 62, no. 4, pp 1975-1982, April 2014.

18. F. Kanwal, H. Sultan, **M. Maqsood**, Q. ul Islam, S. Gao, "Novel dual-band antenna with simultaneous linear and circular polarizations," Antennas and Propagation Conference (LAPC), 2014 Loughborough , vol., no., pp.509,511, 10-11 Nov. 2014
19. **M. Maqsood**, S. Gao, T. Brown, M. Unwin, R. D. Steenwijk and J. D. Xu, “A Compact Multipath Mitigating Ground Plane for Multiband GNSS Antennas”, IEEE Transactions on Antenna and Propagation, vol. 61, no. 5, pp 2775-2782, May 2013.
20. **M. Maqsood**, S. Gao, T. Brown, J. D. Xu and J. Z. Li, "Novel Multipath Mitigating Ground Planes for Multiband Global Navigation Satellite System Antennas", Proc. of European Conference on Antenna and Propagation Conference, Mar. 2012, Czech Republic.
21. M. Unwin, S. Gao, R. De Vos Van Steenwijk, P. Jales, **M. Maqsood**, C. Gommenginger, J. Rose, C. Mitchell and K. Partington, “Development of Low-Cost Spaceborne Multi-Frequency GNSS Receiver for Navigation and GNSS Remote Sensing”, International Journal of Space Science and Engineering, vol. 1, no. 1, pp 20 – 50, Jan 2012 (Invited Paper).
22. **M. Maqsood**, S. Gao and T. Brown, Multipath-mitigation GNSS antennas with different ground planes, Proc. of Loughborough Antennas and Propagation Conference, Nov. 2010, UK.
23. **M. Maqsood**, B. Bhandari, S. Gao, R. D. Steenwijk and M. Unwin, Development of Dual-Band Circularly Polarized Antennas for GNSS Remote Sensing onboard Small Satellites, ESA Workshop on Antennas for Space Applications, ESTEC, Netherlands, 2010.
24. **M. Maqsood**, B. Bhandari, S. Gao, R. D. Steenwijk and M. Unwin, Dual-Band Circularly Polarized Antennas for GNSS Remote Sensing, IEEE International Symposium on Communication Systems, Networks and DSP, Newcastle upon Tyne, UK, 2010.

BOOK CHAPTERS (AUTHOR / Co-AUTHOR)

1. C. C. Chen, S. Gao, **M. Maqsood**, “Antennas for Global Navigation Satellite Systems Receivers”, Chapter 14 of Space Antenna Handbook edited by W.A Imbriale, S. Gao, L. Boccia, Wiley, 2012, ISBN: 978-1-119-99319-3
2. **M. Maqsood**, S. Gao and O. Montenbruck. “Antennas”, Chapter 19 of Springer Handbook of Global Navigation Satellite Systems edited by P. Teunissen and O. Montenbruck, Springer, 2017, ISBN: 978-3-319-42926-7

TEACHING ACTIVITIES

Dr. Moazam has taught various courses at both BS and MS Level. He is currently in charge of MS Electrical Engineering (RF & Microwaves) Program. Moreover, he is happy to take on any course related to the Electrical Engineering Curriculum.

MS Taught Courses

608704	Advanced Electromagnetic Field Theory
708707	RF Circuits Design and Analysis
708705	Antenna and Arrays Theory
808210	Satellite Communication

BS Taught Courses

408712	Antennas and Wave propagation
405108	Spacecraft Engineering
308115	Electromagnetic Field Theory
308201	Communication Systems
308801	Electromechanical Systems
208503	Signals and Systems

PHD PROJECT SUPERVISION

Design and Development of MIMO Reconfigurable Antenna System based on MEMS Technology	2021
---	------

MS PROJECT SUPERVISION

X-band Power Amplifier for Aircraft Landing System	2020
The Ellipse Shape Leaky Wave Antenna with High Gain for Landing System	2020
A Miniaturized Multi Arc Shaped Quasi-Isotropic Self-Complementary Antenna for Spectrum Sensing Applications	2020
Design and Development of Miniaturized Microstrip Coupled line Band-stop Filter with Wide Spurious-free Passband	2019
Design and Implementation of COTS Based VHF/UHF Communication Subsystem for Small Satellites	2019
Design and Development of ultra wide band filter with multiple tunable stop bands	2019
Design of Low Cost Antipodal Vivaldi Antenna Array	2018
Design of Low Noise Amplifier for High Altitude Platform	2017
SAR Calculation & Temperature Response of Human Body Exposure to Electromagnetic Radiations at 28, 40, and 60 GHz mmWave Frequencies	2016
System Designing of High Altitude Platform: Link and Power Budget	2016
Novel Dipole Suitable for High Power Phased Array Radars	2016
Single Element Failure Correction of Linear Array using Hybrid Computing	2015

BS FINAL YEAR PROJECT SUPERVISION

IoT based System for Remote Health Monitoring	2021
End to End 3D Industrial Parts Inspection System using Computer Vision	2021
Smart Reader for Visually Impaired People	2020
Design and Development of S-band Phased Array Antenna	2019
Roadside Radar for a single target detection using Pulse Doppler Radar	2019
IoT based Energy Meter	2019
Design and Implementation of Low Noise Amplifier	2019
Home Energy Management System	2019
Multiple Simultaneous Target Detection using FMCW Radar	2018
Design and Development of Phased Array Antenna	2018
Design and Development of passive microwave components and deployable antenna system for PNSS	2017
Design and implementation of PLC-VLC system	2017
Design and Assembly of Vending Machine	2016
Satellite positioner ground station	2015
Deployable transmit and receive antenna for Nano-satellites	2015
Target tracking through SMART antenna	2015
Currency note verification system	2015
Remote sensing of Solar Panels through GSM	2015
Physical layer security using frequency and polarization hopping	2015
Dual band antenna array for multiple applications	2014
Antenna RADAR system	2014

PROFESSIONAL ACTIVITIES

Dr. Moazam has served as a reviewer of several national and international conferences and journals. The list includes:

- IET Microwaves, Antennas and Propagation
- IET Electronics Letters
- IEEE Transactions on Aerospace and Electronic Systems.
- Journal of Space Technology
- European Conference on Antennas and Propagation (EuCAP)
- International Conference on Aerospace Science and Engineering (ICASE).
-

ADMINISTRATIVE EXPERIENCE

Dr. Moazam has extensive experience in managing departmental and student related activities. He has served on several Departmental and University committees for academic policy making and looking after student well being

- Member Departmental Quality Assurance Committee, Institute of Space Technology
 - Responsibilities included implementation of Outcome Based Education (OBE) System (similar to Abet). He was head of the Electrical Engineering Departmental Quality for both BS and MS programs where his main responsibilities was overseeing the preparation of program Self-Assessment Report (SAR), preparation of Employer and Alumni Survey forms, Mapping of courses to Program Learning Outcomes (PLOs) and looking after Course Folders.
- Member Departmental Student Grievances Committee, Institute of Space Technology
 - Responsibilities include listening to the students problems (personal as well as academic) and providing them with counseling on dealing with their issues.
- Member Senate (Board of Governors), Institute of Space Technology
 - Responsibilities include discussion on key university issues and helping other board members to understand the university perspective.
- Member Academic Council, Institute of Space Technology
 - Responsibilities include helping in evaluation of academic policies and key decisions related to the curriculum development as well as student related policies.
- Member Departmental Tenure Review Committee (DTRC), Institute of Space Technology
 - Responsibilities include conducting the performance reviews of other faculty members and providing them with guidance to improve on academic proficiency.

COMMUNITY/STUDENT SERVICES

- Faculty Patron, IEEE Student Chapter
 - Responsibilities include helping students to organize national level workshops, seminars and several student related activities for EE students.
- President, Surrey Islamic Society, University of Surrey UK.
 - Responsibilities included interaction with Students Union and University Chaplain office for arrangement of on campus JummaH prayer for Muslim students and general community around Guildford.

INTERNATIONAL PARTICIPATION

- Participant, China Microsatellite Symposium, Xian, China.
- Presenter, “Belt and Road” Aerospace Innovation Alliance, China.

- Participant, 1st Space Science School, Bangkok, Thailand.
- Presenter, European Conference on Antennas and Propagation (EuCAP), Czech Republic.
- Presenter, Loughborough Antennas and Propagation Conference (LAPC), UK.

REFERENCES

Prof. Steven Gao,
University of Kent, UK, s.gao@kent.ac.uk

Prof. Khurram Khurshid
Institute of Space Technology, Islamabad (khurram.khurshid@ist.edu.pk)