

Curriculum Vitae

Dr. Narendra Nath Pathak

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OBJECTIVE:

Keen to work for a highly growth oriented organization in the field of engineering where my **administrative skills, superb teaching methodology, very good academic achievements, and research knowledge** can be maximised for professional benefit .

Professional Qualifications:

- **Ph.D.** (Electronics & Communication Engineering), from **NIT, Durgapur** in June 2011.
(Under the supervision of Prof. G.K. Mahanti, Professor of Electronics & Communication Engineering department, NIT Durgapur).
Dissertation: "SYNTHESIS OF THINNED ARRAY ANTENNA USING SOFT COMPUTING TECHNIQUES".
- **M. Tech.** (Electronics & Communication Engineering) from **Jadavpur University, Kolkata** 2008, **CGPA 8.4**
Dissertation: "Antenna Array design using Particle Swarm Optimization".
Specialization: Intelligent Automation & Robotics
- **B.E** (Electronics & Communication Engineering) from **Gulbarga University, Karnataka**, 1994 (**62.88%**).

Scholarship:

- Scholarship holder of West Bengal Board of Secondary Education in class VIII standard and class X standard.

Publications

Journal Papers:

- G.K.Mahanti, **N.Pathak** and P.Mahanti, "Synthesis of Thinned Linear Antenna Arrays with Fixed Sidelobe Level using Real-Coded Genetic Algorithm," *Progress In Electromagnetics Research*, MIT, USA, PIER 75, pp.319–328, **2007**. Doi: 10.2528/PIER07061304.
- **N.Pathak**, G.K.Mahanti, and T.K.Sinha Mahapatra, "Genetic Algorithms For Design of Discrete Phase-Only Reconfigurable Array Antennas with Fixed Dynamic Range Ratio," *International Journal of Infrared and Millimeter Waves*, Springer, vol.28, no.11, pp.953-960, **Nov.2007**.
- **N.Pathak**, P. Nanda and G. K. Mahanti, "Synthesis of Thinned Multiple Concentric Circular Ring Array Antennas using Particle Swarm Optimization," *Journal of Infrared, Millimeter and Terahertz Waves*, Springer, vol.30, no.7, pp. 709–716, **April 2009**.

- **N.Pathak**, G. K. Mahanti, S. K. Singh, J. K. Mishra and A. Chakraborty, “Synthesis of Thinned Planar Circular Array Antennas using Modified Particle Swarm Optimization,” *Progress In Electromagnetics Research Letters*, MIT, USA, PIERL 12, pp.87–97, **2009**.
- A.Chatterjee, G.K.Mahanti and **N.Pathak**, “Comparative Performance of Gravitational Search Algorithm and Modified Particle Swarm Optimization Algorithm for Synthesis of Thinned Scanned Concentric Ring Array Antenna,” *Progress In Electromagnetics Research B*, MIT, USA, PIER B, vol.25, pp.331-348, **2010**.
- **N.Pathak**, Banani Basu and G.K.Mahanti, “Combination of inverse fast fourier transform and modified particle swarm optimization for synthesis of thinned mutually coupled linear array of parallel half- wave length dipole antennas,” *Progress In Electromagnetics Research M*, Vol. 16, 105-115, **2011**.
- S Chakraborty, M Chakraborty, C Banerjee, S Samanta, **NN Pathak** , “Design and Analysis of Transition of Wide Band to Multiband CPW fed Hexagonal Microstrip Antenna,” *International Journal of Emerging Trend in Engineering and Basic Sciences (IJEES)*ISSN (Online)2349-6967 Volume 2 , Issue 1(**Jan-Feb 2015**), PP 743-748.
- A Chatterjee, GK Mahanti, **NN Pathak**, “Gravitational search algorithm for synthesis of selectively thinned concentric ring array antenna with minimum sidelobe level and with fixed and variable first null beamwidth,” *International Journal of Microwave and Wireless Technologies* 7 (6), 775-781, **2015/12**.
- S. Nandi, A. Nandi, **N. N. Pathak** and M. Sarkar, “Performance analysis of Cyclic Prefix OFDM using Adaptive Modulation Techniques”, *IJECS*, vol. 6, issue. 8, pp. 214-220, **2017**, [ISSN: 2348-117]
- K Kundu, **NN Pathak**, “Circular Antenna Array Optimization Using Flower Pollination Algorithm,” *Advances in Computer, Communication and Control*, 407-414 *Advances in Computer, Communication and Control* pp 407-414, **Springer, 2019**.
- R. Bera, K. Kundu, **N. N. Pathak**, “Optimal Pattern Synthesis of Thinned and Non-Uniformly Excited Concentric Circular Array Antennas using Hybrid GSA-PSO Technique,” *RADIO ENGINEERING*, VOL. 28, NO. 2, JUNE **2019** DOI: 10.13164/re.2019.0369
- Krishanu Kundu, **Narendra Nath Pathak** and Atul Kumar Dwivedi “Optimization of Linear Antenna Array using Binary Cat Swarm Optimization (BCSO),” *International Journal of Sensor, Wireless Communications and Control*, Volume 10, Year **2020**, Pages 669 - 676
- Nandi, S. and **Pathak, N.N.** and Nandi, A, “A Novel Adaptive Optimized Fast Blind Channel Estimation for Cyclic Prefix Assisted Space--Time Block Coded MIMO-OFDM Systems,” *Wireless Personal Communications*, Volume 115 issue 2, Year **2020**, Pages 1317-1333
- Somnath Patra, Sujit Kumar Mandal, Gautam Kumar Mahanti, **Narendra Nath Pathak**, “Linear and Non-Linear Synthesis of Unequally Spaced Time-Modulated Linear Arrays Using Evolutionary Algorithms,” *RADIO ENGINEERING*, VOL. 30, NO. 3, **SEPTEMBER 2021** DOI: 10.13164/re.2021.0488
- Shovon Nandi, **Narendra Nath Pathak**, Arnab Nandi, “Implementation of Fast, Adaptive, Optimized Blind Channel Estimation for Multimodal MIMO-OFDM Systems Using MFPA,” *Intelligent Multi- modal Data Processing*, Wiley Online Library, Chapter 8, **30 April 2021**, <https://doi.org/10.1002/9781119571452.ch8>

1. T.K.Sinhamahapatra, A.Ahmed, G.K.Mahanti, **N.Pathak** and A.Chakrabarty, "Design of Discrete Phase-only Dual-beam Array Antennas with Minimum Dynamic Range Ratio," *in the proc. of IEEE Applied Electromagnetic Conference, (AEMC)*,(1-4) **19-20 December,2007**,University College of Science and Technology, Kolkata,India.
2. **N.Pathak**, G.K.Mahanti, T.K.Sinhamahapatra, A.Ahmed, and A.Chakrabarty, "Synthesis of Pencil Beam Pattern with a Uniformly Excited Multiple Concentric Circular Ring Array Antenna," *in the proc.of Conference on Advances in Space Science and Technology*, 14-16 **January 2008**,KCSTC, IIT, Kharagpur, India.
3. A.Chatterjee ,G.K.Mahanti and **N.Pathak**, "Synthesis of Thinned Concentric Circular Ring Array Antenna using Modified Particle Swarm Optimization Algorithm," *in the proceedings of 25th International Technical Conference on Circuits/Systems, Computer and Communications (ITC-CSCC 2010)*, Ambassador Pattaya, Thailand, **July 4-7,2010**,pp.504-507.
4. Juin Acherjee, Biswarup Rana, Rajeev Kumar, Monalisa Pal, **N.N. Pathak**, Mrinmoy Chakraborty "Design of a compact Microstrip Antenna for wireless communication", *Proceedings of National Conference on Electronics and Communication System NCECS-2013*, **5-6th April,2013**, pp-147-149.
5. Srijitra Chakraborty, Biswarup Rana, Rajeev Kumar, Monalisa Pal, **N.N. Pathak**, Mrinmoy Chakraborty, " Design and Analysis of a Compact Circular Microstrip Antenna with slots and defected ground Structure," *Proceedings of National Conference on Electronics and Communication System NCECS-2013*, **5-6th April,2013**, pp-150-153.
6. Juin Acherjee, Biswarup Rana, Rajeev Kumar, Achintya Das Pal, **N.N. Pathak**, Mrinmoy Chakraborty, "Design of a special Shaped Conformal Microstrip Antenna Array with Wide Band Characteristics," *Proceedings of National Conference on Electronics and Communication System NCECS-2013*, **5-6th April,2013**, pp-154-156.
7. Srijitra Chakraborty, Biswarup Rana, Rajeev Kumar, Achintya Das Pal, **N.N. Pathak**, Mrinmoy Chakraborty, "Design and Analysis of a CPW-Fed Circular-Shaped Slot Antenna for Wideband Applications," *Proceedings of National Conference on Electronics and Communication System NCECS-2013*, **5-6th April,2013**, pp-157-159.
8. S Patra, SK Mandal, GK Mahanti, **N Pathak**, "Synthesis of flat-top power pattern in time-modulated unequally spaced linear arrays using DE," **2015 IEEE 2nd International Conference on Recent Trends in Information ...**
9. SK Mandal, S Patra, S Salam, K Mandal, GK Mahanti, **NN Pathak** "Failure correction of linear antenna arrays with optimized element position using differential evolution," **2016 IEEE Annual India Conference (INDICON)**, 1-5.
10. S.Nandi, A.Nandi, **NN Pathak** "Performance Analysis of Alamouti, "STBC MIMO OFDM for Different Transceiver System," *Proceedings of the International Conference on Intelligent Sustainable Systems IEEE Xplore Compliant - Part Number: CFP17M19-ART, ISBN: 978-1-5386-1959-9 (ICISS 2017)*.
11. K. Kundu and **N. N. Pathak**, "Use of Firefly Algorithm for Optimizing Hexagonal Antenna Arrays," **2018 International Conference on Communication, Computing and Internet of Things (IC3IoT)**, Chennai, India, 2018, pp. 380-384. doi: 10.1109/IC3IoT. 2018.866812
12. K. Kundu and **N. N. Pathak**, "Employment of Modified Ratio metric Firefly Algorithm for Antenna array Optimization,"**2019 International Conference on Advances in Basic Sciences(ICABS-19)**, Haryana, India, AIP Conference Proceedings.

13. Srijita Chakraborty; **N.N. Pathak**; Mrinmoy Chakraborty, “Efficient CPW Fed UWB Antenna with Triple Notch Band Characteristics,” 2021 IEEE International IOT, Electronics and Mechatronics Conference (IEMTRONICS), Toronto, ON, Canada, 21-24 April 2021 DOI: 10.1109/IEMTRONICS52119.2021.9422569
14. Shovon Nandi, **Narendra Nath Pathak**, Arnab Nandi , “ Avenues to Improve Channel Estimation Using Optimized CP in STBC Coded MIMO-OFDM Systems—A Global Optimization Approach,” Proceeding of Fifth International Conference on Microelectronics, Computing and Communication Systems pp 249-259 Part of the Lecture Notes in Electrical Engineering book series (LNEE, volume 748) 10 September 2021, Springer link
17. S Patra, Sujit Kumar Mandal, GK Mahanti, **N Pathak**, “Synthesis of Unequally Spaced Time-Modulated Linear Arrays Through Optimized Position and On-Time Using Differential Evolution,” Advances in Smart Communication Technology and Information Processing: OPTRONIX, Springer Singapore, page: 99-109, First Online: 16 February 2021, DOI: 10.1007/978-981-15-9433-5_11

Book Chapter

1. S. Nandi, M. Sarkar, A. Nandi and **N. N. Pathak**, “*Performance Analysis of CO-OFDM system in a CR network*”, *Computer, Communication and Electrical Technology*, Guha, Chakraborty & Dutta (Eds) ©Taylor & Francis Group, 2017, [ISBN: 978-1-138-03157-9]
2. Book Chapter: Implementation of Adaptive Optimized Fast Blind Channel Estimation of MIMO-OFDM Systems using MFPA,” S Nandi, **N N Pathak**, A Nandi Chapter 6 Wiley Publication, 2019.
3. Kundu K., **Pathak N.N.** (2019) Circular Antenna Array Optimization Using Flower Pollination Algorithm. In: Biswas U., Banerjee A., Pal S., Biswas A., Sarkar D., Haldar S. (eds) *Advances in Computer, Communication and Control. Lecture Notes in Networks and Systems*, vol 41. Springer, Singapore. doi.org/10.1007/978-981-13-3122-0_40

Seminars/Short Term Courses/Summer Schools/Winter Schools attended

- Attended: 1 day Seminar organized by NIT, Durgapur, West Bengal. Topic: Recent trends in Microwaves & Antennas sponsored by TEQIP (Technical Education Quality Improvement Programme) on 4th April, 2007.
- Attended: 1 day Workshop organized by AP-MTT Joint Chapter of IEEE Calcutta Section at Jadavpur University, Kolkata, West Bengal. Topic: Microwave in Space on 8th September, 2008.
- Attended: 2 days National Conference organized by Inderprastha Engineering College, Ghaziabad, Uttar Pradesh. Topic: Electronics & Communication System-2013 on 5th-6th April, 2013.
- Attended: 1 day workshop organized by NIT, Durgapur, West Bengal. Topic: National Mission on Education Through ICT sponsored by MHRD on 9th May, 2013.
- Attended: 1 day seminar organized by West Bengal State Council of Higher Education at West Bengal University of Technology on Quality based Evaluation in the process of Accreditation for Technical and Management Institutions’ on September 16, 2013.
- Attended: 3 days International Workshop organized by Bankura Unnayani Institute of Engineering, Bankura, West Bengal. Topic Optimization in Engineering (OPTENG-2014) sponsored by TEQIP (Technical Education Quality Improvement Programme) on 29th May-31st May, 2014.

Seminars/Short Term Courses/Summer Schools/Winter Schools organized

- Organizing Chair of IEEE-AP-MTT Society, Kolkata sponsored Workshop on Microwave Engineering & Applications (MEA 2015, 14th-15th March, 2015) at Dr. B. C. Roy Engineering College, Durgapur.

Total Experience: 24.4 years (Academic 21.7 Years + Industry 2.9 Years)

Teaching Experience:

- September, 2017- **Professor**- Electronics & Communication Engg Dept., at Dr. B.C. Roy Engineering College, Durgapur.
- August 2012- Aug'2017- **Associate Professor** - Electronics & Communication Engg Dept., at Dr. B.C. Roy Engineering College, Durgapur.

Additional charges

- **Dean Student's welfare and Alumni since 18/01/2020.**
- HOD of Electronics & Communication Engineering Department since June'2014.
- Member of Academic Council.
- Departmental NBA Coordinator. **ECE department is NBA accredited.**
- March 2001-July 2012 as Faculty- Electronics & Communication Engg. Dept., Bankura Unnayani Institute of Engineering, Bankura, Near Durgapur. Last position was Assistant Professor.

Position Hold in Bankura Unnayani Institute of Engineering

- Head of the Department (HOD) of ECE department for a period of 5 years (2005 to 2009).
- Teacher-In-Charge from 01/03/2008 to 31/01/2009 for a period of 10 months.
- Teacher-In-Charge from 01/08/2009 to 01/06/2011 for a period of 1 year 10 months.
- Member of purchase committee, Centre- In-Charge of Exam, AICTE report preparation (On line report submission), Lab. Development etc.
- **Coordinator of TEQIP-II** (Bankura Unnayani Institute is a TEQIP II aided Degree level Engineering college).

Industrial Exposure:

- Worked in Superintendence Co of India Pvt Ltd, Kolkata as Project coordinator, and Service Engineer for Maintenance of in motion Weighbridge at NCL for a period of 2 years 9 months.
- Worked in Arena Multimedia, Siliguri as course Coordinator for a period of 11 months.

Subjects Taught:

B.Tech level

- Basic Electronics
- Analog Electronics
- Telecommunication Engineering
- Solid State Device
- Microwave Engineering
- Coding & Information Theory
- Computer Architecture & organization
- Audio & Video Engineering
- Antenna Theory

M.Tech level

- RF circuits

P.hD Supervisor

- 1 candidate has completed P.hD from Maulana Abul Kalam Azad University of Technology, Kolkata, West Bengal on 16th July,2021.The title of the work was “ Antenna Array Optimization Using Global Optimization Methods”
- 3 candidates (Pursuing) from Maulana Abul Kalam Azad University of Technology, Kolkata, West Bengal
- 2 candidates (Pursuing) from NIT, Durgapur, West Bengal

References:

- Dr. Goutam Kumar Mahanti Professor Department of Electronics & Communication in National Institute of Technology, Durgapur. Mobile No: 9474600384, Email address: gautammahanti@yahoo.com
- Dr. J.P. Bandhopadhyay Emeritus Professor in the Institute of Radio Physics & Electronics and Former Director, Centre of Millimeter Wave Semiconductor Devices and Systems, University of Calcutta. Mobile No: 9830032780, Email address: jpbanerjee06@rediffmail.com.

Place: Durgapur

Date: 11/09/2021

Dr. Narendra Nath Pathak