

Dr. Deepak K. Naik

Assistant Professor

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

deepaknaikbbsr@gmail.com | 07008309353 | [Website](#) | [Google Scholar](#) | [ORCID](#)



Academic Profile

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	
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] 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](https://doi.org/10.1016/j.aeue.2026.156342).
- [2] 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](https://doi.org/10.1080/09205071.2025.2562126).

2025

- [3] 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](https://doi.org/10.1016/j.aeue.2025.155939).
- [4] 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](https://doi.org/10.1038/s41598-025-10155-2).
- [5] 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](https://doi.org/10.2528/PIERC24120604).
- [6] 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](https://doi.org/10.1109/ACCESS.2025.3526682).

2024

- [7] 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](https://doi.org/10.1016/j.aeue.2024.155416).

2023

- [8] S. Patra, et al, "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.
- [9] 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](https://doi.org/10.1109/LAWP.2022.3219084).

2022

- [10] 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](https://doi.org/10.1016/j.aeue.2022.154310).
- [11] 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](https://doi.org/10.1002/mmce.23183).

2020

- [12] 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](https://doi.org/10.1049/iet-map.2019.0994).

Conference Papers

2025

- [13] 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](https://doi.org/10.1109/MAPCON65020.2025.11426676).
- [14] 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](https://doi.org/10.1109/MAPCON65020.2025.11426678).
- [15] 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](https://doi.org/10.1109/MAPCON65020.2025.11426582).
- [16] 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](https://doi.org/10.1109/AESPC67542.2025.11326866).

2024

- [17] 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](https://doi.org/10.1109/CALCON63337.2024.10914096).
- [18] 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](https://doi.org/10.1109/AESPC63931.2024.10872175).
- [19] 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](https://doi.org/10.1109/EDKCON62339.2024.10870627).

2023

- [20] 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](https://doi.org/10.1088/1742-6596/2471/1/012006).

2021

- [21] 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](https://doi.org/10.1109/AESPC52704.2021.9708521).
- [22] 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](https://doi.org/10.1109/AESPC52704.2021.9708485).
- [23] 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](https://doi.org/10.1109/AESPC52704.2021.9708463).

2020

- [24] A. K. Sahu, R. K. Parida, R. K. Mishra, D. K. Naik, and D. C. Panda, "Extraction of DMTL Equivalent Circuit Parameters Using SMP SO," 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

- [25] 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

- [26] 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

- [27] 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.

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

Outstanding Innovation Award

2026

Berhampur

Best Poster Award

2025

Research Supervision

Gauri Patnaik

Ongoing

PhD

Professional Service

Reviewer

2025

Professional Service · Springer Nature · Scientific Reports

Academic Engagements

CMA Based Antenna Design

2026

Invited Talk · Resource Person