CURRICULUM VITAE • ACADEMIC PROFILE

Dr. Deepak K. Naik

Assistant Professor

P.G. Department of Electronic Science · Berhampur University · Brahmapur · Odisha · India

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Academic Profile

Dr. Deepak K. Naik (Member, IEEE) is an Assistant Professor in the Department of Electronic Science at Berhampur University, Odisha, India, where he has been serving since 2016. He received the M.Sc. degree in Electronic Science from Berhampur University in 2007, the M.Tech. degree in Electronic Communication Engineering from C. V. Raman College of Engineering, Odisha, in 2013, and the Ph.D. degree in Electronic Science from Berhampur University in 2024. He qualified the UGC-NET with Junior Research Fellowship (JRF) in 2014.

His research focuses on planar and metasurface antenna technologies, broadband circularly polarized antennas, and characteristic mode analysis. His research interests also include evolutionary optimization techniques, electromagnetic analysis, and modal engineering of antenna structures for improving bandwidth, polarization, and radiation characteristics.

Research Interests: Microstrip Patch Antenna Design, Metasurface, Circularly Polarized Broadband Antennas, CMA Technique

Education

Ph.D. 2024

Berhampur University

M.Tech. 2014

Electronic Communication Engineering · C. V. Raman Global University

MSc 2007

Berhampur University

B.Sc. 2005

Physics · D. D. College, Keonjhar

+2 2002

PCMB · G. M. College, Sambalpur

10th 2000

D. N. High School, Anandpur

Academic & Professional Experience

Assistant Professor (Stage-III) Feb 2026 – Present

Berhampur University

Web Administrator Sep 2025 – Present

Berhampur University

To mainatian Regular Website activities

Assistant Professor (Stage-II) Feb 2021 – Feb 2026

Berhampur University · Electronic Science

Assistant Professor (Stage-I) Feb 2016 – Feb 2021

Berhampur University · Electronic Science · Berhampur

Lecture Aug 2007 – Dec 2016

C. V. Raman Polytechnic, Bhubaneswar · ETC · Bhubaneswar

Publications

Journal Articles

2026

[1] B. Raut, B. K. Santi, R. Swain, D. C. Panda, and D. K. Naik, "A single-layer parasitic metasurface for broadband circular polarization," *AEU - International Journal of Electronics and Communications*, vol. 218, pp. 156683, Oct., 2026, doi: 10.1016/j.aeue.2026.156683.

[2] S. Pani, B. Raut, B. K. Santi, D. C. Panda, D. K. Naik, and R. Swain, "In-band controlled circularly polarized wideband metasurface antenna using characteristic mode analysis," *AEU - International Journal of Electronics and Communications*, vol. 212, no. 156342, Jul., 2026, doi: 10.1016/j.aeue.2026.156342.

[3] D. C. Panda, B. Raut, B. K. Santi, A. K. Sahu, D. K. Naik, and R. Swain, "Design of a circular polarized hexagonal patch antenna using coupled characteristic modes for sub-6 GHz applications," *Journal of Electromagnetic Waves and Applications*, 2026, doi: 10.1080/09205071.2025.2562126.

2025

[4] B. Raut, B. K. Santi, R. Swain, D. C. Panda, and D. K. Naik, "Characteristic Mode Inspired Compact Broadband Circularly Polarized Non-Uniform Metasurface Antenna for Sub-7 GHz Applications," *AEU - International Journal of Electronics and Communications*, vol. 200, Art. no. 155939, 2025, doi: 10.1016/j.aeue.2025.155939.

[5] D. K. Naik, D. C. Panda, R. Swain, A. Muduli, and A. Pal, "Characteristic Mode Inspired Broadband Circularly Polarized Metasurface Antenna with Triple-Mode Excitation for Sub-6 GHz Applications," *Scientific Reports*, vol. 15, Art. no. 33965, 2025, doi: 10.1038/s41598-025-10155-2.

[6] D. C. Panda, B. K. Santi, B. Raut, D. K. Naik, and R. Swain, "A Novel Asymmetric Spoof Surface Plasmon Polariton Transmission Line for High Gain Endfire Radiation Using Phase Reversal Condition," *Progress In Electromagnetics Research C*, vol. 154, pp. 97-103, 2025, doi: 10.2528/PIERC24120604.

[7] D. K. Naik, D. Charan Panda, R. Swain, A. Muduli, and S. Nanda, "Pac-Man-Shaped Patch-Driven Broadband Circularly Polarized Metasurface Antenna With CMA-Based Quadruple-Mode Excitation," *IEEE Access*, vol. 13, pp. 13644-13654, 2025, doi: 10.1109/ACCESS.2025.3526682.

2024

[8] S. Pani, D. C. Panda, D. K. Naik, and R. Swain, "A Shorting Post Loaded Symmetric Non-Uniform Metasurface Antenna for Broadband Circular Polarization," *AEU - International Journal of Electronics and Communications*, vol. 185, Art. no. 155416, 2024, doi: 10.1016/j.aeue.2024.155416.

2023

[9] S. Patra, "Review on Different Shaped Graphene Nanoribbon Based Nano Interconnect for Next Generation Integrated Circuits," *Research Journal of Berhampur University*, vol. 6, pp. 2-11, 2023.

[10] D. K. Naik, R. Swain, D. C. Panda, and R. K. Mishra, "CMA Approach for a DGS-Based Wideband Circular Patch Antenna With Low Cross Polarization," *IEEE Antennas and Wireless Propagation Letters*, vol. 22, no. 3, pp. 586-590, 2023, doi: 10.1109/LAWP.2022.3219084.

2022

[11] D. K. Naik, A. K. Sahu, R. K. Parida, P. Raiguru, D. C. Panda, and R. K. Mishra, "Design of a Broadband U-Slot Loaded E-Shaped Patch Antenna Using Characteristic Mode Analysis," *AEU - International Journal of Electronics and Communications*, vol. 154, Art. no. 154310, 2022, doi: 10.1016/j.aeue.2022.154310.

[12] R. K. Parida, A. K. Sahu, D. K. Naik, P. Raiguru, D. C. Panda, and R. K. Mishra, "Compact Reconfigurable Antenna System for Spectrum Interweaved Cognitive Radio," *International Journal of RF and Microwave Computer-Aided Engineering*, vol. 32, no. 7, 2022, doi: 10.1002/mmce.23183.

2020

[13] R. Swain, D. K. Naik, and A. K. Panda, "Low-Loss Ultra-Wideband Beam Switching Metasurface Antenna in X-Band," *IET Microwaves, Antennas & Propagation*, vol. 14, no. 11, pp. 1216-1221, 2020, doi: 10.1049/iet-map.2019.0994.

Conference Papers

2025

[14] B. Raut, B. K. Santi, D. K. Naik, and D. C. Panda, "A Novel Spiral Radiator-Based Quad-Port MIMO CP Antenna Using Characteristic Mode Analysis (CMA) for Wi-Fi 6E Applications," in *Proc. 2025 IEEE Microwaves, Antennas, and Propagation Conference (MAPCON)*, 2025, doi: 10.1109/MAPCON65020.2025.11426676.

[15] B. K. Santi, B. Raut, D. C. Panda, and D. K. Naik, "A Planar Quasi-Yagi Antenna with Enhanced Bandwidth for 5G NR FR2 mmWave Coverage," in *Proc. 2025 IEEE Microwaves, Antennas, and Propagation Conference (MAPCON)*, 2025, doi: 10.1109/MAPCON65020.2025.11426678.

[16] P. Panigrahy, D. K. Naik, and D. C. Panda, "CF-DAS Based Microwave Imaging with a Flexible SSPP Antenna," in *Proc. 2025 IEEE Microwaves, Antennas, and Propagation Conference (MAPCON)*, 2025, doi: 10.1109/MAPCON65020.2025.11426582.

[17] P. Panigrahy, D. K. Naik, and D. C. Panda, "Diamond-Slot Modulated SSPP Leaky-Wave Antenna," in *Proc. 2025 5th IEEE International Conference on Applied Electromagnetics, Signal Processing, & Communication (AESPC)*, 2025, doi: 10.1109/AESPC67542.2025.11326866.

2024

[18] B. K. Santi, D. C. Panda, B. Raut, and D. K. Naik, "A Wide-Angle Scanning Leaky-Wave Antenna Based on SSPP With Stable Gain," in *Proc. 2024 IEEE Calcutta Conference (CALCON)*, 2024, doi: 10.1109/CALCON63337.2024.10914096.

[19] G. S. Patnaik, D. C. Panda, and D. K. Naik, "A UWB MIMO Antenna Using h-Shaped Fractals," in *Proc. 2024 IEEE 4th International Conference on Applied Electromagnetics, Signal Processing, & Communication (AESPC)*, 2024, doi: 10.1109/AESPC63931.2024.10872175.

[20] N. Sahoo, S. Patra, A. K. Sahu, M. Mishra, and D. K. Naik, “Modulation of I-V Characteristics in U-Shaped Armchair Graphene Nanoribbon-Based Tunnel Diode,” in *Proc. 2024 IEEE International Conference of Electron Devices Society Kolkata Chapter (EDKCON)*, 2024, doi: 10.1109/EDKCON62339.2024.10870627.

2023

[21] D. K. Naik, S. Pani, A. K. Sahu, and D. C. Panda, “A New Approach for CAD Modelling of Resonant Frequency of Microstrip Antenna Using Multigene Genetic Programming,” in *Proc. Journal of Physics: Conference Series*, vol. 2471, Art. no. 012006, 2023, doi: 10.1088/1742-6596/2471/1/012006.

2021

[22] D. K. Naik, A. K. Sahu, R. K. Parida, D. C. Panda, and R. K. Mishra, “Knowledge-Embedded MGGP Model for Resonant Frequency of Microstrip Antenna,” in *Proc. 2021 IEEE 2nd International Conference on Applied Electromagnetics, Signal Processing, & Communication (AESPC)*, 2021, doi: 10.1109/AESPC52704.2021.9708521.

[23] S. Pani, A. K. Sahu, D. K. Naik, R. K. Parida, and D. C. Panda, “Metasurface for Independent Control of Reflection Amplitude,” in *Proc. 2021 IEEE 2nd International Conference on Applied Electromagnetics, Signal Processing, & Communication (AESPC)*, 2021, doi: 10.1109/AESPC52704.2021.9708485.

[24] A. K. Sahu, R. K. Parida, D. K. Naik, S. Pani, and D. C. Panda, “Ku-Band Tunable Bandstop Filter Using RF MEMS,” in *Proc. 2021 IEEE 2nd International Conference on Applied Electromagnetics, Signal Processing, & Communication (AESPC)*, 2021, doi: 10.1109/AESPC52704.2021.9708463.

2020

[25] A. K. Sahu, R. K. Parida, R. K. Mishra, D. K. Naik, and D. C. Panda, “Extraction of DMTL Equivalent Circuit Parameters Using SMPSO,” in *Proc. 2020 IEEE International Women in Engineering Conference on Electrical and Computer Engineering (WIECON-ECE)*, 2020, doi: 10.1109/WIECON-ECE52138.2020.9397931.

2019

[26] R. K. Parida, A. Kumar Sahu, D. K. Naik, N. K. Sahoo, D. C. Panda, and A. Muduli, “A UWB and Multiband Reconfigurable Antenna for Application in Cognitive Radio,” in *Proc. 2019 IEEE Indian Conference on Antennas and Propagation (InCAP)*, 2019, doi: 10.1109/INCAP47789.2019.9134475.

2017

[27] D. C. Panda, A. K. Sahu, R. K. Mishra, D. K. Naik, and S. K. Dash, “MEMS Distributed Transmission Line Discontinuity Parameter Extraction Using QUCS Equation Defined Devices,” in *Proc. 2017 IEEE Applied Electromagnetics Conference (AEMC)*, 2017, doi: 10.1109/AEMC.2017.8325740.

2014

[28] D. K. Naik and D. K. Rout, “Outdoor Image Enhancement: Increasing Visibility Under Extreme Haze and Lighting Condition,” in *Proc. 2014 IEEE International Advance Computing Conference (IACC)*, 2014, doi: 10.1109/IAdCC.2014.6779476.

Book Chapters

2026

[29] D. K. Nayak, A. Muduli, D. K. Naik, N. Mukherjee, “Design and Evaluation of an RF Energy Harvester for Low Power Applications Operating in the 2.4 GHz (Wi-Fi) Frequency Band,” in *Emerging Trends in Smart Computing, Communication and Automation*, CRC Press, Sep., 2026.

Patents

Wireless Smart Meter System

Dr. Deepak K. Naik and et.al

Indian Patent · Granted · India

Research Projects

Design of a low-cost circularly polarized metasurface antenna for 5G/6G WiFi access points required in rural and semiurban areas 2025

DST, Govt. of Odisha · PI

Design of low-cost metasurface-based circularly polarized patch antennas for WiFi and 5G communication in rural areas 2024

Berhampur University · PI

Awards & Recognition

Publication in High Impact Factor Journal 2026

Berhampur University

Award for publication with I.F. (Faculty) for the year 2025, on the occasion of 60th Foundation Day, 2026, Berhampur University

Outstanding Innovation Award - 2025 2026

Berhampur University

Award for outstanding innovation in Science for the year 2025, on the occasion of 60th Foundation Day, 2026, Berhampur University

Best Poster Award 2025

Berhampur University

Best Poster Award (1st Position) in Physical Science at Odisha Research Conclave - 2025

Research Supervision

Subham Pradhan Completed

PhD · Design of Parasitic Metasurface for High-Purity Circular Polarization

Pujarani Mahanta Completed

PhD · Thermal Alert System for Wildlife & Wildfire

Nityananda Singh Completed

PhD · DIP-Point: Digital Image Processing Pointing System

Siba Behera Completed

PhD · Massive MIMO for Next-Generation Wireless Network: A Review

Gyanaranjan Swain Completed

PhD · Scalability and Innovation Gigantic MIMO System for 6G Communication

Guruprasad Pradhan — Completed

PhD · Recent Advances in 6G Technology

Baisali Patra — Completed

MSc · Metamaterial based biosensor for genome detection in THz domain

Pritee Panigrahy — Ongoing

PhD

Bikash K. Santi — Ongoing

PhD · RCS Computation

B. Kirtipratyush Patnaik — Ongoing

PhD · Graphene Nano Ribon

Gauri S. Patnaik — Ongoing

PhD · Compact MIMO Antennas

Biku Raut — Ongoing

PhD · Broadband Circularly Polarized Metasurface Antennas

Amit Amartyaranjan Das — Completed

MSc · Mutual Coupling Reduction in Two-Port Circular Patch MIMO Antenna

Bijayalaxmi Sahoo — Completed

MSc · Broadband Low-RCS Linearly Polarized Antenna Realized by Non-uniform Metasurface

Biku Raut — Completed

MSc · Design and Optimization of a Single-Layer Metasurface for Wideband CP Antenna Applications

Girija Nandini Behera — Completed

MSc · Dual Band Circularly Polarized Patch Antenna with Asymmetric Metasurface

Subham Pattanaik — Completed

MSc · Image Segmentation Using Recurrent Neural Network

Soubhagya Ranjan Behera — Completed

MSc · Image Segmentation using Convolutional Neural Network

Soumyaprava Panigrahi — Completed

MSc · A Review on Optimization Technique: Past, Present, and Future

Dibyabhanjani Sasmal — Completed

MSc · Study of Mutual Coupling Reduction using MIMO Technology

Jeevan Kumar Yadav — Completed

MSc · Review on Mutual Coupling Reduction Technique for MIMO Antennas

Alisha Rani Panda — Completed

MSc · Design of Dual Band Flexible Antenna (U-Shaped) for WLAN Applications using cst studio suite

G. Pandab Reddy — Completed

MSc · A Multiband Patch Antenna with C-Shaped Parasitic Strip

K. S. Ankita — Completed

MSc · Analysis and Optimization of Circular Polarized Patch using Characteristic Mode Analysis

M. Tapaswini — Completed

MSc · Design of Simple Multiband Antenna with a Parasitic C-Shaped Strip

Mrutyunjaya Padhy — Completed

MSc · A Triangular Microstrip Patch Antenna using Computer Simulation Technology (CST)

Rajesh Kumar Sahu — Completed

MSc · A Triangular Microstrip Patch Antenna using Computer Simulation Technology (CST)

Trayolaxmi Panda — Completed

MSc · TBA

Akash Kumar Pradhan — Completed

MSc · TBA

Anshuman Dash — Completed

MSc · TBA

Rakesh Kumar Jena — Completed

MSc · TBA

Saumya Ranjan Jena — Completed

MSc · TBA

Susmita Pattanaik — Completed

MSc · TBA

Brata Sundar Panda — Completed

MSc · Detecting Handwriting using RNN

Manorama Sabar — Completed

MSc · Software Defined Radio (SDR)

Rakesh Kumar Digal — Completed

MSc · Differentiate Cat and Dog using CNN

Silpa Shu — Completed

MSc · Software Defined Radio (SDR)

Babul Naik — Completed

MSc · PID Control Line Follower Robot

Ramakrishna Mahapatra — Completed

MSc · PID Control Line Follower Robot

Bandana Mohapatra — Completed

MSc · Blind Stick using Arduino Nano

Bhandi Sunita — Completed

MSc · Home Automation using Arduino UNO

Jagdish Nayak Completed

MSc · Fruit Identification and Detection using Segmentation Technique for Machine Level Intelligence using MATLAB

Sandip Kumar Behera Completed

MSc · Design of OFDM Transmitter and Receiver System in Mobile Communication by using SIMULINK

Deepali Jena Completed

MSc · Implementation of ALU in VHDL Code using FPGA SPARTAN-6

Rutuparnna Manasingh Completed

MSc · Underwater Image Enhancement via Channel Prior and Histogram Equalization using MATLAB

Sucheta Hota Completed

MSc · Attendance Management System using Android

Professional Service

Reviewer 2025

Professional Service · Springer Nature · Scientific Reports