

# CURRICULUME VITAE PEMENDRA KUMAR PARDHI

## CONTACT INFORMATION

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National Institute of Technology Meghalaya (NITM),  
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## BIOGRAPHY

I am currently serving as an Assistant Professor in the Department of Electrical Engineering at the National Institute of Technology (NIT) Meghalaya, located in Sohra, India. I have completed my Ph.D. degree in Electrical Engineering from Shri Govindram Seksaria Institute of Technology and Science (SGSITS), Indore, in 2024 under the supervision of Prof. Shailendra Kumar Sharma. M.E. degree in Electrical Engineering with a specialization in Power Electronics from SGSITS Indore in 2017, and B.E. degree in Electrical and Electronics Engineering from Rajiv Gandhi Proudyogiki Vishwavidyalaya, Bhopal, in 2014.

Before joining academia, I served at CastNX Pvt. Ltd., Indore more than two years as a Senior Design Engineer (Power Electronics), where I was involved in the design and development of power electronic systems. In recognition of my early research contributions. I received the Young Scientist Fellowship from the Madhya Pradesh Council of Science and Technology, Bhopal, in 2022.

My primary research interests include DC–DC converters, control strategies for grid-connected solar photovoltaic systems, phase-locked loops (PLLs), and LED driver design, etc.

## CAREER OBJECTIVE

Utilizing my knowledge and skills to grow the organization will enhance individual growth and success. My aim is to achieve my smart goals

## WORK EXPERIENCE

- **February 2025 to Till Now**  
Working as Assistant Professor in Electrical Engineering Department, National Institute of Technology Meghalaya.
- **November 2022 to February 2025 (2 Years 4 Months)**  
Worked as Sr. Design Engineer at CastNX Pvt Ltd Indore, Project Supervised
  - Constant current LED driver (50W & 100W)
  - Logic power supply for various project (30W to 105W)
  - 1HP DC drive for garage application.
  - 25kW AC-DC-DC converter for EV charger/Electrolysis (Premature stage)
  - 3.6kW, Single phase grid tied inverter (Premature stage)
- **July 2018 to July 2020 (2 Years)**  
Worked as a Junior Research Fellow (JRF) at Shri G. S. Institute of Technology and Science Indore, under this project (Funded by MPCST Bhopal) following work has been carried out,

|                             |   |          |   |          |                              |       |  |
|-----------------------------|---|----------|---|----------|------------------------------|-------|--|
| PROJECTS/<br>CONSULTANCY    | <ul style="list-style-type: none"> <li>▪ Non-isolated topologies development for grid-tied single-phase solar inverter and its control implementation.</li> <li>▪ Isolated topologies development for grid-tied single-phase solar inverter and its control implementation.</li> <li>• “<b>Design and Development of Commercial Door Operator Drive</b>” (Consultancy for CastNX Pvt. Ltd.), (Duration: 6<sup>th</sup> Month) (Status: Completed on Dec 2025)</li> <li>• “<b>GaN-Based 3.3 kW Single Phase Grid-Tied Solar Inverter</b>” (Consultancy for CastNX Pvt. Ltd.), (Duration: 6<sup>th</sup> month) (Status: Ongoing)</li> </ul>  |          |   |          |                              |       |  |
| ACADEMIC<br>QUALIFICATION-S | <ul style="list-style-type: none"> <li>• Completed <b>Doctor of Philosophy</b> in the faculty of Electrical and Electronics Engineering from Shri G. S. Institute of Technology and Science Indore with <b>81%</b> in 2024.</li> <li>• Completed <b>Master of Engineering</b> in Electrical stream with specialization in <b>Power Electronics</b> from Shri G. S. Institute of Technology and Science Indore with a <b>CGPA of 9.05</b> in 2017</li> <li>• Completed <b>Bachelor of Engineering</b> in <b>Electrical and Electronics stream</b> from Mansarovar Institute of Science and Technology, Bhopal with a <b>CGPA of 8.03</b> in 2014.</li> <li>• Completed <b>12<sup>th</sup></b> from Govt. H.S. School Hatta Balaghat affiliated to MP board with <b>87.2%</b> in 2010.</li> <li>• Completed <b>10<sup>th</sup></b> from Rajendra Gautam High School Deveri Hatta affiliated to MP board with <b>73.4%</b> in 2008.</li> </ul> |          |   |          |                              |       |  |
| TECHNICAL SKILL             | <table border="0"> <tr> <td data-bbox="376 1048 478 1070">Software</td> <td data-bbox="552 1048 1123 1070">MATLAB, Code Composer Studio, Allegro Cadence</td> </tr> <tr> <td data-bbox="376 1077 478 1099">Hardware</td> <td data-bbox="552 1077 906 1099">dSPACE, DSP C2000 Controller</td> </tr> <tr> <td data-bbox="376 1106 437 1128">Other</td> <td data-bbox="552 1106 1054 1128">Power Electronics, Electrical Drive, Magnetics</td> </tr> </table>  | Software | MATLAB, Code Composer Studio, Allegro Cadence | Hardware | dSPACE, DSP C2000 Controller | Other | Power Electronics, Electrical Drive, Magnetics |
| Software                    | MATLAB, Code Composer Studio, Allegro Cadence   |          |   |          |                              |       |  |
| Hardware                    | dSPACE, DSP C2000 Controller  |          |   |          |                              |       |  |
| Other                       | Power Electronics, Electrical Drive, Magnetics  |          |   |          |                              |       |  |
| ACHIEVEMENTS                | <ul style="list-style-type: none"> <li>• Secured AIR 12636 in GATE 2020, Secured AIR 13667 in GATE 2016 &amp; AIR 11466 in GATE 2015 in Electrical Engineering stream.</li> <li>• Awarded Fellowship for Training of Young Scientist from Madhya Pradesh Council of Science and Technology Bhopal.</li> </ul>   |          |   |          |                              |       |  |
| PROFESSIONAL<br>MEMBERSHIP  | <ul style="list-style-type: none"> <li>• IEEE Membership. (Status Active from last 8 years).</li> <li>• IEEE Power Electronics Society Membership</li> <li>• IEEE Industrial Application Society Membership</li> <li>• IEEE Power and Energy Society Membership</li> <li>• Association of Engineers (AOE) Membership</li> </ul>   |          |   |          |                              |       |  |
| EXTRACURRIC-<br>ULAR        | <ul style="list-style-type: none"> <li>• Delivered expert lecture on topic “Discussion on PV Based Grid Tied Inverter” on 16<sup>th</sup> Sept. 2025, organized by IEEE Student branch and PELS chapter SGSITS Indore.</li> <li>• Attended one-week professional development Program on “Modern Approaches to Teaching and Learning” held on 18<sup>th</sup> – 22<sup>nd</sup> August, 2025. Conducted by NIT Meghalaya and expert from NITTTR Chennai.</li> <li>• Attended two days Capacity Building Program on Design &amp; Entrepreneurship (CBDE) Pedagogy Workshop held on 7<sup>th</sup> – 8<sup>th</sup> August, 2025. Organized by NIT Manipur.</li> </ul>   |          |   |          |                              |       |  |

- Attended one day National Workshop on “Future Ready Energy Education: Opportunities and Challenges”, held on 09<sup>th</sup> July, 2025. Organized by IIT Delhi.
- Delivered talk on topic “Modern Power Electronics & Smart Control for Grid-connected Solar Photovoltaic Systems” on Faculty Development Program titled "AI-Powered Smart Grids: Advancing Resilient and Equitable Energy Systems" held on 16-20 June 2025, organized by OP Jindal University Raigarh.
- Delivered talk on topic “Control & Optimization of Electric Vehicles EVs” on All India Seminar (One Day) Dec 2024. organized by The Institution of Engineers (India) In Association with Electrical Engineering Department, Medi-Caps University, Indore.
- Delivered lecture on topic “Design and development of solar photovoltaic supply system” on Research Scholar’s Conclave 2020 jointly organized by SGSITS Indore, Manipur Technical University and COEP Pune.
- Volunteer, GIAN (global initiative academic network) Workshop in the SGSITS campus in collaboration with MHRD.
- Volunteer, advances in power electronics for sustainable development Workshop in the SGSITS campus, funded by TEQIP-II.
- Secretary of IEEE student branch SGSITS Indore.

LIST OF  
PUBLICATIONS

- **Book Chapters**
  - i. S. K. Sharma and **P. K. Pardhi**, Control for Grid Synchronization of Single-Phase Voltage Source Converter, In Power Quality: Infrastructures and Control. Studies in Infrastructure and Control. Springer International Publishing, Singapore 2023.
- **International Journal/Transaction**
  - i. **P. K. Pardhi** and S. K. Sharma, “Isolated Interleaved Boost Converter Based Single Phase Grid- Interfaced Photovoltaic System,” Journal of Electric Power Components and Systems, vol. 00, no. 00, pp 1-16, Aug 2023. (SCIE).
  - ii. **P. K. Pardhi**, S. K. Sharma and A. Chandra, “Grid-integrated Single Phase Solar PV System Employed with Single Switch High Gain Boost Converter," *Electric Power Systems Research*, vol. 213, pp. 1-13, Nov.-Dec. 2022. (SCIE).
  - iii. S. K. Sharma, **P. K. Pardhi** and R. K. Saxena, “ Fifth Order Generalized Integrator for Double- Stage Single Phase Grid Interfaced Photovoltaic Supply System” *IETE Journal of Research* Jun 2022 (SCIE)
  - iv. S. K. Sharma, **P. K. Pardhi** and R. K. Saxena, “ SEPIC For Solar Energy Based Sensorless Speed Control of Induction Motor Drive” *International Transactions on Electrical Energy Systems (Wiley publication)*, vol.31 no.12 pp.1-19 ,Dec. 2021 (SCIE)
  - v. **P. K. Pardhi** and S. K. Sharma, “High Gain Non-Isolated DC Converter Employed In Single Phase Grid-Tied Solar Photovoltaic Supply System”, *IEEE Transactions on Industry Applications*, vol. 57, no. 5, pp. 5170-5182, Sept.-Oct. 2021. (SCI)
  - vi. **P. K. Pardhi**, S. K. Sharma and A. Chandra, “Control of Single-Phase Solar Photovoltaic Supply System,” *IEEE Transactions on Industry Applications*, vol. 56, no. 6, pp. 7132-7144, Nov.-Dec. 2020. (SCI).
- **International Conference**

- i. D. S. Ritchil, E. Kharwar, **P. K. Pardhi**, and S. K. Sharma, "A Modified Isolated SEPIC Employed PV-Fed Electric Vehicle Charger," *IEEE International Conference on Energy, Power and Environment (ICEPE)*, Sohra (Cherrapunjee), India, 2025, pp. 1-5.
- ii. H. Choubey, S. K. Sharma and **P. K. Pardhi**, "Deep Neural Network MPPT-based PV Water Pumping With PMSM Drive," *IEEE International Conference on Energy, Power and Environment (ICEPE)*, Sohra (Cherrapunjee), India, 2025, pp. 1-5.
- iii. **P. K. Pardhi** and S. K. Sharma, "PV-fed Flyback-type Single-stage Single-phase Grid-tied System," *IEEE International Conference on Power India International Conference (PIICON)*, MNIT Jaipur, 2024, pp. 1-6
- iv. P. K. Pardhi, S. Kumar Sharma and A. Chandra, "Modeling and Control of VIENNA Circuit Employed Single-Phase Single-Stage Solar PV System," *International Conference on Power Electronics and Drive Systems (PEDS)*, Montreal, QC, Canada, 2023, pp. 1-6.
- v. P. K. Pardhi and S. K. Sharma, "Control of Single Phase Grid-Integrated Isolated Converter Based PV Supply," *IEEE Industrial Electronics Society Annual On-Line Conference (ONCON)*, 2022, pp. 1-6
- vi. **P. K. Pardhi**, S. K. Sharma and R. K. Saxena, "Integrated DC Converter For Stand-alone Single Phase Photovoltaic Supply System" *IEEE International Conference on Power Electronics, Smart Grid and Renewable Energy (PESGRE)*, 2022, pp.1-6.
- vii. **P. K. Pardhi** and S. K. Sharma, "Energy Storage-less Single Phase Photovoltaic Supply System Operating in Grid and Autonomous Modes" *IEEE International Conference on Smart Technologies for Power, Energy and Control (STPEC)* 2021, pp.1-6.
- viii. **P. K. Pardhi**, S. K. Sharma and R. Saxena, "Enhanced TOGI Controller for Single-stage Single Phase Grid-tied Solar PV Supply System," *IEEE International Power and Renewable Energy Conference (IPRECON)*, 2021, pp. 1-5
- ix. **P. K. Pardhi**, S. K. Sharma and A. Chandra, "Solar Photovoltaic Roof-Top System Design and Control Employing High Gain DC Converter," *IEEE Industry Applications Society Annual Meeting*, 2020, pp. 1-6
- x. **P. K. Pardhi** and S. K. Sharma, "Design and Control of Isolated Boost Converter in Photovoltaic Supply System Integrated With Grid," *IEEE International Conference on Computing, Power and Communication Technologies (GUCON)*, 2020, pp. 540-545.
- xi. **P. K. Pardhi** and S. K. Sharma, "Power Optimized Architecture based Converter and Its Control for Single Phase Grid-Tied Solar Photovoltaic System," *IEEE International Conference on Power Electronics, Smart Grid and Renewable Energy (PESGRE)*, 2020, pp. 1-6.
- xii. **P. K. Pardhi**, S. K. Sharma and A. Chandra, "Control of Single-Phase Solar Photovoltaic Supply System," *IEEE Industry Applications Society Annual Meeting*, 2019, pp. 1-14.
- xiii. **P. K. Pardhi** and S. Sharma, "Implementation of Robust Controller for VSI Feeding Stand-alone Loads," *IEEE International Conference on Energy, Systems and Information Processing (ICESIP)*, 2019, pp. 1-5

PERRSONAL  
INFORMATION

Date of Birth 4<sup>th</sup> March 1992  
Nationality Indian

**(Dr. Pemendra Kumar Pardhi)**  
Assistant Professor