

# Dr. Usman Illahi

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🌐 Google Scholar

🌐 LinkedIn



## Employment History

- 2014 – Onwards     **Assistant Professor.**  
Department of Electrical Engineering, Faculty of Engineering & Technology, Gomal University, D. I. Khan, KP, Pakistan.
- 2012 – 2014     **Lecturer.**  
Department of Electrical Engineering, Faculty of Engineering & Technology, Gomal University, D. I. Khan, KP, Pakistan.
- 2009 – 2011     **Lecturer.**  
Institute of Computing and Information Technology, Gomal University, D. I. Khan, KP, Pakistan.
- 2007 – 2009     **Executive Engineer.**  
Optical Fiber Cable Department, Engineering Division, Wateen Telecom Limited, Pakistan.

## Academic Qualification

- 2016 – 2019     **Ph.D. Electrical and Electronic Engineering.**  
Universiti Kuala Lumpur, Malaysia.  
**Graduate on Time.**
- 2011 – 2012     **M.Sc. Electronic Communications and Computer Engineering.**  
University of Nottingham, Malaysia Campus.  
**With Merit.**
- 2003 – 2007     **B.Sc. Electrical Engineering.**  
University of Engineering and Technology, Peshawar, Pakistan.  
**With Honours.**

## Professional Responsibilities

- 📌 Preparing and delivering lectures, tutorials, workshops, and seminars.
- 📌 Developing curricula and course material that can be used across several platforms.
- 📌 Collaborating with other academics and lecturers to improve teaching methods and expand the knowledge base.
- 📌 Setting and grading assignments, tests, and exams.
- 📌 Conducting research and writing papers, proposals, journal articles, and books.
- 📌 Supervising and assessing M.Sc. and Ph.D. Electrical Engineering students.
- 📌 Attending meetings, conferences, and other events in and outside the institution.
- 📌 Participating in training opportunities and initiatives at the institution.
- 📌 Providing support to students and other colleagues.
- 📌 Staying current by reading widely and producing published work in the field.

## Subjects Taught

Undergraduate	■ Electromagnetic Theory   RF and Microwave Engineering   Antennas and Wave Propagation   Satellite Communications   Mobile Communications   Signal and System   Optical Communication.
Postgraduate	■ Research Methodology   Advanced Antenna Theory and Design   Advanced Optical Communication   Advanced Communication Systems.

## Departmental Duties

Senior Member of BoS	■ Implementation of Outcome-Based Education (OBE) System by framing the content of various courses, reviewing and updating the content from time to time and introducing new courses of study whenever required.
Postgraduate Coordinator	■ Provide a high standard of academic related administrative support to the faculty's postgraduate students from admission till the final defence.
Member of Technical Committee	■ Make decisions, recommend action, and oversee activities that enable the realization of the development and advancement of the Electrical Engineering Equipment.
Member of Purchase Committee	■ Primarily responsible for monitoring, verifying and ensuring that approved procurement procedures have been applied properly.

## Supervision

PhD Electrical Engineering	■ Under Supervision 1   Co-supervision 4
MSc Electrical Engineering	■ Under Supervision 4   Co-supervised 12
BSc Electrical Engineering	■ Final Year Design Projects, Supervised 12   Co-supervised 10



## Awards and Achievements

2023	■ <b>APC Partial Waiver</b>   100 CHF   Journal of Personalized Medicine (JPM).
	■ <b>APC Partial Waiver</b>   100 CHF   Applied Sciences.
2022	■ <b>Travel Grant by HEC Pakistan</b>   The International Conference & Exhibition for Science (ICES2023)   06-08 Feb, 2023   King Saud University   Riyadh   Saudi Arabia.
2021	■ <b>HEC approved PhD Supervisor</b>   Higher Education Commission Pakistan.
2020	■ <b>Scopus Q1 Publication Reward</b>   RM 1000   1 <sup>st</sup> Author   Design and development of a singly-fed circularly polarized rectangular dielectric resonator antenna for WiMAX/Satellite/5G NR band applications   <b>AEU - International Journal of Electronics and Communications</b>   Universiti Kuala Lumpur (UniKL)
	■ <b>Scopus Q1 Publication Reward</b>   RM 1000   1 <sup>st</sup> Author   Design of New Circularly Polarized Wearable Dielectric Resonator Antenna for Off-Body Communication in WBAN Applications   <b>IEEE ACCESS</b>   Universiti Kuala Lumpur (UniKL)
2019	■ <b>Best Paper Award</b>   IEEE AP/MTT/EMC Malaysia Joint Chapter.
	■ <b>Graduate on Time</b>   Universiti Kuala Lumpur.
	■ <b>Scopus Q1 Publication Reward</b>   RM 1000   1 <sup>st</sup> Author   Singly-Fed Rectangular Dielectric Resonator Antenna with a Wide Circular Polarization Bandwidth and Beamwidth for WiMAX/Satellite Applications   <b>IEEE ACCESS</b>   Universiti Kuala Lumpur (UniKL)
	■ <b>2<sup>nd</sup> Runner up</b>   3MT Competition   Universiti Kuala Lumpur.





## Awards and Achievements (continued)

- 2018     **Best Presenter** | 2<sup>nd</sup> Innovative Research in Engineering and Technology International Conference 2018 (IREITIC 2018) | 05-07 Jan, 2018 | Kota Kinabalu | Malaysia.
-  **Travel Grant by Universiti Kuala Lumpur** | 2<sup>nd</sup> Innovative Research in Engineering and Technology International Conference 2018 (IREITIC 2018) | 05-07 Jan, 2018 | Kota Kinabalu | Malaysia.
- 2016     **The Excellent Graduate Assistance Scholarship (EGA)** | Universiti Kuala Lumpur.
- 2013     **Merit Award** | University of Nottingham.
- 2007     **Honour Award** | University of Engineering & Technology Peshawar.






## Professional Memberships

- Graduate Engineer     Board of Engineers Malaysia | ELECTRONIC | G20924A
- Registered Engineer     Pakistan Engineering Council | ELECT | 25450







## Skills

- Design Tools     CST | HFSS | OptiSystem
- Coding     MATLAB |  $\text{\LaTeX}$
- Languages     Strong Reading | Writing | Speaking competencies for English | Urdu.
- Misc.     Academic writing | teaching | training | consultation |  $\text{\LaTeX}$  typesetting and publishing






## Peer-Reviewed Journals Reviewer

-  Computers, Materials and Continua | CMC
-  Optical and Quantum Electronics | OQE
-  Journal of Sensor and Actuator Networks | JSAN.
-  Journal of Personalized Medicine | JPM.
-  Applied Sciences.

## Areas of Research Interest

-  Antenna Design.
-  Dielectric Resonator Antennas.
-  Antennas for 5G Communication Systems.
-  Wearable Antennas for WBAN Applications.
-  MIMO Antennas and Mitigation of Mutual Coupling Techniques.
-  Millimetre-Wave Technology.

## Research Summary

- |  |   |
|--|---|
| JCR Q <sub>1</sub> /Q <sub>2</sub>   Scopus Q <sub>1</sub> /Q <sub>2</sub> |  Fourteen (14) |
| Scopus Q <sub>3</sub>  |  Three (03)    |
| ISI Indexed Journals   |  Three (03)    |
| International/National Journals  |  Ten (10)      |
| International IEEE Conferences   |  Six (06)      |

## Research Summary (continued)

Total Number of Publications	Thirty Six (36)
Cumulative Impact Factor	50.001
h-index   i10-index	10
Citations	315

## Research Publications

### Selected Journal Articles

- 1 **Illahi, U.**, Iqbal, J., Irfan, M., Ismail Sulaiman, M., Khan, M. A., Rauf, A., ... Nowakowski, G. et al. (2022). A Novel Design and Development of a Strip-Fed Circularly Polarized Rectangular Dielectric Resonator Antenna for 5G NR Sub-6 GHz Band Applications. *Sensors*, 22(15), 5531.  
[doi:https://doi.org/10.3390/s22155531](https://doi.org/10.3390/s22155531)
- 2 Ali, A., Tong, J., Iqbal, J., **Illahi, U.**, Rauf, A., Rehman, S. U., ... Ghoniem, R. M. (2022). Mutual Coupling Reduction through Defected Ground Structure in Circularly Polarized, Dielectric Resonator-Based MIMO Antennas for Sub-6 GHz 5G Applications. *Micromachines*, 13(7), 1082.  
[doi:https://doi.org/10.3390/mi13071082](https://doi.org/10.3390/mi13071082)
- 3 Iqbal, J., **Illahi, U.**, Khan, M. A., Rauf, A., Ali, E. M., Bari, I., ... Dalarsson, M. (2022). A Novel Single-Fed Dual-Band Dual-Circularly Polarized Dielectric Resonator Antenna for 5G Sub-6 GHz Applications. *Applied Sciences*, 12(10), 5222. [doi:https://doi.org/10.3390/app12105222](https://doi.org/10.3390/app12105222)
- 4 Iqbal, J., **Illahi, U.**, Yasin, M., Albreem, M. A., & Akbar, M. (2022). Bandwidth enhancement by using parasitic patch on dielectric resonator antenna for sub-6 GHz 5G NR bands application. *Alexandria Engineering Journal*, 61(6), 5021–5032. [doi:https://doi.org/10.1016/j.aej.2021.09.049](https://doi.org/10.1016/j.aej.2021.09.049)
- 5 Bari, I., Iqbal, J., Ali, H., Rauf, A., Bilal, M., **Illahi, U.**, ... Ghoniem, R. M. (2022). Bandwidth Enhancement and Generation of CP of Yagi-Uda-Shape Feed on a Rectangular DRA for 5G Applications. *Micromachines*, 13(11), 1913. [doi:https://doi.org/10.3390/mi13111913](https://doi.org/10.3390/mi13111913)
- 6 **Illahi, U.**, Iqbal, J., Sulaiman, M. I., Alam, M., Su'ud, M. M., & Khattak, M. I. (2020). Design and Development of a Singly-Fed Circularly Polarized Rectangular Dielectric Resonator Antenna for WiMAX/Satellite/5G NR Band Applications. *AEU-International Journal of Electronics and Communications*, 126, 153443. [doi:https://doi.org/10.1016/j.aeue.2020.153443](https://doi.org/10.1016/j.aeue.2020.153443)
- 7 **Illahi, U.**, Iqbal, J., Sulaiman, M. I., Alam, M. M., Su'Ud, M. M., Jamaluddin, M. H., & Yasin, M. N. M. (2019). Design of New Circularly Polarized Wearable Dielectric Resonator Antenna for Off-Body Communication in WBAN Applications. *IEEE Access*, 7, 150573–150582.  
[doi:https://doi.org/10.1109/ACCESS.2019.2947772](https://doi.org/10.1109/ACCESS.2019.2947772)
- 8 **Illahi, U.**, Iqbal, J., Sulaiman, M. I., Alam, M. M., Su'ud, M. M., & Jamaluddin, M. H. (2019). Singly-Fed Rectangular Dielectric Resonator Antenna With a Wide Circular Polarization Bandwidth and Beamwidth for WiMAX/Satellite Applications. *IEEE Access*, 7, 66206–66214.  
[doi:https://doi.org/10.1109/ACCESS.2019.2917702](https://doi.org/10.1109/ACCESS.2019.2917702)
- 9 Iqbal, J., **Illahi, U.**, Sulaiman, M. I., Alam, M. M., Su'ud, M. M., Yasin, M. N. M., & Jamaluddin, M. H. (2019). Bandwidth Enhancement and Generation of CP by Using Parasitic Patch on Rectangular DRA for Wireless Applications. *IEEE Access*, 7, 94365–94372.  
[doi:https://doi.org/10.1109/ACCESS.2019.2924468](https://doi.org/10.1109/ACCESS.2019.2924468)
- 10 Iqbal, J., **Illahi, U.**, Sulaiman, M. I., Alam, M. M., Su'ud, M. M., & Yasin, M. N. M. (2019). Mutual Coupling Reduction Using Hybrid Technique in Wideband Circularly Polarized MIMO Antenna for WiMAX Applications. *IEEE Access*, 7, 40951–40958.  
[doi:https://doi.org/10.1109/ACCESS.2019.2908001](https://doi.org/10.1109/ACCESS.2019.2908001)

- 11 Hassan, S. I., Alam, M. M., **Illahi, U.**, & Suud, M. M. (2023). A new deep learning-based technique for rice pest detection using remote sensing. *PeerJ Computer Science*, 9, e1167.  
doi:https://doi.org/10.7717/peerj-cs.1167
- 12 Hassan, S. I., Alam, M. M., Zia, M. Y. I., Rashid, M., **Illahi, U.**, & Su'ud, M. M. (2022). Rice Crop Counting Using Aerial Imagery and GIS for the Assessment of Soil Health to Increase Crop Yield. *Sensors*, 22(21), 8567. doi:https://doi.org/10.3390/s22218567
- 13 Hassan, S. I., Alam, M. M., **Illahi, U.**, Al Ghamdi, M. A., Almotiri, S. H., & Su'ud, M. M. (2021). A Systematic Review on Monitoring and Advanced Control Strategies in Smart Agriculture. *IEEE Access*, 9, 32517–32548. doi:https://doi.org/10.1109/ACCESS.2021.3057865
- 14 Abdul Halim, A. A., Andrew, A. M., Mohd Yasin, M. N., Abd Rahman, M. A., Jusoh, M., **Illahi, U.**, ... Scavino, E. (2021). Existing and Emerging Breast Cancer Detection Technologies and Its Challenges: A Review. *Applied Sciences*, 11(22), 10753. doi:https://doi.org/10.3390/app112210753
- 15 Syeda, I. H., Alam, M. M., **Illahi, U.**, & Su'ud, M. M. (2021). Advance control strategies using image processing, uav and ai in agriculture: A review. *World Journal of Engineering*.  
doi:https://doi.org/10.1108/WJE-09-2020-0459
- 16 **Illahi, U.**, Iqbal, J., Sulaiman, M., Alam, M., Mazliham, M., & Jamaluddin, M. (2019). Circularly polarized rectangular dielectric resonator antenna excited by an off-set conformal metal strip. *Indonesian Journal of Electrical Engineering and Computer Science*, 15(2), 902–909.  
doi:http://doi.org/10.11591/ijeecs.v15.i2.pp902-909
- 17 Iqbal, J., **Illahi, U.**, Sulaiman, M. I., Alam, M., Mazliham, M. S., & Ding, L. S. (2019). Mutual coupling reduction in circularly polarized dielectric resonator mimo antenna. *Indonesian Journal of Electrical Engineering and Computer Science*, 15(1), 266–273.  
doi:http://doi.org/10.11591/ijeecs.v15.i1.pp266-273
- 18 Khan, M. Y. A., Mustafa, E., Nawaz, A., Saleem, N., & **Illahi, U.** (2019). Sensor-fusion based navigation for mobile robot in outdoor environment. *Mehran University Research Journal of Engineering & Technology*, 38(1), 113–128. Retrieved from  
https://search.informit.org/doi/abs/10.3316/informit.094549400980693
- 19 **Illahi, U.**, Sulaiman, M. I., Iqbal, J., Alam, M., & Su'ud, M. M. (2018). A Novel Singly Fed Wideband Circularly Polarized Rectangular Dielectric Resonator Antenna using Hook-Shaped Metal Strip. *Sindh University Research Journal (Science Series)*, 50(3D), 59–62. Retrieved from  
https://sujo.usindh.edu.pk/index.php/SURJ/article/view/1127
- 20 Iqbal, J., Sulaiman, M. I., **Illahi, U.**, Alam, M., & Mazliham, M. S. (2018). A Wide band Circularly Polarized Rectangular Dielectric Resonator Antenna Excited by Novel Feed. *Sindh University Research Journal (Science Series)*, 50(3D), 63–66. Retrieved from  
https://sujo.usindh.edu.pk/index.php/SURJ/article/view/1142

## Conference Proceedings

- 1 **Illahi, U.**, Iqbal, J., Sulaiman, M. I., Alam, M., Mazliham, M. S., & Jamaluddin, M. H. (2019). A Conformal Metal Strip Fed Circularly Polarized Rectangular Dielectric Resonator Antenna. In *2019 ieee asia-pacific conference on applied electromagnetics (apace)* (pp. 1–3). IEEE.  
doi:https://doi.org/10.1109/APACE47377.2019.9020890
- 2 **Illahi, U.**, Iqbal, J., Sulaiman, M. I., Alam, M., & Mazliham, M. S. (2019). Improvement in Bandwidths and Beamwidths of a Singly-Fed Circularly Polarized Rectangular Dielectric Resonator Antenna using Two Parasitic Elements. In *2019 ieee international conference on smart instrumentation, measurement and application (icsima)* (pp. 1–4). IEEE. doi:https://doi.org/10.1109/ICSIMA47653.2019.9057326
- 3 Iqbal, J., **Illahi, U.**, Sulaiman, M. I., Alam, M., & Mazliham, M. S. (2019). Broad Bandwidth Micro Strip Array Antenna for Direction Finding. In *2019 ieee international conference on smart instrumentation,*

*measurement and application (icsima)* (pp. 1–6). IEEE.

doi:<https://doi.org/10.1109/ICSIMA47653.2019.9057312>

- 4 **Illahi, U.**, Iqbal, J., Sulaiman, M. I., Alam, M., & Mazliham, M. S. (2017). A novel singly fed wideband circularly polarized cylindrical multilayer DRA using conformal hook-shaped metal strip. In *2017 international conference on engineering technology and technopreneurship (ice2t)* (pp. 1–4). IEEE. doi:<https://doi.org/10.1109/ICE2T.2017.8215950>
- 5 Iqbal, J., **Illahi, U.**, Sulaiman, M. I., Alam, M., & Mazliham, M. S. (2017). Circularly polarized bandwidth enhancement using hollow cylindrical DRA. In *2017 international conference on engineering technology and technopreneurship (ice2t)* (pp. 1–4). IEEE. doi:<https://doi.org/10.1109/ICE2T.2017.8215951>
- 6 Malekmohammadi, A., **Illahi, U.**, Saqlain, M., & Abdullah, M. K. (2012). A novel mapping multiplexing technique for high speed optical fiber communication systems. In *2012 ieee 3rd international conference on photonics* (pp. 323–326). IEEE. doi:<https://doi.org/10.1109/ICP.2012.6379887>

## References

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