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Publications:

Journals

- C. Bajaj, D. Kumar Upadhyay, S. Kumar and B. Kumar Kanaujia, "High-Gain 3-D RFID Reader Antenna With Cubic Metasurface Backing and 360° Coverage for Internet of Vehicles," in ***IEEE Transactions on Antennas and Propagation***, vol. 72, no. 7, pp. 5589-5599, July 2024.
- C.Bajaj, D. K. Upadhyay, S. Kumar and B. K. Kanaujia, "GPS-

Integrated RFID Antenna With AMC Backing for IoT-Based Sensing and Tracking Applications," in ***IEEE Transactions on Antennas and Propagation***, vol. 72, no. 2, pp. 1929-1934, Feb. 2024.

- C. Bajaj, D. K. Upadhyay, S. Kumar and B. K. Kanaujia, "Directional Energy-Efficient Metasurface-Backed RFID Reader Antenna for Minimizing Tag-Detection Uncertainty in IoT Networks," in ***IEEE Journal of Radio Frequency Identification***, vol. 8, pp. 88-97, 2024.
- C. Bajaj, S. Kumar, D. Kumar Upadhyay, B. Kumar Kanaujia, D. Gupta and T. Ali, "Modern RFID Reader Antennas: A Review of the Design, State-of-the-Art, and Research Challenges," in ***IEEE Access***, vol. 13, pp. 16427-16443, 2025.
- Chandni Bajaj, Dharmendra Kumar Upadhyay, Sachin Kumar, Binod Kumar Kanaujia, Compact circularly polarized cross dipole antenna for RFID handheld readers/IoT applications, ***AEU - International Journal of Electronics and Communications***, Volume 155, 2022, 154343, ISSN 1434-8411.
- Bajaj, C., Upadhyay, D.K., Kumar, S. *et al.* A Dual-Band Circularly Polarized Hexagonal Ring Antenna for Handheld RFID Readers. ***Wireless Pers Commun*** **125**, 3101–3115 (2022).

<u>Conferences</u>

- C. Bajaj *et al*., "Circularly Polarized Multi-Antenna System Using UHF Backscattering for Indoor Localization," *2025 International Conference on Control, Automation and Diagnosis (ICCAD)*, Barcelona, Spain, 2025, pp. 1-6.
- C. Bajaj, S. Kumar, A. K. Rana, J. Ghosh, A. Gorai and T. H. Sardar, "Design of a Circularly Polarized Antenna With Parasitic Loading for IoT Sensor Applications," *2025 5th IEEE International Conference on Applied Electromagnetics, Signal Processing, & Communication (AESPC)*, Bhubaneswar, India, 2025, pp. 1-4.
- C. Bajaj, S. Kumar, A. K. Rana and J. Ghosh, "Conformal High Gain Circularly Polarized Antenna for 5G IoT Devices," *2025 5th IEEE International Conference on Applied Electromagnetics, Signal Processing, & Communication (AESPC)*, Bhubaneswar, India, 2025, pp. 1-4.
- Bajaj, C., Kumar, S., Upadhyay, D.K., Kanaujia, B.K. (2025). Compact Universal UHF Printed Dipole Antenna for Handheld RFID Readers. In: Dong, J., Zhang, L., Zheng, T. (eds) Proceedings of the 3rd International Conference on Internet of Things, Communication and Intelligent Technology. IoTCIT 2024.

- C. Bajaj, D. Kumar Upadhyay, S. Kumar and B. Kumar Kanaujia, "Circularly Polarized Cross-Dipole Antenna with a Double Layer AMC Backing for UHF RFID Readers," 2021 **IEEE** International Conference on Communication, Control and Information Sciences (**ICCISc**), 2021, pp. 1-4.
- C. Bajaj, D. K. Upadhyay, S. Kumar and B. K. Kanaujia, "Compact Circularly Polarized 2.45/5.8-GHz Antenna for RFID Readers," 2021 **IEEE** International Conference on RFID Technology and Applications (**RFID-TA**), 2021, pp. 63-66.
- C. Bajaj, D. K. Upadhyay, S. Kumar and B. K. Kanaujia, "Compact Dual-Band Circularly-Polarized Cross-Dipole Antenna for Portable RFID Readers," 2021 **IEEE** International Conference on RFID Technology and Applications (**RFID-TA**), 2021, pp. 59-62.
- C. Bajaj, D. K. Upadhyay, S. Kumar, and B. K. Kanaujia, "Compact Dual-Band Hexagonal Ring Antenna with Shorting Pins for RFID Reader Applications," *2020 7th **IEEE** International Conference on Signal Processing and Integrated Networks (**SPIN**)*, Noida, India, 2020, pp. 405-408.

Book Chapter

- C. Bajaj, D. K. Upadhyay, S. Kumar, and B. K. Kanaujia, "Compact Universal UHF Printed Dipole Antenna for Handheld RFID Readers" In: Dong, J., Zhang, L., Zheng, T. (eds) Proceedings of the 3rd International Conference on Internet of Things, Communication and Intelligent Technology. IoTCIT 2024. Lecture Notes in Electrical Engineering, vol 1365, 2025.

Awards and Achievements:

- Recipient of AICTE Doctoral Fellowship (ADF), Govt. of India Scholarship for pursuing Ph.D.
- Recipient of AICTE GATE scholarship for pursuing M.Tech
- Secured the second position in the B.Tech First Year topper's list
- Secured the third position in the B.Tech Second Year topper's list

Granted Patents:

- C. Bajaj, D. K. Upadhyay, S. Kumar and B. K. Kanaujia, "A 3-D RFID READER SYSTEM WITH CUBIC METASURFACE BACKING" – ***Indian Patent*** No. 55217 – Date of Grant- December 31, 2024.

Total Work Experience:

- 8 months as a Research Fellow in NIT Jalandhar

- 1.6 years as a Guest Faculty in Netaji Subhas University of Technology, Delhi
- 4 years as an AICTE Research Fellow (University of Delhi)
- 3.2 years as a Software Engineer (Accenture Services Pvt. Ltd)