

PROFILE

Name	Dr. Nagesh K. N
Position & Affiliation	Professor and HoD, Vice Principal, CIT
Areas of Interest	Wireless Communication, Communication Systems Antennas, RADAR systems and Pedagogy
Email	hod.ece@cambridge.edu.in , viceprincipal@cambridge.edu.in , nageshlakmaya@gmail.com
LinkedIn ID	www.linkedin.com/in/drnageshkn
Google Scholar ID	https://scholar.google.co.in/citations?user=xRjHL00AAAAJ&hl=en
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Scopus ID	https://www.scopus.com/authid/detail.uri?authorId=55605568300

Educational Qualifications:

Ph.D.	JNTUA	India	2016
M.Tech.	VTU(NMAMIT- Nitte)	India	2007
BE	VTU(SIT- Tumkur)	India	2005

Areas of Research:

Wireless Communication, Communication Systems, Antennas, RADAR systems and Pedagogy

Brief Profile:

A committed and skilled professional with 18 years of experience in teaching, academics, research, and administration in a higher education institution. Excellent in team building and motivating teams. A team player who believes in capacity building and creates an atmosphere that encourages team members to be dedicated, accountable and provides enough opportunity to express their creativity and develop their capacity. A proven track record of designing, developing, and implementing successful academic and training programs that align with organizational goals and objectives. Strong leadership skills, detail-oriented, adept at critical decision-making, and managing deadlines. Seeking to enhance their academic offerings and training programs. Previously worked as Vice Principal at Nagarjuna College of Engineering and Technology, Bengaluru (NCET), Professor & Head in the Department of Electronics and Communication Engineering. The responsibilities include academic administration and leadership, developing teaching and learning strategies, implementing innovative practices that enhance the student learning experience, develop curriculum for undergraduate and graduate programme.

Successfully guided 8 Ph.D. scholars (4 Completed, 1 Submitted thesis, 4 Ongoing), with additional candidates in progress. His key leadership contributions include successfully leading NBA Tier 1 (2024-2027), NBA Tier 2 (2018-2022), He has also organized multiple IEEE conferences as Convener, including the Global Conference for Advancement in Technology (GCAT), International Conference for Innovation in Technology (INOCON), and International Conference on Ubiquitous Technology in AI and Communication (UTCA) sponsored by AIP.

Awards/Achievements/Others:

- Recognized with honors like the Unnathi Zilla Yuvarathna Award and KSTA Achievement Award, he exemplifies dedication to science and education.
- With 90+ research publications in reputed SCIE/SCI/ESCI journals and conferences, his commitment to research excellence is unwavering.
- He has successfully supervised 4 Ph.D. scholars and continues to mentor 4 more.
- Recognized for innovation with 5 International and 3 Indian Patents granted, along with 45 Indian Patents published.
- Contributed to academic literature with 1 authored book and 3 published book chapters
- Served as Convener for 7 IEEE International Conferences at NCET, including GCAT (2019–2024), INOCOM 2020, and UTCA 2023, promoting innovation in technology and artificial intelligence.
- His work has been presented at international platforms including IEEE Conferences (Hawaii, USA), IEEE Conferences (South Korea), and Elsevier Conferences (Oman).
- Lead a team of 15 members Cricket Team to win many Faculty Cricket Tournaments in International level and State level cricket tournament.

Courses Taught: Digital Communication, Wireless and Cellular Communication, Information & Theory Coding, Analog Circuits, Electronic Devices, Analog Electronics, Principles of Communication Systems, Satellite Communication, Basic Electronics, Digital Switching System, DSP algorithm & Architecture, Antennas & Wave Propagation, High Performance Computer Network, Computer Communication Network, Wireless and Mobile network

Publications/Patents:

International Journals: (SCIE Indexed)

- [1] A. K. Dwivedi, **N. K. Narayanaswamy**, S. K. Singh and V. Singh, "Taguchi-Neural Network Driven Optimization of Graphene Metamaterial Absorbers for Terahertz Applications," in **IEEE Transactions**, (2025) on Plasma Science, <https://doi.org/10.1109/TPS.2025.3582811> (H Index: 178, Q2, I.F 1.5)
- [2] **Nagesh K. N**, K. K Verma, A. K Dwivedi, V. Singh, M.Tolani, "Machine Learning Aided Tapered 4-Port MIMO Antenna for V2X Communications with Enhanced Gain and Isolation", **IEEE Access**, (2025). <https://doi.org/10.1109/ACCESS.2025.3543183> (H Index: 124, Q1, I.F 3.4)
- [3] **Nagesh K N**, T Y Sateesha, A.K Dwivedi, Vivek Singh, M. Tolani "Metasurface Absorber for Millimeter Waves: A Deep Learning-Optimized Approach For Enhancing The Isolation of Wideband Dual-Port MIMO Antennas", **Scientific Reports, Nature, Springer**, 14, 30199, (2024). <https://doi.org/10.1038/s41598-024-81854-5> (H Index: 315, Q1, I.F 3.8)
- [4] Anitha C, V. Singh, A.K Dwivedi, **Nagesh K.N** "Metasurface Inspired Printed Dual-Port MIMO Antenna System with LP to CP Conversion Features for Millimeter Wave n260 Band Applications", **Scientific Reports, Nature, Springer** 1 Springer 4, 24437, (2023). <https://doi.org/10.1038/s41598-024-75696-4> (H Index: 315, Q1, I.F 3.8)
- [5] Penmatsa, K.K.V., **Narayanaswamy, N.K.**, Dwivedi, A.K. "Quad Port MIMO Circularly Polarized Antenna for n77/n78 5G Coverage with Spatial and Polarization

- Diversity". **Wireless Personal Communication, Springer** 135, 619–638 (2024). (I.F 2.2) <https://doi.org/10.1007/s11277-024-11089-0> (*Corresponding author)
- [6] Harish Vankadhari, Ajay Kumar Dwivedi, Vivek Singh, Nagesh Kallollu Narayanaswamy," Design and investigation on circularly polarized tunable two port silicon ceramic-graphene based hybrid filtenna in THz frequency regime", **Optical and Quantum Electronics, Springer US**, 6,1-14,(2024). (I.F 2.9) <https://doi.org/10.1007/s11082-024-06443-2> (*Corresponding author).
- [7] A.K Dwivedi, Nagesh, K.N, K. Varma, S. Singh, A. Sharma, V. Singh, "Circularly Polarized printed dual port MIMO antenna with Polarization Diversity optimized by machine learning approach for 5G NR n77/n78 Frequency Band Applications", **Scientific Reports, Nature, Springer**, (2023). (I.F 4.6) <https://doi.org/10.1038/s41598-023-41302-2>
- [8] Nagesh K.N, K K Varma, B Kumar, R. K Singh, B. Mishra, D K Singh "4-Port MIMO antenna with novel isolator conducting structure for sub-1 GHz/sub-6 GHz and RF-energy harvesting applications " **Journal of Electromagnetic Waves and Applications, Taylor & Francis** (2023) (I.F 1.438) <https://doi.org/10.1080/09205071.2023.2224081>
- [9] Sharma, M., Addepalli, T., Nagesh, K.N., Anveshkumar, N. and Kumar, D., Design and Analysis of a Six-Element UWB-X Band MIMO Antenna for High-Speed IoT, Imaging, and Radar Applications. **IETE Journal of Research, Taylor and Francis** (2023) pp.1-16. <https://doi.org/10.1080/03772063.2023.2248935>
- [10] Nagesh K.N, M.Bhosle, K.Varma, A.K Dwivedi*, "Circularly Polarized Tunable Graphene-Patch over SiO₂ substrate for THz Applications", **Optical and Quantum Electronics, Springer** (2022).(I.F 2.794) <https://doi.org/10.1007/s11082-022-04000-3>.
- [11] Nagesh K.N, Nirupama MP, R. K Singh, B. Mishra "High-isolated, low correlation and wide frequency reconfigurable (2.1-4.2 GHz) MIMO antenna for cognitive radio applications", **Journal of Electromagnetic Waves and Applications, Taylor & Francis** (2022) (I.F 1.438) <https://doi.org/10.1080/09205071.2022.2158374>
- [12] Anitha C, V. Singh, A K Dwivedi, Nagesh K N, "Review: Metamaterial/Metasurface Applications in Antenna Domain", **Opto-Electronics Review** (2024), (H Index: 49, Q3, I.F 1.3) <https://doi.org/10.24425/opelre.2024.151692>
- [13] Nagesh K.N, R. Priyadarshini, Rani BA, N. Anjum, Jyothi S.K, A.K Dwivedi*, Design and Development of Ceramic based MIMO Filtenna with Circular Polarization Features", **Journal of Electronic Materials, Springer** (2022) (I.F 2.047) <https://doi.org/10.1007/s11664-022-09900-4>
- [14] K. Varma , Nagesh, K.N "Circularly Polarized printed dual port MIMO antenna with Polarization Diversity optimized by machine learning approach for 5G NR n77/n78 Frequency Band Applications", **Wireless Personal Communication Springer** (2023) (I.F 2.045) <https://doi.org/10.1007/s11277-023-10487-0> (*Corresponding author).
- [15] K. K Varma, Nagesh K.N "Design of Compact 2-Port Dual-Band Dual Polarized MIMO antenna for CBRS and WLAN Sub-6 GHz Applications " **International Journal of Communication Systems, Wiley** (2023) (I.F 2.047) <https://doi.org/10.1002/dac.5460> (*Corresponding author).
- [16] Abhimanyu Yadav, Nagesh Kallollu Narayanaswamy, N.K., Tiwari, M. *et al.* Two-Port Metasurface-Loaded Circularly Polarized Al₂O₃ Ceramic-Based Filtering Antenna for 2.5/2.6 GHz Band. *J. Electron. Mater.* **Journal of Electronic Materials Springer** (2023). (I.F 2.045) <https://doi.org/10.1007/s11664-023-10734-x>
- [17] Manish Sharma, Tathababu Addepalli, K. N. Nagesh, Nella Anveshkumar & Dheeraj Kumar (2023) Design and Analysis of a Six-Element UWB-X Band MIMO Antenna for High-Speed IoT, Imaging, and Radar Applications, **IETE Journal of Research, Taylor**

- and Francis** (2023) (I.F 1.877) <https://doi.org/10.1080/03772063.2023.2248935>
- [18] Manju Ramrao Bhosle, Nagesh K.N "SHO based Deep Residual network and hierarchical speech features for speech enhancement" **International Journal of Speech Technology**, **Springer** (2022) <https://doi.org/10.1007/s10772-022-09972-x>
- [19] Ashish Kumar, Ajay Kumar Dwivedi, K.N.Nagesh, Anand Sharma and Pinku Ranjan "Circularly polarised Dielectric Resonator based Two port Filtenna for Millimeter-Wave 5G Communication System" **IETE Technical Review**, **Taylor and francis** (2022) (I.F 2.22) <https://doi.org/10.1080/02564602.2022.2028588>
- [20] D.Sharma, R. Katiyar, A.K Dwivedi, Nagesh K.N, A. Sharma, P.Ranjan " Dielectric Resonator based Two Port Filtenna with Pattern and Space Diversity for 5G IoT Applications" **International Journal of Microwave and Wireless Technologies**, **Cambridge University Press** (2022) (I.F1.60) <https://doi.org/10.1017/S1759078722000150>.
- [21] A. Kumar, Nagesh. K.N, H. Venkatesh Kumar, B. Mishra, S. Azam Siddique, A.K Dwivedi, "High-isolated WiFi-2.4 GHz/LTE MIMO antenna for RF-energy harvesting applications", **International Journal of Electronics and Communications**, **Elsevier** (2021), (I.F 3.183) doi: <https://doi.org/10.1016/j.aee.2021.153964>.
- [22] A. Kumar, Shekhar, Nagesh K.N, and B. Mishra "UWB Multilayer Patch Antenna with EBG Structure for IEEE-C, X, Ku and K Band Applications", **Wireless Personal Communications**, Remote Controlled Reconfigurable Hexa-Band Antenna for RF-Energy Harvesting System. **Springer**(2021)(I.F 1.671) <https://doi.org/10.1007/s11277-021-08676-w>.
- [23] A. Sharma, A.K Dwivedi, Nagesh K.N, A. Gupta, D.K Tripathi "Broadband Dielectric Resonator Antenna with Dual-Frequency Circularly polarized response for WLAN and WiMAX Applications", **International Journal of Circuit Theory and Applications**, **Wiley** (2021) (I.F 2.038) <https://doi.org/10.1002/cta.3151>.
- [24] S.A Siddique, Nagesh K.N, H. Venkatesh Kumar, Chethana Gosal, Brijesh Mishra, "Remote Controlled Reconfigurable Hexa-Band Antenna for RF-Energy Harvesting Systems", **International Journal of Circuit Theory and Applications**, **Wiley** (2021) (I.F 2.038). <https://doi.org/10.1002/cta.3144>.
- [25] A. Kumar, A.K Dwivedi, Nagesh K.N, A. Sharma, P.Ranjan, "Circularly Polarized Dielectric Resonator based Two Port Filtenna for millimeter-wave 5G Communication System", **IETE Technical Review**, **Taylor & Francis** (2022) (I.F 2.2). <https://doi.org/10.1080/02564602.2022.2028588>
- [26] D.Sharma, R. Katiyar, A.K Dwivedi, Nagesh K.N, A. Sharma, P.Ranjan, "Dielectric Resonator based Two Port Filtenna with Pattern and Space Diversity for 5G IoT Applications", **International Journal of Microwave and Wireless Technologies**, **Cambridge University Press**, pp. 1-8 (2022) (I.F 1.064). <https://doi.org/10.1017/S1759078722000150>
- [27] A. Sharma, A.K Dwivedi, Nagesh K.N, Y.K Prajapati, D.K Tripathi "Ceramic Material based Optical Antenna for Multiband Photonics Applications", **Optical Engineering**. Vol. 61, issue no. 1, (2022) (I.F 1.098). <https://doi.org/10.1117/1.OE.61.1.017104>
- [28] Ajay Kumar Dwivedi, Nagesh K. N, H.Venkatesh Kumar, S. Singh, J. Mungara, A. Sharma and V. Singh, "Two Asymmetric Cylindrical Dielectric Resonator Loaded Dual Port MIMO Antenna for Wide Band Application with Circular Polarization Attributes", **International Journal of Communication Systems**, **Wiley** (2022) (I.F 2.047). <https://doi.org/10.1002/dac.5155>
- [29] S. Jadahav, Nagesh K.N "Probabilistic Based Optimal Node Localization in Wireless Sensor Networks " **International Journal of Computer Networks & Communications (IJCNC)**(2022) DOI: [10.5121/ijcnc.2022.14306](https://doi.org/10.5121/ijcnc.2022.14306) 91
- [30] G.R Reddy, A.K Dwivedi, V. Singh, K.N Nagesh, A. Sharma, "Metasurface Loaded Ceramic Based MIMO Antenna with High Isolation and Circular Polarization Features", **Microwave and Optical Technology Letters**., **Wiley**, (2022) (I.F 1.392).

- <https://doi.org/10.1007/s11664-022-10088-w>.
- [31] M.Yadav, A.K Dwivedi, **Nagesh K.N**, A. Pandey, V. Kumar, A. Sharma, “Mutual Coupling and RCS Reduction of MIMO Dielectric Resonator Antenna for S-band Applications”, **Waves in Random and Complex Media**, **Taylor & Francis** (2022) **(I.F.4.853)**. <https://doi.org/10.1080/17455030.2022.2139429>.
- [32] A. K Singh, A. K Dwivedi, **Nagesh K.N**, V. Singh, R.S Yadav. “Compact 4-port Planar MIMO Antenna with Enhanced Isolation for WLAN/WiMAX Applications”, **Sadhana Academy Proceedings in Engineering Sciences**, **Springer** (2021) **(I.F 1.188)**. <https://link.springer.com/article/10.1007/s12046-022-01916-0>.
- [33] Manju Ramrao Bhosle, **Nagesh K.N**, “SHO-based Deep Residual network and hierarchical speech features for speech enhancement” , **Journal of King Saud University - Engineering Sciences**, **Elsevier** (2021) **(I.F 3.819)** doi.org/10.1007/s10772-022-09972-x (JKSUES-D-21-00142)
- [34] S Jadhav, **Nagesh K N**, “Probabilistic Optimal Node Localization in wireless sensor networks”, **International journal of Computer Networks and Communications**, (2021) [DOI: 10.5121/ijcnc.2022.14306](https://doi.org/10.5121/ijcnc.2022.14306) 91
- [35] Manjunath M.N, A.K Dwivedi, **Nagesh K.N**, A. Sharma, V. Singh, “Circularly Polarized Parasitic Strips Loaded Broadband Printed Antenna for Sub-6 GHz (n77/n78/n79) Domain”, **IETE Journal of Research**, **Taylor & Francis** (2022).**(I.F1.877)** <https://doi.org/10.1080/03772063.2023.2183905>

Book Published

- [1] **Nagesh K.N**, Sanjeevkumar M Hatture, Rashmi P Karchi, Prathiba B N, “**Real Time Embedded Systems**” Scientific International Publishing House, **ISBN: 978-93-6132-133-7**, First Edition, 2024, www.sipinternationalpublishers.com

Scopus Indexed Book Chapters (**Springer**)

- [1] K. Srivastava, A.K Dwivedi, **Nagesh K.N**, A. Sharma, “Dual Band, Dual Port Dielectric Resonator Based MIMO Antenna with Bi-directional Pattern Diversity using PRS” **VLSI, Communication and Signal Processing, Lecture Notes in Electrical Engineering (LNEE)**, **Springer**, pp. 107 – 117, 2022. https://doi.org/10.1007/978-981-19-2631-0_10
- [2] A.K Singh, **A.K Dwivedi**, **Nagesh K.N**, V. Singh, R.S Yadav, “Modeling and Investigation of Novel Two-Port UWB- MIMO Antenna with Enhanced Isolation”, **VLSI, Communication and Signal Processing, Lecture Notes in Electrical Engineering (LNEE)**, **Springer**, pp. 535 – 543, 2022. https://doi.org/10.1007/978-981-19-2631-0_46
- [3] M. Sugur, Mallanna, Sreenivasa Thondagere, **Nagesh Kallollu Narayanaswamy**, and Ajay Kumar Dwivedi. "Design and analysis of four port MIMO antenna for n77 and MTI wireless edge 5G applications." In AIP Conference Proceedings, vol. 2915, no. 1. AIP Publishing, 2024. <https://doi.org/10.1063/5.0192776>

International **IEEE** Conferences

- [1] Pallavi Singh, **Nagesh K N**, Neerav Sharma, "Integrating Fuzzy Logic and Morphological Edge Detection for Enhanced UAV Orthomosaic Mapping" **IEEE** International Conference on Interdisciplinary Approaches in Technology and Management for Social Innovation (IATMSI) (2025)
- [2] Kashif M D, Bryan James Dsouza, **Nagesh K N**, "AskMe – A Customer Service Chatbot", 3rd **IEEE** International Conference on Electronics and Renewable Systems ICEARS 2025, Tamil Nadu, India (2025).
- [3] Jyothi, Purushottama L, **Nagesh K.N**, V. Singh, A.K Dwivedi, "Design and Analysis of Highly Directive Patch Antennas for CAS using Passive Radars at 5G Frequencies", 3rd **IEEE** International conference on Interdisciplinary Approaches in Technology and Management for Social Innovation, (IATMSI -2025), IIITM Gwalior, India (2025).
- [4] Jyothi, **Narayanaswamy, N.K.** and Neelakanteshwaralu, S.K., 2024, September, "Diagnostics of diabetes using a novel printed antenna", **American Institute of Physics(AIP) conference proceedings** (Vol. 3131, No.1, 2024).
- [5] Shashikiran, R., **Nagesh, K.N.** and Ravikiran, R., March. "A Low-Power Intra-Cluster Routing Protocol Optimized for Object Recognition and Tracing Framework Within WSNs". in 2024 IEEE International Conference on Contemporary Computing and Communications (InC4) (Vol. 1, pp. 1-6). **IEEE**, 2024.
- [6] Krishna Kanth Varma P, **Nagesh K. N**, "Compact two-port MIMO antenna supporting the Sub-6 GHz 5G spectrum band of n77-n78", 2022 International Conference on Computer Communication and Informatics **IEEE** (ICCCI), Jan. 25 – 27, 2022, Coimbatore, India. doi: 10.1109/ICCCI54379.2022.9740767.
- [7] Krishna Kanth Varma P, **Nagesh K. N**, "Proximity Coupled Planar MIMO Antenna for LTE-46/LTE-U Bands of Sub-6 GHz" 2nd International Conference on Emerging Global Trends in Engineering and Technology, Lecture Notes in Electrical Engineering (LNEE), **Springer**, 2022.
- [8] Harish V, **Nagesh K.N**, "Design of Dual Port Single Al₂O₃ Ceramic-based MIMO antenna for WLAN application", International Conference on Minerals, Materials and Manufacturing Methods (ICMMM-2022), **American Institute of Physics (AIP)** conference proceedings, 2022 (Under Production).
- [9] S. Jadhav and **K. N. Nagesh**, "Impairment Impact on the Wireless Communication System," 2021 2nd Global Conference for Advancement in Technology (GCAT) **IEEE**, 2021, pp. 1-5, doi: 10.1109/GCAT52182.2021.9587620.
- [10] **Nagesh. K.N** and M. R. Bhosle, "Speech Signal Enhancement using ASSA Approach with Time-Frequency Filter," 2019 **IEEE** Global Conference for Advancement in Technology (GCAT) **2019 IEEE**, BANGALURU, India, 2019, pp. 1-6.
- [11] **Nagesh K.N**, S. Jadhav and, "Isolated Node Localization Probability in Wireless Ad-Hoc Networks," **2018 IEEE** Second International Conference on Advances in Electronics, Computers and Communications (ICAECC), Bangalore, 2018
- [12] **Nagesh K.N**, T. Y. Satheesha, D. Satyanarayana, M. N. Giriprasad and "Detection of melanoma using distinct features," **2016 3rd MEC IEEE** International Conference on Big Data and Smart City (ICBDSC), Muscat, 2016, pp. 1-6.
- [13] P. Sendamarai, M. N. G. Prasad, S. M. Prabhu and **Nagesh K.N**, "A CDF based Lifting scheme for the satellite image compression," **2016 3rd MEC IEEE** International Conference on Big Data and Smart City (ICBDSC), Muscat, 2016, pp. 1-4.
- [14] **Nagesh, K.N.**; Ramiah, Chandrashekar; Prabhu, S Madhava, "Statistical analysis for mean communication range under Nakagami fading in wireless ad hoc networks," in Advanced Communication Technology (ICACT), **IEEE 2015** 17th International Conference on, vol., no., pp.300-303, 1-3 July 2015.

	[15] Nagesh, K.N; Satyanarayana, D; Prabhu, S Madhava; Prasad, M.N.Giri, "Statistical analysis of MIMO scheme under Nakagami fading channels," Advanced Communication Technology (ICACT), 2014 IEEE 16th International Conference on , vol., no., pp.255,259, 16-19 Feb. 2014 [16] Nagesh, K.N; Satyanarayana, D.; Poojary, N.; Ramiah, C.; Prasad, M.N.G., "Probability analysis of isolated node in wireless ad-hoc sensor network with border effect," Advanced Communication Technology (ICACT), 2013 IEEE 15th International Conference on, vol., no., pp.784,788, 27-30 Jan. 2013 [17] Nagesh K.N; Satyanarayana, D.; Poojary, N.; Ramiah, C., "An analytical expression for k-connectivity probability of wireless ad hoc networks in presence of channel randomness," Wireless Information Technology and Systems (ICWITS), 2012 IEEE International Conference on, vol., no., pp.1,4, 11-16 Nov. 2012 Elsevier international conference [1] Nagesh K.N, Madhava Prabhu Sa, Chandrashekar Ra, Zahir Khalfan Saif Al-Kemyania, "Automatic Whiteboard Eraser" "The 2nd International Conference on Applied Information and Communications Technology" – (ICAICT) Elsevier, vol.,pp. , 2014. [2] T Y Satheesha, Dr. D Sathyanarayana, Dr. M N Giriprasada,, Nagesh K.N "Early Detection of Insitu Melanoma Using ABCD Rules" "The 2nd International Conference on Applied Information and Communications Technology" – (ICAICT) Elsevier, vol.,pp. 589-595, 2014.
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INTERNATIONAL PATENTS GRANT & INDIAN PATENTDESIGN GRANTS	[1] Australian Patent granted for "Thermal Effect Powered Electric Motor to Minimize the Power Consumption in the Electric Vehicle" (App. No. 2021100914, Granted on 14.04.2021). [2] Australian Patent granted for "Decentralized Data Storage and Processing Method for Automatic Wireless Network Authentication in an IoT System" (App. No. 2021103108, Granted on 07.07.2021). [3] Australian Patent filed for "Intelligent System & Method for Radio Link Monitoring & Controlling in a Wireless Communication System Using IoT Technology" (App. No. 2021106500, Filed on 29.08.2021). [4] German Patent filed for "A Circularly Polarized Two Port MIMO Cylindrical Dielectric Resonator Antenna Device for 5G Applications" (App. No. 2021093017400900DE, Filed on 15.10.2021). [5] Australian Patent granted for "Cloud Key SaaS Autonomous AIOT Control System and Method Thereof" (App. No. 2021106451, Granted on 08.12.2022).
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| | <p>[6] Australian Patent granted for “Thermal Effect Powered Electric Motor to Minimize the Power Consumption in the Electric Vehicle” (App. No. 2021100914, Granted on 14.04.2021).</p> <p>[7] Australian Patent granted for “Decentralized Data Storage and Processing Method for Automatic Wireless Network Authentication in an IoT System” (App. No. 2021103108, Granted on 07.07.2021).</p> <p>[8] Australian Patent filed for “Intelligent System & Method for Radio Link Monitoring & Controlling in a Wireless Communication System Using IoT Technology” (App. No. 2021106500, Filed on 29.08.2021).</p> <p>[9] German Patent filed for “A Circularly Polarized Two Port MIMO Cylindrical Dielectric Resonator Antenna Device for 5G Applications” (App. No. 2021093017400900DE, Filed on 15.10.2021).</p> <p>[10] Australian Patent granted for “Cloud Key SaaS Autonomous AIOT Control System and Method Thereof” (App. No. 2021106451, Granted on 08.12.2022).</p> |
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**NATION
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PATENT
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- [1] Published patent on optimizing agricultural practices using machine learning (App No: 202441031961).
- [2] Published patent on IoT-powered intravenous saline monitoring system for patient safety (App No: 202441044905).
- [3] Published patent on underwater image enhancement using color balancing and image fusion (App No: 202441044731).
- [4] Published patent on machine learning-based plant leaf disease detection system (App No: 202441044725).
- [5] Published patent on IoT-based dipstick device for engine oil level and impurity monitoring (App No: 202441044746).
- [6] Published patent on automated solar grass cutter design and system (App No: 202441044739).
- [7] Published patent on vehicle number plate and face recognition system using Raspberry Pi (App No: 202441044902).
- [8] Published patent on IoT-based smart stick for aiding visually impaired individuals (App No: 202341041024).
- [9] Published patent on Arduino-based digital notice board system (App No: 202341036257).
- [10] Published patent on IoT-based intelligent control system for smart buildings (App No: 202341040718).
- [11] Published patent on IoT-based soldier health monitoring and tracking system (App No: 202341041017).
- [12] Published patent on sensor-based rider safety system for harsh weather conditions (App No: 202341039193).
- [13] Published patent on IoT-based smart cradle system for infants (App No: 202341039190).
- [14] Published patent on electric buggy powered by lithium-ion battery (App No: 202341041462).
- [15] Published patent on remote patient monitoring system using IoT (App No: 202341042874).
- [16] Published patent on IoT gateway for borewell control and monitoring (App No: 202341041552).
- [17] Published patent on Arduino-based automatic wireless siren system (App No: 202341042964).

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| [18] | Published patent on solar-powered multipurpose agricultural robot with Android control (App No: 202241042986). |
| [19] | Published patent on camouflage-based multifunctional military robot (App No: 202241039678). |
| [20] | Published patent on piezoelectric-based footstep power generation system (App No: 202241039379). |
| [21] | Published patent on smart traffic control system using embedded technologies (App No: 202241037224). |
| [22] | Published patent on Raspberry Pi-based smart care unit for COVID-19 patients (App No: 202241037227). |
| [23] | Published patent on Braille reading system for visually challenged individuals (App No: 202241024408). |
| [24] | Published patent on Android-based two-way video monitoring system (App No: 202241024413). |
| [25] | Published patent on patient alert and monitoring system for immobilized individuals (App No: 202241003873). |
| [26] | Published patent on MoS ₂ nanostructure-based sensor development and fabrication (App No: 202241024412). |
| [27] | Published patent on advanced two-way video monitoring using Android and Java (App No: 202241024413). |
| [28] | Published patent on machine learning-based soil fertility analysis and crop selection (App No: 202541010676 A). |
| [29] | Published patent on accident detection and reporting system using Arduino Uno (App No: 202541002401 A). |
| [30] | Published patent on automatic plant watering system using Arduino (App No: 202541003286 A). |
| [31] | Published patent on IoT-based air quality monitoring using Arduino Uno (App No: 202541003287 A). |
| [32] | Published patent on Arduino Uno-based smart park assist system (App No: 202541005426 A). |
| [33] | Published patent on multi-exposure fusion strategy for low-light image enhancement (App No: 202541004641 A). |
| [34] | Published patent on smart blind stick with obstacle detection for the visually impaired (App No: 202541006468 A). |
| [35] | Published patent on smart posture correction alert system using ergonomic design (App No: 202541001682 A). |

	[36] Published patent on GSM and IoT-based smart agriculture system (App No: 202541005425 A). [37] Published patent on smart smoke detection and ventilation system for smart homes (App No: 202541005466 A). [38] Published patent on Arduino-based smart irrigation system (App No: 202541004644 A). [39] Published patent on smart car parking system using Arduino Uno microcontroller (App No: 202541004638 A). [40] Published patent on cyberbully detection system on social networks using machine learning (App No: 202541004623 A). [41] Published patent on another automatic plant watering system using smart methods (App No: 202541005188 A). [42] Published patent on IoT-based hydroponics system for sustainable agriculture (App No: 202341041022 A). [43] Published patent on multifunction syllogistic logic unit using folding tree and clock gating (App No: 202121011465 A). [44] Published patent on simulation and performance evaluation of digital modems (App No: 202021049607 A). [45] Published patent on attribute-based device discovery architecture for IoT environments (App No: 202021012029 A).
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Research and Consultancy:

- [1] Received ₹90,00,000 funding from AICTE, Delhi in 2024 for establishing the AICTE IDEA Lab as Coordinator.
- [2] Secured ₹8,00,000 from AICTE, Delhi for the "Semiconductor and Electronics System Design LAB (SESDDL)" project proposed in Dec 2018 and completed in Aug 2021.
- [3] Received ₹3,84,933 from AICTE, New Delhi for organizing a One-week STTP on “Applications of NI LabVIEW,” completed in August 2021.
- [4] Received ₹1,85,000 from NCET for the “Development of Li-ion Battery based Electric Buggy,” completed in September 2022.
- [5] Completed the “Development of Solar Powered Li-ion Battery based Electric Buggy” project with ₹3,70,000 funding from NCET during 2022–2023.