ISSUE JULY - DECEMBER 2021

EEE'S HALF YEARLY

NEWS LETTER

MAHATMA GANDHI INSTITUTE OF TECHNOLOGY

ABOUT US

MGIT envisions, inspires and motivates its students to imbibe knowledge with which they can excel and serve the nation with great elan. To nurture students into disciplined young citizens of irreproachable character, coupled with hands – on training and to make them readily employable by fostering social, cultural and environmental consciousness.

Faculty Achievements:

Dr. P. Chandrasekhar

Dr. P. Chandrasekhar actively enhanced his academic and research exposure by attending a wide range of Faculty Development Programs, ATAL FDPs, workshops, and webinars between July and December 2021. His FDP participation included programs on Modern Trends in Power Electronics at VJIT Hyderabad; AI Solutions for Optimum Utilization of Power and Energy at NIT Srinagar; Role of Machine Intelligence for Information Retrieval at GMR Institute of Technology; and Recent Trends in Power System Operation and Control at Government College of Engineering, Karad. He further attended FDPs on Green Technology for Sustainable Life at NIT Silchar; Smart Grid and Sustainable Energy Management at Sathyabama Institute of Science and Technology; Materials for Photonic Applications at MGIT; Recent Trends in Electrical Engineering at Geethanjali Institute; Digital VLSI Design and Verification at Bangalore Institute of Technology; and Energy Conversion Technologies at Sharad Institute of Technology. His engagements also included FDPs on Societal Applications of AI, Blockchain, and IoT at SVECW Bhimavaram; Contemporary Research Methodology and Linear Algebra in Machine Learning at MGIT; Tools for Research & Scientific Communication at IARE Hyderabad; as well as programs on Smart Grid with EV Integration at VEMU Institute of Technology, Sustainable Technologies for Electric Transportation at GRIET, hybrid and modern vehicles at VNR VJIET, and emerging automotive technologies at VNR VJIET.

He expanded his expertise through an STTP on Data Science and Big Data Analytics at Indo Global College of Engineering, along with several webinars on modern power system uncertainty (IEEE Hyderabad), faculty leadership (MGIT), HVDC and power electronics in future grids (EPRI USA), electric vehicles and sustainable mobility (IEI India), IoT in smart grids (Sri Ramakrishna Engineering College), and fiber optic temperature sensing in power cables (Canada). Additionally, he participated in a workshop on Smart Grids for Smart Cities at NIT Calicut. These programs collectively reflect his strong commitment to continuous learning and advancement in modern electrical engineering technologies.

Dr. P. Nagasekhar Reddy

Dr. P. Nagasekhar Reddy significantly strengthened his technical and pedagogical expertise by participating in a diverse range of Faculty Development Programs, ATAL initiatives, workshops, and master classes during 2021–22. His FDP engagements included Sustainable Technologies for Electric Transportation Systems at GRIET Hyderabad; Fuel Powered, Hybrid Electric and Modern Vehicles at VNR VJIET; and Recent Trends in Electrical Engineering at Geethanjali Institute of Science and Technology, Nellore. He further expanded his knowledge through FDPs on Emerging

Faculty Achievements:

Technologies in the Automotive Industry at VNR VJIET; Advanced Concepts of Outcomes-Based Education delivered online; Research Challenges and Opportunities in Smart Grid with EV Integration at VEMU Institute of Technology; Outcome-Based Teaching and Assessments by Inpods India; Greening the Grid at MGIT Hyderabad; and Microgrid Control Dynamics and Stability at NIT Warangal. Dr. Reddy also enriched his academic perspectives through an STTP on Outcome-Based Teaching coordinated by ENHSB USA, and a Workshop on MATLAB Applications in Industry 4.0 at NITTTR Chennai. Additionally, he completed two specialized Master Classes on Electric Vehicle Design using MATLAB conducted by Pantech Learning and on Renewable Energy System Design offered online. These activities collectively highlight his dedication toward continuous professional development in emerging energy systems, power technologies, and outcome-based education.

Ms. N. Madhuri

Ms. N. Madhuri broadened her academic horizons by actively engaging in several ATAL FDPs, FDPs, training programs, and webinars during 2021–22. Her ATAL FDP participation included Recent Trends in Electric Vehicles at NIT Arunachal Pradesh; Novel Applications of Waste Technology Systems for a Sustainable Future at MS Ramaiah Institute of Technology; and Electric Vehicles – Challenges in Charging and Their Impact on the Power Grid at the College of Engineering, Thalassery. She also attended the FDP on Smart Grids and Microgrids in the Indian Context at MGIT Hyderabad, gaining valuable insights into modern grid integration strategies. Further strengthening her renewable energy foundation, she completed the Solar Photovoltaic Training Programme offered by the Advit Foundation. Additionally, she enhanced her practical simulation skills through a specialized webinar on Developing DC–DC Converter Control in Simulink conducted by MathWorks. Her participation in these programs reflects continuous upskilling in electric vehicles, renewable systems, smart grid technologies, and computational tools.

Mr. B. N. Reddy

Mr. B. N. Reddy actively upgraded his professional knowledge by taking part in multiple Faculty Development Programs and ATAL FDPs focused on modern power and energy systems. His FDP involvement included Research Challenges and Opportunities in Smart Grid with EV Integration at VEMU Institute of Technology; Tools for Research and Scientific Communication at IARE Hyderabad; and Recent Trends in Energy Conversion Technologies at Sharad Institute of Technology, Kolhapur. He also attended FDPs on Materials for Photonic Applications at MGIT Hyderabad, Digital VLSI Design and Verification at Bangalore Institute of Technology, and several emerging topics in electrical engineering. Additionally, he enriched his domain expertise through ATAL FDPs on Recent Trends in Electric Vehicles at NIT Arunachal Pradesh and Novel

Faculty Achievements:

Applications of Waste Technology Systems at MS Ramaiah Institute of Technology. His active participation in these programs demonstrates his commitment to advancing competencies in smart grids, VLSI systems, photonics, and evolving energy technologies.

Mrs. P. V. B. Kumari

Mrs. P. V. B. Kumari enhanced her academic proficiency by participating in several ATAL FDPs, STTPs, and faculty development initiatives during 2021–22. She attended ATAL FDPs on Recent Trends in Electric Vehicles at NIT Arunachal Pradesh; Novel Applications of Waste Technology Systems for Sustainable Futures at MS Ramaiah Institute of Technology; and Electric Vehicle Charging Challenges and Grid Impact at the College of Engineering, Thalassery. Her interest in renewable energy technologies was further strengthened through the Solar Photovoltaic Training Programme conducted by the Advit Foundation. She also expanded her power systems knowledge by attending the FDP on Recent Trends in Energy and Power Systems at VIT Vellore. Her participation across these diverse programs reflects her focus on electric vehicle technologies, sustainable engineering practices, and modern power system developments.

Mr. P. Pradhyumna

Mr. P. Pradhyumna enriched his academic and research capabilities through a combination of Coursera certifications and faculty development programs. He completed the Solar Energy and Electrical System Design course from the University at Buffalo, strengthening his understanding of modern solar engineering. He also attended the FDP on Challenges in Evolving Power Systems at FAMT Ratnagiri, followed by an FDP on Contemporary Research Methodology at MGIT Hyderabad. His technical foundation was further strengthened through FDPs on Materials for Photonic Applications and Smart Grid & Sustainable Energy Management at Sathyabama Institute of Science and Technology. Additionally, he participated in the FDP on Modern Trends in Power Electronics at VJIT Hyderabad. Through these programs, he demonstrated strong commitment toward developing expertise in renewable energy systems, photonics, smart grids, and cutting-edge power system technologies.

Mrs. M. Nalini Devi

Mrs. M. Nalini Devi broadened her professional skills through a combination of webinars and online certifications during 2021–22. She participated in the webinar on Vehicle Electrification: Challenges and Opportunities organized by SRM TRPEC, Trichy, and another on Strategic Management of R&D and Innovation Ecosystems hosted by CBIT Hyderabad. Complementing these engagements, she completed multiple Coursera certifications, including COVID-19 Contact

Faculty Achievements:

Tracing, Search Engine Optimization with Squarespace, and Accessing an EC2 Instance through the AWS Console. These programs collectively showcase her initiative in expanding her competencies across engineering management, emerging technologies, and digital skill development.

Mr. A. Ramachandra Reddy

Mr. A. Ramachandra Reddy strengthened his expertise in smart grid technologies, renewable energy, and advanced power systems through his active participation in several Faculty Development Programs during 2021–22. He attended an FDP on Block Chain Technology: Current Trends and Future Aspects in Smart Grid at Gyan Ganga Institute of Technology and Sciences, followed by a program on Smart Grid and Sustainable Energy Management at Sathyabama Institute of Science and Technology. He further explored advanced power system operations through the FDP on Restructured Power System at RIT Rajaramnagar and Recent Trends in Energy and Power Systems at VIT Chennai. Additionally, he upskilled in e-mobility through an STTP on E-Mobility and Battery Charging at Gayatri Vidya Parishad College of Engineering for Women. His analytical competencies were enhanced through a specialized FDP on Data Analysis and Mining with Python conducted by CMR Engineering College. Collectively, these programs reflect his ongoing commitment to strengthening knowledge in modern grid operations, electric vehicle systems, and emerging computational tools in electrical engineering.

Mr. G. Gopal

Mr. G. Gopal expanded his domain knowledge in smart grid technologies, electric vehicles, and photonics by attending a series of Faculty Development Programs during 2021–22. He participated in the FDP on Research Challenges and Opportunities in Smart Grid with EV Integration at VEMU Institute of Technology, followed by a focused FDP on Electric Vehicles – Research Issues and Challenges conducted by GRG Polytechnic College. His interest in advanced materials was further strengthened through the FDP on Materials for Photonic Applications at MGIT Hyderabad. He also attended the FDP on Recent Trends in Power Systems organized by the Government College of Engineering, Karad, along with the FDP on Modern Trends in Power Electronics and Their Applications at VJIT Hyderabad. Through these programs, he cultivated a strong foundation in EV technologies, smart grid integration, emerging power system trends, and photonic applications.

Faculty Achievements:

Mr. S. Abhishek Reddy

Mr. S. Abhishek Reddy enhanced his academic and research exposure by attending multiple ATAL FDPs and departmental development programs during 2021–22. His participation included the ATAL FDP on the State of the Art Applications and Research Areas in High Voltage Engineering (RHVTE-2021) at the National Institute of Technology and the ATAL FDP on Block Chain Technology: Current Trends and Future Aspects in Smart Grid organized by Gyan Ganga Institute of Technology and Sciences. He further upgraded his understanding of modern electrical systems through the FDP on Recent Trends in Energy and Power Systems at Vellore Institute of Technology. Additionally, he completed the AICTE–ISTE Orientation/Refresher Program on E-Mobility and Battery Charging conducted by Gayatri Vidya Parishad College of Engineering for Women. These programs collectively reflect his focus on emerging smart grid technologies, blockchain applications in power systems, high-voltage engineering, and the evolving e-mobility ecosystem.

Mr. Ch. Vinay Kumar

Mr. Ch. Vinay Kumar broadened his technological insights through participation in advanced webinars and research-oriented sessions during 2021–22. He attended the webinar on Advanced Nanomaterials: Photoactive Nanomaterials for Catalysis Applications hosted by MGIT Hyderabad, gaining exposure to cutting-edge developments in material science. His expertise in power and communication systems was further strengthened through the webinar on Machine Learning and Its Applications in Electrical Power and Communication Systems conducted by GITAM Deemed to Be University. These engagements highlight his interest in emerging interdisciplinary fields combining materials engineering, machine learning, and power system applications.

Mr. G. Arun Kumar

Mr. G. Arun Kumar enriched his academic experience by participating in professional development programs focused on sustainability and modern electrical systems. He attended a workshop on Initiatives for Sustainability Practices in Institutions (ISPI-21) at Sri Rama Krishna Engineering College, Coimbatore, enabling him to gain practical insights into institutional sustainability approaches. He also took part in the FDP on Challenges in Evolving Power Systems conducted by Finolex Academy of Management and Technology, Maharashtra, followed by an FDP on Renewable Energy Conversion Technologies at TRP Engineering College, Chennai. His additional participation in FDPs such as Materials for Photonic Applications, Greening the Grid, and Challenges and Measures in Evolving Power Systems at MGIT Hyderabad further enhanced his understanding of sustainable energy technologies, grid modernization, and advanced photonic materials. These programs collectively demonstrate his dedication to strengthening competencies across renewable systems, sustainability, and modern power engineering.

Faculty Achievements:

Mrs. S. Sudha Rani

Mrs. S. Sudha Rani actively expanded her professional and pedagogical skill set by participating in a wide range of online courses, faculty development programs, and seminars during 2021–22. She engaged in FDPs on Challenges in Evolving Power Systems organized by Finolex Academy of Management and Technology, Renewable Energy Conversion Technologies at TRP Engineering College, and several MGIT-hosted programs including Materials for Photonic Applications, Greening the Grid, and Challenges and Measures in Evolving Power Systems. She further attended the FDP on Modern Trends in Power Electronics and their Applications at VJIT Hyderabad and the Solar Photovoltaic Training Programme conducted by the Advit Foundation, strengthening her foundation in renewable and emerging power system technologies.

Complementing her technical FDPs, she completed an extensive set of online certification courses through the Coursera Project Network, gaining expertise in creative and interactive teaching tools. These included Creating Engaging Presentations with Mentimeter, Visualizing and Collaborating with Popplet, Supporting Interactive Learning with Genially, Using Buncee for Online Teaching, and Unleashing Student Creativity with Buncee. In addition to her pedagogical development, she also completed professional and personal development courses such as The Science of Well-Being from Yale University, COVID-19 Contact Tracing from Johns Hopkins University, and Search Engine Optimization (SEO) with Squarespace. She also completed the certification on Accessing an EC2 Instance from the AWS Console offered through Coursera, enhancing her digital and cloud literacy.

Furthermore, she attended a seminar on Strategic Management of R&D and Innovation Ecosystems conducted by CBIT Hyderabad, gaining insights into institutional innovation and research strategies. Her extensive participation across technical FDPs, digital teaching tools, and professional development courses reflects her strong commitment to continuous learning, academic excellence, and innovative educational practices.

Mrs. Swathi Paliwal

Mrs. Swathi Paliwal enriched her academic exposure by participating in multiple national and AICTE–ATAL faculty development initiatives during 2021–22. She attended an International FDP on Modern Trends in Power Electronics and Their Applications at VJIT Hyderabad, where she gained insights into cutting-edge advancements in power electronics and control. She further strengthened her understanding of electric mobility through AICTE–ATAL FDPs such as Recent Trends in Electric Vehicles conducted by NIT Arunachal Pradesh and Green Technology for Sustainable Life organized by NIT Silchar, Assam. Her technical expertise was enhanced further through the FDP on Materials for Photonic Materials held at MGIT Hyderabad, allowing her to explore applications of photonics in modern engineering.

Faculty Achievements:

Her engagement continued with the FDP on Emerging Techniques in Modern Power Systems conducted in Udaipur, Rajasthan, and the FDP on Innovation and Experimental Learning Effectiveness hosted by Aravali Institute of Technical Studies. Alongside these FDPs, she attended impactful webinars delivered by the IEEE Power Electronics Society, including Adaptive EMC Design for Wide Bandgap Power Converters and Systematic Relationship of Power Converter Topologies through Graph Theory. These programs collectively broadened her exposure to power converter design, wide bandgap technologies, sustainable energy applications, and innovative teaching methodologies. Her participation reflects her commitment to staying current with technical advancements and contributing to evolving engineering practices.

Mr. H. Gururath

Mr. H. Gururath strengthened his technical foundation and research exposure by attending Faculty Development Programs and specialized webinars centered on modern power electronics and materials science during 2021–22. He participated in the FDP on Materials for Photonic Applications organized at MGIT Hyderabad, enhancing his understanding of photonic materials and their applications in advanced engineering systems. His engagement with evolving power electronics technologies continued through the technical webinar titled Power Electronics – A Driving Force for Electric Vehicles, hosted by Vignan Institute of Technology and Science, Hyderabad.

This session provided deeper insights into the role of power electronic converters, control strategies, and drive systems in the rapidly growing electric vehicle sector. Through these academic activities, Mr. Gururath demonstrated a clear commitment to continuous learning in emerging fields such as photonics, power converter technology, and electric mobility solutions, aligning his professional growth with modern industry trends.

Faculty Publications & Patents

Dr. P. Ram Kishore Kumar Reddy

Dr. P. Ram Kishore Kumar Reddy demonstrated strong research productivity in 2021–22 through multiple high-quality international journal publications. His collaborative work with S. Bhalukshmi and Dr. G. Arun Kumar on "Implementation of Modular Multi-Level Converter and Cascaded H-Bridge using SPWM" was published in the Turkish Online Journal of Qualitative Inquiry (TOJQI), Vol.12, Issue 9, August 2021, pp. 1934–1946, a peer-reviewed journal. He further contributed to "SVPWM Based PMSM using Model Reference Adaptive System," co-authored with Aredoy Meghana and Dr. P. Nagasekhar Reddy, also appearing in TOJQI, Vol.12, Issue 9. Another significant publication, "Direct Torque Control with Space Vector Pulse Width Modulation for Induction Motor Drives," was published in the International Journal of Engineering Research & Modern Education (IJERME), Vol.11, Issue 7, July 2021, consolidating his expertise in advanced motor control and power electronic converter design.

Dr. P. Chandrasekhar

Dr. P. Chandrasekhar contributed impactful research to the field of power systems and intelligent controls through two major international publications in 2021–22. His paper titled "Statistical Switching Overvoltages of 1200 kV UHV AC Transmission Line," co-authored with Ramchandra Reddy and Chandra Sekhar Patsa, appeared in the Journal of the Institution of Engineers (Series B), Volume 103, July 2021, pp. 189–195, indexed in Scopus. He also authored "Online Learning Based ANN Controller for Grid Interactive Solar PV System," published in Applied Sciences (SCI Indexed), Volume 11, Issue 17, September 2021, reflecting his expertise in artificial intelligence-based renewable energy control systems. Alongside these publications, Dr. P. Chandrasekhar achieved a significant milestone with the grant of his patent titled "The Smart Energy Grid Management System," registered under Patent Number 2021102282 and officially granted on 28 July 2021. This patent highlights his contribution to intelligent grid management, smart energy distribution, and advanced control strategies for modern power systems.

Dr. P. Nagasekhar Reddy

Dr. P. Nagasekhar Reddy expanded his research footprint through a well-received publication titled "Comparative Analysis of SVPWM Based PMSM using Model Reference Adaptive System," co-authored with Aredoy Meghana and Dr. Ram Kishore Kumar Reddy. The paper appeared in the Turkish Online Journal of Qualitative Inquiry (TOJQI), Vol.12, Issue 9, August 2021, pp. 1924–1934, and is peer-reviewed. His work contributes meaningful insights into advanced motor control using adaptive algorithms.

Faculty Publications & Patents

Mrs. N. Madhuri

Mrs. N. Madhuri contributed to the international research community through the publication "Performance Analysis of IM using Different PWM Techniques," authored with Swapnik Goud, K. Santhosh, and Shaik Maheboob. This study appeared in the International Journal of Innovative Science, Engineering & Technology, Volume 8, Issue 8, August 2021, pp. 318–328, demonstrating her involvement in advancements related to inverter control and induction motor performance.

Dr. P. Lakshmi Supriya co-authored the research article "Comparative Analysis of Solar Powered BLDC Motor using Various Converters," along with Sindhu Priya K. and Ch. Vinay Kumar, published in The Design Engineering Journal, Issue 7, 2021, Pages 11632–11643, indexed in Scopus. Her work addresses efficient converter selection for BLDC motor drives in solar-powered applications.

M. Nalini Devi

M. Nalini Devi published extensively across multiple high-quality journals in 2021–22. Her paper "Three Level Cascaded Inverter with Simplified Scalar PWM Algorithm," co-authored with R. Sirin Naik, appeared in the International Journal for Innovative Engineering and Management Research, Vol.10, Issue 08, August 2021, listed under UGC-CARE. Another publication, "Generalized Approach for DCPWM Based Dual Inverter Fed Open-End Winding DTC Drive," featured in IJRTE, Vol.10, Issue 02, 2021, categorized under Scopus. She also contributed to "Online Estimation of Power Quality of Grid Connected System using STATCOM," published in the International Journal of Huazhong University of Science and Technology, Volume 50, Issue 07, 2021, also Scopus-indexed, showcasing her engagement in modern inverter control and grid quality enhancement research.

Mr. G. Gopal

Mr. G. Gopal strengthened his research contributions with the paper "AC Chopper FED in Drive System using HBCC Technique with PF Correction," co-authored with M. G. Gopal and Narsimha Reddy. This work was published in the Journal of Analytical and Experimental Modal Analysis, Volume XIII, Issue IV, April 2021, recognized as peer-reviewed. The study offers advancements in power factor correction techniques within AC chopper-based drive systems.

Mr. Ch. Vinay Kumar

Mr. Ch. Vinay Kumar co-authored the paper "Comparative Analysis of Solar Powered BLDC Motor using Various Converters," along with Sindhu Priya K. and Dr. P. Lakshmi Supriya, published in The Design Engineering Journal, Issue 7, 2021, indexed in Scopus. His contribution focuses on optimizing converter topologies for BLDC motors in solar applications—a critical area in renewable energy integration.

Faculty Publications & Patents

Mr. G. Arun Kumar

Mr. G. Arun Kumar served as co-author on the impactful research article “Implementation of Modular Multi-Level Converter and Cascaded H-Bridge using SPWM,” alongside S. Bhalukshmi and Dr. P. Ram Kishore Kumar Reddy. This work was published in the Turkish Online Journal of Qualitative Inquiry (TOJQI), Vol.12, Issue 9, August 2021, pp. 1934–1946, a peer-reviewed publication. The study addresses advanced converter topologies relevant to HVDC and industrial drives.

Mrs. S. Sudharani

Mrs. S. Sudharani contributed to international research through her publication “Bi-Directional Converter for Flywheel Energy Storage Application,” co-authored with S. Sudha Rani. The paper appeared in IJEMR, Volume 10, Issue 08, August 2021, indexed in Elsevier SSRN. Her work explores advanced bidirectional converter configurations for high-efficiency energy storage systems.