

PERSONAL INFORMATION

Dr. Permanand Soothar

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🌐 https://scholar.google.com/citations?user=A_va7ZUAAAAJ

🌐 <https://www.linkedin.com/in/permanand-soothar>

Gender Male | Date of birth March 12, 1983 | Nationality Pakistani

Research Interests Millimeter-wave antennas | 5G/6G antenna systems | Ultra-wideband (UWB) antennas | Vivaldi and Tapered Slot Antennas | Metamaterials | Gap Waveguide Technology | Microwave Sensing | Phased Arrays | Medical IoT Antennas | Radar-based Antenna Systems

WORK EXPERIENCE

June 2025 – Present

Visiting Faculty

Hyderabad Institute of Arts Science & Technology (HIAST), Sindh, Pakistan

- Deliver undergraduate courses in Computer Science and Engineering.
- Design curriculum, prepare lecture material, and conduct laboratory sessions.
- Supervise student research projects and academic mentoring.
- Contribute to departmental academic development activities.

April 2015 – Present

Instrumentation Engineer

Mehran University of Engineering & Technology (MUET), Pakistan

- In-charge of Optical Communication and Radio Communication Laboratories.
- Supervise undergraduate final-year thesis projects (Lead & Co-supervisor).
- Conduct practical & Theory training sessions on microwave and communication systems.
- Responsible for calibration, maintenance, and procurement of laboratory equipment.
- Coordinate with faculty on research instrumentation and experimental setups.

Aug 2016 – July 2024

Graduate Research Associate (PhD Researcher)

Nanjing University of Science and Technology (NJUST), China

- Designed and optimized mm-wave planar antennas using HFSS and CST.
- Developed broadband, high-gain Vivaldi and slot antenna structures.
- Fabricated antenna prototypes and performed VNA measurements.
- Conducted radiation pattern characterization in anechoic chamber.
- Published extensively in IEEE, Springer, Wiley, and MDPI journals.
- Presented research at international conferences and symposia.
- Collaborated with research groups on metamaterial and gap-waveguide technologies.

EDUCATION

2016 – 2024

PhD – Information & Communication Engineering

CSC Scholarship

Nanjing University of Science and Technology, China

- Specialization: Electromagnetic Field & Microwave Technology.
- Research Focus: Compact High-Gain Millimeter-Wave Antennas for 5G/6G Applications.
- Simulation, Fabrication, and Experimental Validation of Antenna Systems.

2007 – 2012

MEng – Telecommunication & Control Engineering

Mehran University of Engineering & Technology, Pakistan

2010 – 2011

MSc – Innovative Communication Technologies (Erasmus Mundus)

Aalborg University, Denmark

2001 – 2007 **BEng – Electronic Engineering**
Mehran University of Engineering & Technology, Pakistan

RESEARCH PROFILE

- Publications** 20+ peer-reviewed journal and conference publications including IEEE Transactions, Springer, Wiley, and MDPI journals.
- Research Expertise** Antenna miniaturization, broadband enhancement, gain optimization, electromagnetic simulation, microwave measurement techniques, and applied IoT antenna systems.
- Supervision** Supervised and co-supervised undergraduate engineering thesis projects in telecommunication systems and microwave engineering.

HONOURS AND AWARDS

- 2016** Chinese Government Scholarship (Fully Funded PhD)
- 2010** Erasmus Mundus Scholarship – European Commission
- 2023** IEEE Senior Member Recognition
- 2025** Session Chair – 8th International Multi-Topic ICT Conference
- Conference Roles** Organizing Committee Member – IMTIC Conferences (Multiple Years)

PROFESSIONAL MEMBERSHIPS

- IEEE Senior Member
- IEEE Microwave Theory and Techniques Society (MTT-S)
- IEEE Communications Society
- IEEE Computer Society
- Pakistan Engineering Council (PEC – Electro/08913)

SELECTED PUBLICATIONS

- Soothar P. et al., "A Compact Trowel-Shaped Antenna for 6G Systems," *Sensors*, 2025.
- Soothar P. et al., "CPW-Fed Semicircular Antenna for 5G mm-Wave," *Micromachines*, 2023.
- Soothar P. et al., "Broadband High Gain Tapered Slot Antenna," *Wireless Personal Communications*, Springer, 2021.
- Cao J. et al., "Magneto-Electric Dipole Antenna Array," *IEEE Transactions on Antennas and Propagation*, 2019.

PUBLICATIONS

- [1] Q. A. Jafferri, P. Soothar, F. Saeed, Z. A. Dayo, Z. A. Arain, S. Bai, and Z. He. "Wideband Slot-Loaded Circular Microstrip Antenna For Enhanced Medical IoT Connectivity". In: (2026).
- [2] Z. A. Dayo, P. Soothar, A. J. A. Al-Gubri, and Z. He. "Circular-Shaped Antenna Array Design for Drone Wireless Systems". In: (2026).
- [3] P. Soothar, H. Wang, Z. A. Dayo, F. G. Kakepoto, and F. K. Shaikh. "A Compact Trowel-Shaped Antenna for Next-Generation 6G Wireless Communication Systems". In: *Sensors* 25.23 (2025), p. 7224.
- [4] P. Soothar, Z. A. Dayo, Z. A. Arain, and Z. Jing. "Compact Florad Patch Antenna for UWB, C-, X-, and Ku-Band Applications with Enhanced Gain". In: *2025 International Applied Computational Electromagnetics Society Symposium (ACES-China)*. IEEE, 2025, pp. 1–3.
- [5] Z. A. Dayo, P. Soothar, A. J. A. Al-Gubri, K. H. Mohammadani, G. Shah, and Z. He. "Disc Shape Radiator Design Array for H-band Wireless Communication Systems". In: *2025 International Applied Computational Electromagnetics Society Symposium (ACES-China)*. IEEE, 2025, pp. 1–3.
- [6] P. Soothar, H. Ahmed, A. A. Memon, S. Ahmed, U. A. Korai, and A. Eman. "Compact Concentric-Ring Antenna for 6G Wireless Communication Systems". In: *Proceedings of the 8th International MultiTopic ICT Conference (IMTIC)*. In press. 2026.
- [7] P. Soothar, H. Wang, Z. A. Dayo, and Y. Quan. "A New CPW-Fed Semicircular Inverted Triangular-Shaped Antenna Based on Mixed-alternate Approach for 5G Millimetre-wave Wireless Applications". In: *micromachines* 14.1 (2023), p. 220.
- [8] P. Soothar, H. Wang, B. Muneer, Z. A. Dayo, and B. S. Chowdhry. "A Broadband High-Gain Tapered Slot Antenna for Underwater Communication in Microwave Band". In: *Wireless Personal Communications* 116.2 (2021), pp. 1025–1042.
- [9] P. Soothar, H. Wang, C. Xu, Y. Quan, Z. A. Dayo, M. Aamir, and B. Muneer. "A Miniaturized Broadband and High Gain Planar Vivaldi Antenna for Future Wireless Communication Applications". In: *International Journal of Antennas and Propagation* 2021.1 (2021), p. 9912008.
- [10] P. Soothar, H. Wang, C. Xu, Z. A. Dayo, B. Muneer, and K. Kanwar. "A Compact Broadband and High Gain Tapered Slot Antenna with Stripline Feeding Network for H, X, Ku and K Band Applications". In: *International Journal of Advanced Computer Science and Applications* 11.7 (2020), pp. 239–244.
- [11] P. Soothar, H. Wang, Z. A. Dayo, F. Naz, B. Muneer, and M. Aamir. "A Broadband High Gain Planar Vivaldi Antenna for Medical Internet of Things (M-IoT) Healthcare Applications". In: *International Journal of Computer Science and Network Security (IJCSNS)* 22.12 (Dec. 2022), pp. 245–251.
- [12] C. Xu, P. Soothar, S. Quan, G. Liang, and H. Wang. "The Design of Crossover Based on Microstrip Ridge Gap Waveguide of Dual-Layer Medium". In: *IET International Radar Conference (IET IRC 2020)*. Vol. 2020. IET, Nov. 2020, pp. 765–767.
- [13] J. Cao, H. Wang, S. Mou, P. Soothar, and J. Zhou. "An Air Cavity-Fed Circularly Polarized Magneto-Electric Dipole Antenna Array with Gap Waveguide Technology for mm-Wave Applications". In: *IEEE Transactions on Antennas and Propagation* 67.9 (2019), pp. 6211–6216.
- [14] Z. A. Dayo, M. Aamir, Z. Rahman, I. A. Khoso, M. M. Lodro, S. A. Dayo, P. Soothar, M. S. Pathan, A. J. A. Al-Gubri, A. A. Memon, and B. S. Chowdhry. "A Novel Low-Cost Compact High-Performance Flower-Shaped Radiator Design for Modern Smartphone Applications". In: *Micromachines* 14.2 (2023), p. 463.
- [15] Z. A. Dayo, Q. Cao, Y. Wang, P. Soothar, B. Muneer, and B. S. Chowdhry. "A Compact Broadband High Gain Antenna Using Slotted Inverted Omega Shape Ground Plane and Tuning Stub Loaded Radiator". In: *Wireless Personal Communications* 113.1 (2020), pp. 499–518.
- [16] Z. A. Dayo, Q. Cao, Y. Wang, P. Soothar, I. A. Khoso, G. Shah, and M. Aamir. "A Compact High Gain Multiband Bowtie Slot Antenna with Miniaturized Triangular Shaped Metallic Ground Plane". In: *Applied Computational Electromagnetic Society Journal (ACES)* 36.7 (2023), pp. 935–945.
- [17] Z. A. Dayo, M. Aamir, S. A. Dayo, I. A. Khoso, P. Soothar, F. Sahito, T. Zheng, Z. Hu, and Y. Guan. "A Novel Compact Broadband and Radiation Efficient Antenna Design for Medical IoT Healthcare System". In: *Mathematical Biosciences and Engineering* 19.4 (2022), pp. 3909–3927.
- [18] B. Wu, H. Wang, X. Liu, Z. Ding, S. Quan, J. Cao, and P. Soothar. "Optimization to the Scan Blindness of Vivaldi Array with Metallic T-Shaped Structure". In: *2019 IEEE MTT-S International Wireless Symposium (IWS), Guangzhou, China*. IEEE, 2019, pp. 1–3.
- [19] Z. A. Dayo, Q. Cao, Y. Wang, Ur. Rahman, S., and P. Soothar. "A Compact Broadband Antenna for Civil and Military Wireless Communication Applications". In: *International Journal of Advanced Computer Science and Applications* 10.9 (2019).
- [20] X. Liu, H. Wang, B. Wu, S. Quan, J. Cao, and P. Soothar. "A Novel Wide Bandwidth Antenna Design and Application in Wide Beam Scanning Phased Array". In: *2019 IEEE MTT-S International Wireless Symposium (IWS), Guangzhou, China*. IEEE, 2019, pp. 1–3.
- [21] Z. A. Dayo, Q. Cao, P. Soothar, M. M. Lodro, and Y. Li. "A Compact Coplanar Waveguide Feed Bow-tie Slot Antenna for WIMAX, C and X Band Applications". In: *2019 IEEE International Conference on Computational Electromagnetics (ICCEM), Shanghai, China*. IEEE, 2019, pp. 1–3.
- [22] Z. A. Dayo, Q. Cao, Y. Wang, and P. Soothar. "A Compact High Gain Multiband Bow-tie Slot Antenna". In: *2019 International Applied Computational Electromagnetics Society Symposium (ACES), Nanjing, China*. IEEE, 2019, pp. 1–2.
- [23] Z. A. Dayo, M. Aamir, S. A. Dayo, Z. Rahman, I. A. Khoso, G. Shah, P. Soothar, Z. Hu, and Y. Guan. "A Compact CPW-Fed Multiband Bow-Tie Slot Antenna for IoT Smart Healthcare Wireless Communication Applications". In: *2022 IEEE 95th Vehicular Technology Conference (VTC2022-Spring)*. IEEE, 2022, pp. 1–5.

- [24] Z. A. Dayo, M. Aamir, S. A. Dayo, P. Soothar, I. A. Khoso, Z. Hu, and Y. Guan. "A Compact Wideband Planar Monopole Antenna with Defected Ground Structure for Modern Radar Sensing Systems". In: *Sensing Technology: Proceedings of ICST 2022*. Springer, 2022, pp. 443–455.
- [25] M. Chandio, A. A. Jamali, F. A. Jokhio, M. R. Anjum, Z. A. Arain, and P. Soothar. "Triangular Nanoparticle Based Plasmonic Biosensor". In: *Sindh University Research Journal-SURJ (Science Series)* 52.2 (2020).

TECHNICAL SKILLS

Simulation HFSS • CST Microwave Studio • MATLAB

Measurement Vector Network Analyzer (VNA) • Anechoic Chamber Testing • Radiation Pattern Measurement

Design Tools AutoCAD • SolidWorks • Multisim • Proteus

Data Analysis MATLAB • OriginLab

Reference Tools EndNote • Mendeley

LANGUAGE SKILLS

Other languages

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
English	C1	C2	C2	C1	C1
Urdu	C2	C2	C2	C2	C2
Sindhi	C2	C2	C2	C2	C2
Chinese	A2	A2	A1	A2	A2

Levels: A1 and A2: Basic user – B1 and B2: Independent user – C1 and C2: Proficient user
[Common European Framework of Reference for Languages](#)

REFERENCES

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