

DEPARTMENT OF ELECTRICAL & ELECTRONICS ENGINEERING

R & D activities towards SDGs -

Funded Projects (Sample projects) Not Applicable

Research papers

SDG Mapping Key:

- **SDG 7:** Affordable and Clean Energy (Efficiency analysis of distribution utilities, power quality improvement, off-grid renewable inverters, load forecasting for grid optimization).
- **SDG 9:** Industry, Innovation, and Infrastructure (Data analysis for utility performance, advanced power converter design, resilient inverter topology, AI/ML for grid management).
- **SDG 11:** Sustainable Cities and Communities (Reliable off-grid power, efficient urban load forecasting and management).
- **SDG 12:** Responsible Consumption and Production (Efficiency analysis for reduced losses, enhanced power quality for efficient consumption).

Mapping of research papers with SDGs for CAY 2024-25

S. No.	Name of the Faculty	Title of the Paper	SDGs Addressed	SCI/Scopus/Conference
1	V. Ramaiah	Critical Analysis of Indian Electric Distribution Utilities Using DEA with Sensitivity Analysis	7, 9, 12	Scopus
2	Dr. B. Jagadish Kumar	Zeta Converter-Based Switched Mode Power Supply with Enhanced Power Quality	7, 9, 12	Scopus
3	Madhukar Rao Airineni, Pavan Kumar Chillappagari	Fault Resilient Ability of Reduced Switches Multi Level Inverter for Off Grid Applications	7, 9	SCI (Springer)
4	V. Ramana, Prabhu Kiran Konda, D. Rakesh Chandra, S. Surender Reddy	Short-Term Load Forecasting in Distribution Substation Using Autoencoder and Radial Basis Function Neural Networks: A Case Study in India	7, 9, 11	SCI (MDPI)

SDG Mapping Key:

- SDG 7: Affordable and Clean Energy (Wind energy, renewable integration, microgrids, power flow optimization).
- SDG 9: Industry, Innovation, and Infrastructure (Control systems, forecasting models, grid resilience, energy management algorithms).
- SDG 11: Sustainable Cities and Communities (Distribution network stability, outage management for resilience).
- SDG 12: Responsible Consumption and Production (Optimizing energy flow, efficient motor drives).
- SDG 13: Climate Action (Renewable energy systems, resilience against climate-induced outages, emission reduction through efficiency).

Mapping of research papers with SDGs for CAY-m1 2023-24

S. No.	Name of the Faculty	Title of the Paper	SDGs Addressed	SCI/Scopus /Conference
1	V. Rajagopal, Bochu Subhash	Optimal Gains for Control Voltage and Frequency in Standalone Wind Energy Conversion System	7, 9, 13	SCI (Springer)
2	B. Jagadish Kumar, P. Sai Vaibhav Likith Chandra, et al.	Certain Investigations on Modified Fuzzy-based Adaptive Controller for Mitigating the Deviations in Wind System	7, 9, 13	Scopus
3	Kosana V, Teeparthi K, Santhosh M, Bommididi BS	Hybrid attention-based temporal convolutional bidirectional LSTM approach for wind speed interval prediction	7, 13	SCI
4	Santhosh Madasthu, Badrul Chowdhury, et al.	Outage Forecast-based Preventative Scheduling Model for Distribution System Resilience Enhancement	9, 11, 13	Conference (IEEE PESGM)
5	B. Jagadish Kumar, et al.	Experimental Methodology to Optimize Power Flow in Utility Grid with Integrated Renewable Energy and Storage Devices Using Hidden Markov Model	7, 9, 12, 13	SCI (Taylor & Francis)
6	B. Jagadish Kumar, P. Sai Vaibhav Likith Chandra, et	Certain Investigations on Modified Fuzzy-based Adaptive Controller for Mitigating the Deviations in Wind System	7, 9, 13	Scopus

S. No.	Name of the Faculty	Title of the Paper	SDGs Addressed	SCI/Scopus /Conference
	al.			
7	G. Rajendar	Voltage Stability Analysis Of Radial Distribution Network Using Line Flow Index	7, 9, 11	Scopus
8	T. Praveen Kumar, K. Ajith, M. Srinivas, G. Sunil Kumar	Microgrid energy management with renewable energy using gravitational search algorithm	7, 9, 13	SCI (Springer)
9	B. Vijaykumar, Francis, Rajesh, Ansal	Enhanced artificial transgendor longicorn algorithm & recurrent neural network based enhanced DC-DC converter for torque ripple minimization of BLDC motor	7, 9, 12	Scopus

Conference publications:

SDG Mapping Key:

- SDG 7: Affordable and Clean Energy (Power electronics for EVs and grid support, inverter technologies).
- SDG 9: Industry, Innovation, and Infrastructure (Advanced inverter topologies, control algorithms, predictive analytics for grid infrastructure).
- SDG 11: Sustainable Cities and Communities (Electric vehicle technology, grid power quality improvement (DVR), and outage prediction for resilient urban power supply).
- SDG 13: Climate Action (Promoting electric transportation and enhancing grid reliability against climate-related disruptions).

S. No.	Name of the Faculty	Title of the Paper	SDGs Addressed	SCI/Scopus/Conference
1	C. Venkatesh, J. Siri chandana, et al.	5-phase Multilevel Inverter for EV Application	7, 9, 11, 13	Conference (IEEE)
2	Venkatesh Challa, Spandana Priya Banka, et al.	Five Phase Split-Source Inverter with Shifted Pulse Width Modulation	7, 9	Conference
3	V. Rajagopal, Vemireddy Nagamalleswari, Sabha Raj Arya	Truly-NTD-PLL Control Algorithm for DVR	7, 9, 11	Conference (IEEE)
4	V. Rajagopal, Vemireddy Nagamalleswari, Sabha Raj Arya	Control of DVR Using Multilayer Gamma Filter Under Non-Ideal Grid Conditions	7, 9, 11	Conference (IEEE)

S. No.	Name of the Faculty	Title of the Paper	SDGs Addressed	SCI/Scopus/Conference
5	Santhosh Madasthu, Abdullah Al Mamun, et al.	Ensemble Deep Learning Model for Power System Outage Prediction for Resilience Enhancement	9, 11, 13	Conference (IEEE)
6	Abdullah Al Mamun, Santhosh Madasthu, et al.	Outage Data Analytics for Correlating Resilience and Reliability	9, 11, 13	Conference (IEEE)

SDG Mapping Key:

- **SDG 2:** Zero Hunger (agricultural water pumping)
- **SDG 6:** Clean Water and Sanitation (water pumping systems)
- **SDG 7:** Affordable and Clean Energy (renewable energy systems, solar, wind, fuel cells)
- **SDG 9:** Industry, Innovation, and Infrastructure (power electronics, control algorithms, inverter topologies)
- **SDG 11:** Sustainable Cities and Communities (electric vehicles, smart grids, traction)
- **SDG 12:** Responsible Consumption and Production (energy management, storage, efficiency)
- **SDG 13:** Climate Action (renewable integration, grid stability, emissions reduction)

Mapping of research papers with SDGs for CAY-m2 2022-23

S. No.	Name of the Faculty	Title of the Paper	SDGs addressed	SCI/Scopus/Conference
1	V. Rajagopal, D. Sharath, et al.	Optimized Controller Gains Using Grey Wolf Algorithm for Grid Tied Solar Power Generation with Improved Dynamics and Power Quality	SDG 7, SDG 9	Scopus (Journal listed)
2	B. Jagadish Kumar	Certain Investigations on Current Ripple Free in A Single-Phase Isolated Converter for Fuel Cell Applications	SDG 7, SDG 9	Scopus (Journal listed)
3	Moulika Dandu, C. Venkatesh, Rajagopal Veramalla	Multilevel Inverter with Self-Balanced Switched Capacitor for Vehicle Application	SDG 7, SDG 9, SDG 11	Scopus (Journal listed)
4	Narasimha Rao Mucherla, Nagaraj Karthick, Airineni Madhukar Rao	Fault tolerant nine-level inverter topology for solar water pumping applications	SDG 6, SDG 7	Scopus (IJECE Journal)

S. No.	Name of the Faculty	Title of the Paper	SDGs addressed	SCI/Scopus/Conference
5	K. Vishalteja, T. Kiran, M. Santhosh	A novel dynamic selection approach using on-policy SARSA algorithm for accurate wind speed prediction	SDG 7, SDG 13	SCI (Elsevier Journal)
6	B. Jagadish Kumar, D. Vishal, et al.	Dynamic performance of solar PV array Fed water pumping system using Boost-buck converter Fed permanent magnet synchronous motor drive	SDG 6, SDG 7	Scopus (Journal listed)
7	R. Sunnysmithavani, B. Jagadish Kumar	Investigations on solar PV and battery storage using a novel configuration of a three-level NPC inverter with an innovative control technique	SDG 7, SDG 9	Scopus (Journal listed)
8	B. Jagadish Kumar, D. Vishal, et al.	Investigations on Solar PV Array Fed Water Pumping System using Permanent Magnet Synchronous Machine through Boost Buck Converter	SDG 6, SDG 7	Scopus (Journal listed)
9	C. P. Kumar, N. Karthick, A. M. Rao	Open-circuit fault resilient ability multi level inverter with reduced switch count for off grid applications	SDG 7, SDG 9	Scopus (IJECE Journal)
10	G. Rajendar	Modelling And Analysis Of Tcsc In Power System	SDG 7, SDG 9	Scopus (Journal listed)
11	G. Rajendar	Optimization Of Power System Performance Using Facts Devices	SDG 7, SDG 9	Scopus (Journal listed)
12	B. Vijay Kumar	Application of internet of things (IOT) for optimal energy management in distribution system using hybrid strategy: a SPOA-RBFNN strategy	SDG 7, SDG 9, SDG 11	Scopus (Springer Journal)
13	Syed Nikhat Asfia, F	Fuzzy based intelligent	SDG 7,	Scopus (Journal listed)

S. No.	Name of the Faculty	Title of the Paper	SDGs addressed	SCI/Scopus/Conference
	Sultana, et al.	MPPT controller for solar based traction applications	SDG 9, SDG 11	

Conference publications:

SDG Mapping Key:

- SDG 2: Zero Hunger (solar water pumping for agriculture).
- SDG 4: Quality Education (innovative teaching methods, Education 5.0).
- SDG 6: Clean Water and Sanitation (water pumping systems).
- SDG 7: Affordable and Clean Energy (electric vehicles, solar power, converters, grid stability).
- SDG 9: Industry, Innovation, and Infrastructure (power electronics, forecasting, FACTS devices, educational innovation).
- SDG 11: Sustainable Cities and Communities (electric transport, smart grid protection, stable power supply).
- SDG 13: Climate Action (promotion of electric vehicles and renewable energy integration).

S. No.	Name of the Faculty	Title of the Paper	SDGs addressed	SCI/Scopus/Conference
1	G. Rajendar	Design and development of Mini electric bike	7, 9, 11, 13	Conference
2	Venkatesh, Sudhakar A V V, Manjusree Y	ANFIS Based VSC Drive Solar Fed Water Pump with Zeta Converter	2, 6, 7	Conference
3	Venkatesh, Sudhakar A V V, Manjusree Y	SVC compensated transmission line protection using wavelet approach	7, 9, 11	Conference
4	C. Venkatesh, Gatla Vaishnavi, et al.	Single-Input Dual-Output Three-Level DC-DC Converter	7, 9	Conference
5	Venkata Ramana, D. Rakesh Chandra, et al.	Short-Term Load Forecasting in DSO Substation Networks with Dimensionality Reduction Techniques	7, 9, 11	Conference
6	P. Nagarjuna Reddy, K. Ashoka Reddy	Outcome-based lecture schedule for Education 5.0 and implementation	4, 9	Conference
7	Dr. B. Vijay Kumar	The impact of serial controllable FACTS devices on voltage stability	7, 9, 11	Conference