



## About GMRIT

[www.gmr.it.edu.in](http://www.gmr.it.edu.in)

GMR Institute of Technology is situated in Rajam, a small industrial town approximately 100 kilometers away from the 'city of destiny,' Visakhapatnam in Andhra Pradesh. The institute's campus spans over a sprawling 117 acres of land. The lush, sylvan, and idyllic surroundings in the heart of the agricultural belt provide an ideal setting for higher studies. The institute is affiliated with Jawaharlal Nehru Technological University Gurajada, and approved by AICTE New Delhi. It has been accredited with NAAC - 'A' grade by UGC. The Department of EEE has been accredited by the National Board of Accreditation (NBA) in Tier-I for the academic years 2025-26 to 2027-28.

GMRIT offers 4-year B.Tech. programs in eight core disciplines and 2-year M. Tech programs in five specializations. The institution has received a grant extension of autonomous status for a period of ten years, starting from 2018-19 to 2027-2028.

## About EEE Department

### Vision

To be a preferred department of learning for students and teachers alike, with a commitment towards Academics & Research, serving the students in an atmosphere of innovation, critical thinking and making them Industry ready.

### Mission

- M1. To provide adaptable education in a collaborative and innovative environment in skilling the graduates to solve real world problems in the field of Electrical & Electronics Engineering
- M2. To prepare the students as critical thinking professionals with multidisciplinary research orientation and Innovation
- M3. To instill ethical values and nurture the graduates who will be able to contribute to the society

## Overview

The Department of Electrical & Electronics Engineering was established in 1997. The department offers four-year B.Tech and two-year M.Tech programs. It has a rich tradition and well-qualified faculty, along with widely recognized laboratories. The department aims to provide a strong foundation in Electrical and Electronics Engineering fundamentals, emphasizing mathematical and scientific principles. Additionally, the course focuses on developing skills in the application of design processes for innovative engineering solutions. The annual intake of students in this department is 120.

## Facilities & Infrastructure

- Sophisticated Laboratories include:
  - Electrical Machines Lab
  - Electrical Engineering Lab
  - Electrical Measurements Lab
  - Power Systems Lab
  - Power Electronics Lab
  - Electrical Systems Simulation
  - Power Electronics and Drives Lab (PG)
- A well-stocked department library
- To enable the students and provide opportunities, to understand in the industrial eco-systems and work on latest technological developments in the industries, MoUs are signed with various industrial organizations
- Committed and dedicated faculty

## Major Courses Offered

- Electrical Machines
- Electrical Circuit Analysis
- Measurements and Instrumentation
- Semiconductor Devices & Circuits
- Linear and Digital integrated circuits
- Electromagnetic Field Theory
- Control Systems
- Power Generation, Transmission and Distribution
- Power System Protection
- Green Energy Technologies
- Power Electronics
- Electrical Vehicle Technologies
- Signals and Systems Theory
- Electrical Drives
- Power System Analysis and Control
- Engineering Economics and Project management

## Research and Academic Achievements

### Books/Books Chapter

- Polamarasetty Praveen Kumar, Ramakrishna S.S. Nuvvula, Bachina Harish Babu, Chapter 3 - Microgrids with energy storage systems, Editor(s): Baseem Khan, Salah Kamel, Jose Luis Dominguez-Garcia, Microgrid Technology and Microgrid Cluster Development, Elsevier, 2025, Pages 23-32, ISBN 9780443136856, <https://doi.org/10.1016/B978-0-443-13685-6.00003>

- Polamarasetty Praveen Kumar, Ramakrishna S.S. Nuvvula, Vaganam Satyanarayan, Chapter 2 - Fundamentals of microgrids, Editor(s): Baseem Khan, Salah Kamel, Jose Luis Dominguez-Garcia, Microgrid Technology and Microgrid Cluster Development, Elsevier, 2025, Pages 13-21, ISBN 9780443136856, <https://doi.org/10.1016/B978-0-443-13685-6.00002-1>.
- Ramakrishna S.S. Nuvvula, Polamarasetty Praveen Kumar, Nayana Shetty, Chapter 6 - Stability analysis of microgrid systems, Editor(s): Baseem Khan, Salah Kamel, Jose Luis Dominguez-Garcia, Microgrid Technology and Microgrid Cluster Development, Elsevier, 2025, Pages 65-80, ISBN 9780443136856, <https://doi.org/10.1016/B978-0-443-13685-6.00006-9>.
- Polamarasetty Praveen Kumar, Ramakrishna S.S. Nuvvula, R. Hushein, Chapter 5 - Microgrid reliability assessment and enhancement, Editor(s): Baseem Khan, Salah Kamel, Jose Luis Dominguez-Garcia, Microgrid Technology and Microgrid Cluster Development, Elsevier, 2025, Pages 47-64, ISBN 9780443136856, <https://doi.org/10.1016/B978-0-443-13685-6.00005-7>.
- Polamarasetty Praveen Kumar, Bachina Harish Babu, Ramakrishna S.S. Nuvvula, Chapter 16 - Peer-to-peer energy trading in a community microgrid, Editor(s): Baseem Khan, Salah Kamel, Jose Luis Dominguez-Garcia, Microgrid Technology and Microgrid Cluster Development, Elsevier, 2025, Pages 243-256, ISBN 9780443136856, <https://doi.org/10.1016/B978-0-443-13685-6.00016-1>.
- Ramakrishna S.S. Nuvvula, Polamarasetty Praveen Kumar, T. Rameshkumar, Chapter 8 - Microgrid system feasibility analysis, Editor(s): Baseem Khan, Salah Kamel, Jose Luis Dominguez-Garcia, Microgrid Technology and Microgrid Cluster Development, Elsevier, 2025, Pages 97-109, ISBN 9780443136856, <https://doi.org/10.1016/B978-0-443-13685-6.00008-2>.
- P. Raghavendra, Polamarasetty Praveen Kumar, Ramakrishna S.S. Nuvvula, Chapter 4 - Challenges of microgrid operation and their solutions, Editor(s): Baseem Khan, Salah Kamel, Jose Luis Dominguez-Garcia, Microgrid Technology and Microgrid Cluster Development, Elsevier, 2025, Pages 33-46, ISBN 9780443136856, <https://doi.org/10.1016/B978-0-443-13685-6.00004-5>.
- Polamarasetty Praveen Kumar, Ramakrishna S.S. Nuvvula, Syed Riyaz Ahammed, Chapter 13 - Recent advances in digital twins, Editor(s): Baseem Khan, Salah Kamel, Jose Luis Dominguez-Garcia, Microgrid Technology and Microgrid Cluster Development, Elsevier, 2025, Pages 191-202, ISBN 9780443136856,

<https://doi.org/10.1016/B978-0-443-13685-6.00013-6>.

- Polamarasetty Praveen Kumar, Kode Jaya Prakash, Ramakrishna S.S. Nuvvula, Chapter 15 - Energy transaction between microgrids and utility grids, Editor(s): Baseem Khan, Salah Kamel, Jose Luis Dominguez-Garcia, Microgrid Technology and Microgrid Cluster Development, Elsevier, 2025, Pages 221-242, ISBN 9780443136856, <https://doi.org/10.1016/B978-0-443-13685-6.00015-X>.
- Ramakrishna S.S. Nuvvula, Polamarasetty Praveen Kumar, Bachina Harish Babu, Chapter 14 - Utility grid integration of microgrids, Editor(s): Baseem Khan, Salah Kamel, Jose Luis Dominguez-Garcia, Microgrid Technology and Microgrid Cluster Development, Elsevier, 2025, Pages 203-220, ISBN 9780443136856, <https://doi.org/10.1016/B978-0-443-13685-6.00014-8>.
- Ramakrishna S.S. Nuvvula, Polamarasetty Praveen Kumar, T. Rameshkumar, Chapter 11 - Optimization of microgrid systems, Editor(s): Baseem Khan, Salah Kamel, Jose Luis Dominguez-Garcia, Microgrid Technology and Microgrid Cluster Development, Elsevier, 2025, Pages 153-169, ISBN 9780443136856, <https://doi.org/10.1016/B978-0-443-13685-6.00011-2>.
- Veeramsetty, V., Baddam, N., Pilla, R., Salkuti, S.R. (2025). Short Term Load Forecasting for

Effective Trading in Energy Market Using Artificial Neural Networks and ADAM Optimizer. In: Salkuti, S.R. (eds) Next-Generation Green Energy Technologies for Sustainable Development. Green Energy and Technology. Springer, Singapore. [https://doi.org/10.1007/978-981-95-0441-1\\_6](https://doi.org/10.1007/978-981-95-0441-1_6)

### Journal Publications

- A. Dev, V. Kumar, A. S. L. V. Tummala, V. K. Verma, R. Gajjar, A. K. Chaudhary, G. Sarvaiya, and B. Parmar, "Charting the hydrogen fuel technology: Pathways and challenges," Discover Applied Sciences, vol. 7, no. 1336, 2025. (Indexed by SCOPUS, Impact Factor: 2.8, Q2, <https://doi.org/10.1007/s42452-025-07686-8>)
- M. V. Kumar, P. K. Gouda, C. Kamal, A. K. Sahoo, J. R. Tarra, and S. Nagaraju, "Integration of multilevel inverter with photovoltaic systems to enhance grid performance: A state-of-art review," SSRG International Journal of Electrical and Electronics Engineering, vol. 12, no. 9, pp. 21–28, 2025. (Indexed by SCOPUS, Impact Factor: 0.129, Q4, <https://doi.org/10.14445/23488379/IJEEE-V12I9P103>)
- V. R. Raj, M. Venkatesh, P. V. R. S. P. Raju, S. D. U. Mageswari, V. V. S. Tallapragada, V. S. Bhagavan, N. Ashok, J. M. Philip, and A. Rajaram, "Sustainable strategies for the remediation of heavy metals in contaminated

soils using biochar and microbial techniques," Journal of the Balkan Tribological Association, vol. 31, no. 5, pp. 890–900, 2025. (Indexed by SCOPUS, Impact Factor: 0.151, Q4, <https://doi.org/10.14445/23488379/IJEEE-V12I9P103>)

- N. V. A. Ravikumar, R. Sasidhar, V. Manoj, C. Mutta, M. C. S. Reddy, K. J. Narayana, D. E. M. Wapet, and M. M. Mahmoud, "Design and real-time simulations of robust controllers for uncertain multi-input wind turbine," Energy Exploration & Exploitation, 2025. (Indexed by SCOPUS, Impact Factor: 1.6, Q4, <https://doi.org/10.1177/01445987251373101>)
- Upendra Kumar Potnuru, Srinivasa Kishore Teegala, Lakshmana Rao Kalabarige, Vidyabharati Ippili, M Raviraja Holla, Dataset for optimized design parameters of three-phase induction motors with validation through machine learning, Data in Brief, Vol. 63,2025,112274, ISSN 2352-3409, (Indexed by SCOPUS and ESCI, Impact Factor:1, Q3, <https://doi.org/10.1016/j.dib.2025.112274>)
- Rao, V.D., Raghutu, R., Rao, K.S. et al. Efficient biosorption of cadmium ions from wastewater using iron oxide–maize shell activated bio-carbon nanocomposites, Journal of Biomass Conversion and Biorefinery. Vol.15, no.22, pp. 29067–29078 (2025). <https://doi.org/10.1007/s13399-024-06190-0>

(Indexed by SCIE and SCOPUS, Impact Factor:3.5, Q2)

### Faculty Outreach & Engagements

- Dr. S. P. Mishra delivered guest lectures at GIET, Bhubaneswar (Diploma), on October 18, 2025, and at TITE, Bhubaneswar, on November 10, 2025.
- Dr. L. V. Suresh Kumar served as a session chair at the International Conference on Cyber Physical Systems, Power Electronics and Electric Vehicles (ICPEEV 2025), held at Mahindra University, Hyderabad, from September 25–27, 2025.

### Professional Development Activities by Faculty Members

- Dr. Ch. Hemanth Kumar attended online FDP Program titled "Artificial Intelligence and Internet of Things Applications to Electrical Engineering, at LBRCE Mylavaram from 17-Nov-2025 to 21-Nov-2025.
- Dr. Vasupalli Manoj Kumar attended online FDP Program titled "Artificial Intelligence and Internet of Things Applications to Electrical Engineering, at LBRCE Mylavaram from 17-Nov-2025 to 21-Nov-2025.
- Dr.M.Venkatesh attended online FDP Program titled "Artificial Intelligence and Internet of Things Applications to Electrical Engineering, at LBRCE Mylavaram from 17-Nov-2025 to 21-Nov-2025.
- Dr.G I Kishore, attended online FDP Program titled "Artificial Intelligence and Internet of Things

Applications to Electrical Engineering, at LBRCE Mylavaram from 17-Nov-2025 to 21-Nov-2025.

- Dr.K.Karthick, attended online FDP Program titled "Accreditation and Outcome Based Learning, NPTEL from 17-Nov-2025 to 21-Nov-2025.

### Guest Lecture / Events Organized

- **Innovation in Action: ECE and EEE Departments Hosted FSI Project Expo**

The Departments of ECE and EEE successfully organized a Project Expo, showcasing the technical prowess and innovative spirit of their students. The event served as a grand finale for the on-campus Full Semester Internship (FSI) program.



- **GMRIT Hosted Expert Session by CITD Director**

On December 4, 2025, the Department of EEE, in coordination with IIC-GMRIT, organized an inspiring session titled "Empowering Innovators – Journey from Creative Ideas to Prototype Solutions."

The session was presented by Dr. T. Vijay Krishna Kanth, Director of the MSME Tool Room – Central Institute of Tool Design (CITD), Hyderabad. The

lecture specifically benefitted students from the EEE, ECE, and Mechanical Engineering departments, focusing on the interdisciplinary nature of modern product development. Dr. Kanth shared expert insights on the lifecycle of innovation, guiding students through the critical stages of transforming creative concepts into functional prototype solutions.



## Editorial Borad Members

### Chief Editors

Dr.Ramana Pilla

Dr.K.Karthick

### Section Editors (Faculty)

#### Research and Academic Achievements

Dr G Indira Kishore

#### Guest Lecture / Expert talk / Events Organized

Dr L V Suresh Kumar

### Section Editors (Students)

#### Student-Centric Events and Engagement

AMBAKANDI GANESH KUMAR (23341A0203)

ANDHAVARAPU GAYATHRI (23341A0205)

TARIGOPPULA MANIKANTA SRINIVASA RAO (23341A02B9)

VEMAKOTI HARIKA (23341A02C5)

BORA LAKSHMI PRASAD (23341A0222)

GOSALA INDU (23341A0245)

VANAPALLI POOJITHA (23341A02C2)

KANDULA SAI MANIKANTA (24341A0257)

KARRA SRI VARSHITHA (24341A0260)

BHASURU SAMEERA (24341A0214)

EDDUM YASHWANTH SAI KUMAR (24341A0235)

MUDDANA DARSHINI (24341A0278)

NIKKU SIVAMANI (24341A0288)

KOTNANA MOHIT MANIKANTA (24341A0267)

PATTA LAHARI (24341A0294)