SCHOOL OF ELECTRICAL ENGINEERING

Presented by

Dr. Sriparna Roy Ghatak

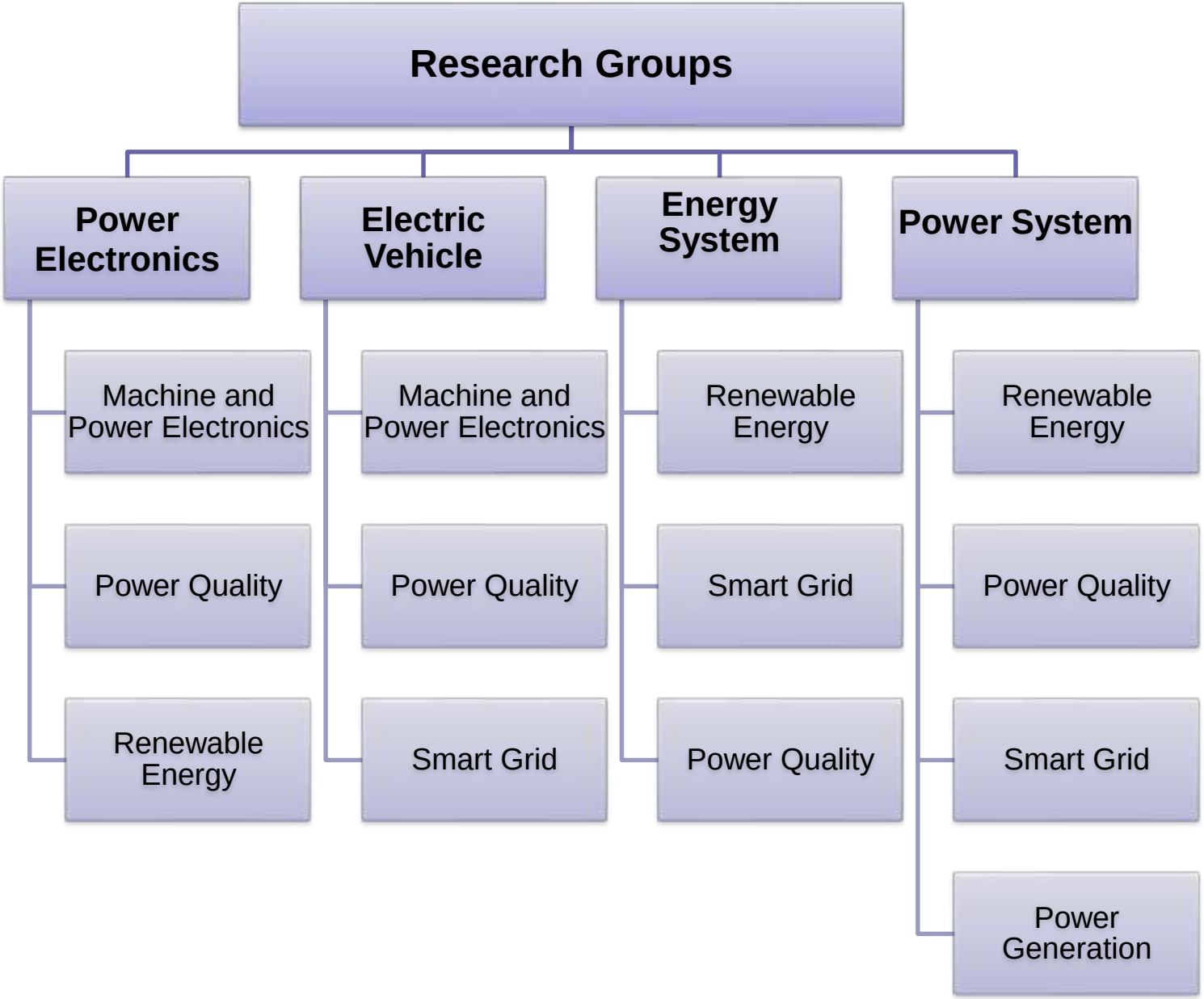
Ph.D. Program Head
School of Electrical Engineering

SCHOOL RESEARCH PROFILE

Research Thrust areas

- Machine and Power Electronics
- Electric Vehicle
- Power Quality
- Renewable Energy
- Smart Grid
- Power Generation

Research Groups



Power Electronics Research Group (SDG 7,9)

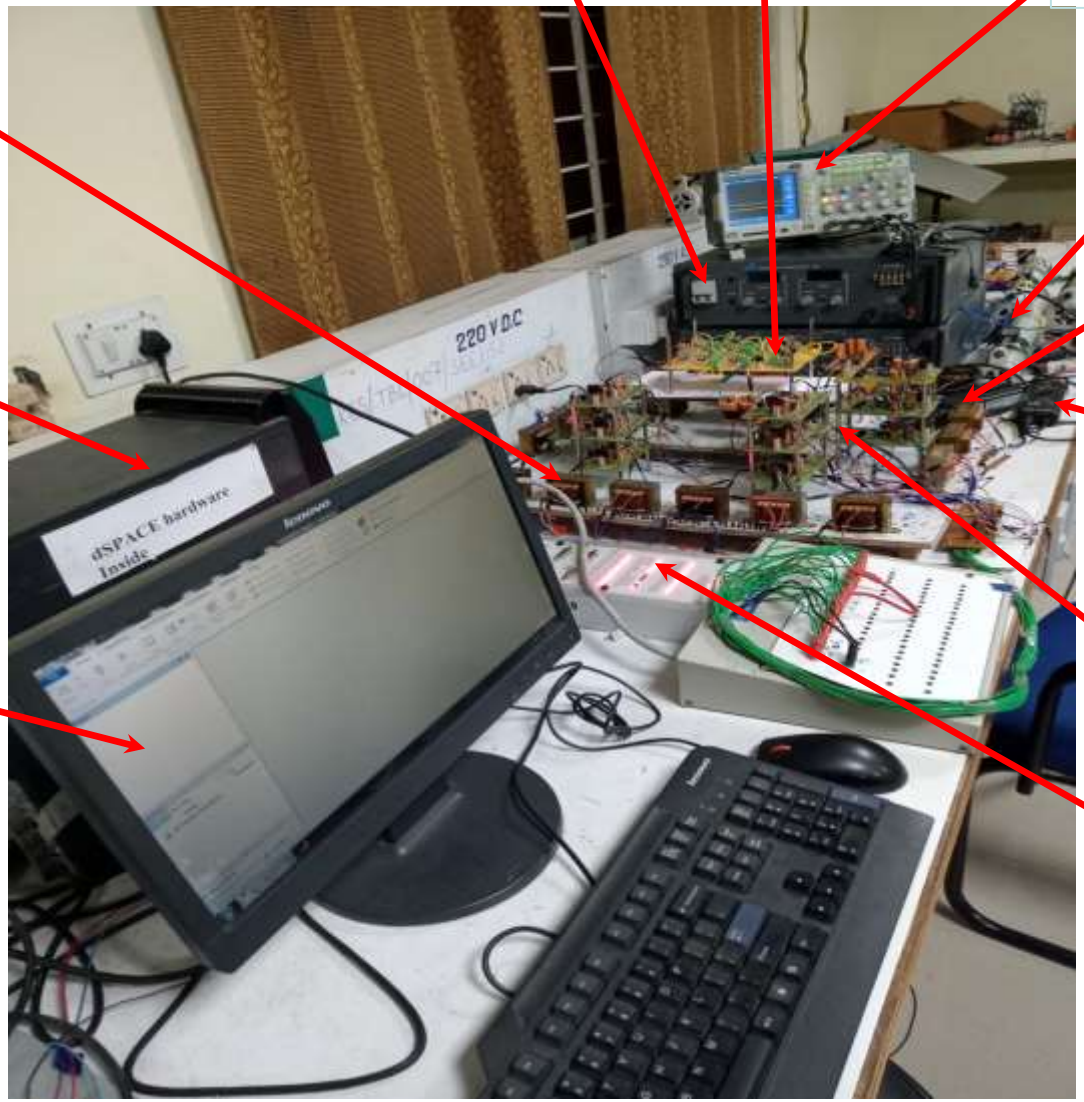
Power Electronics Research Lab

Research Areas

- ✓ Topology development for Multilevel Inverters
- ✓ Topology development for DC--DC converters
- ✓ Interfacing of power converters with renewable sources
- ✓ Matrix converters
- ✓ Switched Capacitor Converters
- ✓ Z-source Inverters
- ✓ Machine control using developed converters
- ✓ Advanced PWM techniques for power converters
- ✓ Advanced filter design for power quality improvement

Research Lab is equipped with state-of-the-art instruments such as DSpace 1104 controller, DC regulated power supplies, Hall sensor current probes, Tektronix TPS 2014B DSOs, wavect controller, MSO, and high voltage isolated probes.

Power Electronics Research Group (SDG 7,9)



Developed MLI test bench

Power Electronics Research Group (SDG 7,9)

Research Team members

Faculty Members:

1) Prof.. Ankit Soni : Research on multilevel inverters and their control
2) Dr. Ranjeeta Patel: Research on developing novel DC to DC converter structures
3) Prof. Subrat Behera: Research on novel DC to DC converters and their control
4) Dr. Byamakesh Nayak: Research on high gain non-isolated DC-DC converters and power quality
5) Dr. Banishree Misra: Research on Adaptive filter design and power quality improvement
6) Dr. Snehalika: research on bidirectional DC-DC converters for Electric Vehicle Charging

PhD Research Scholars:

Poonam Tripathy: Research on developing novel DC to DC converter and their control
Amruta Abhishek- Converter Design
Somya Biswal- Energy Management

Post Graduate and Graduate Students:

1) Sudip Nandi: Research on switched capacitor multilevel inverters
2) Ravindu Athapaththu: Working on novel inverter structures
3) Ariha Sahoo: working on switched capacitor multilevel inverters

Notable Alumni:

1) Dr. Diptish Saha: Postdoctoral Research Fellow at Center for Research on Microgrids (CROM), Aalborg University
2) Dr. Neha Aarzoo: Senior Engineer at Schneider Electric, Bengaluru, India

Collaborative activities:

Joint Publication

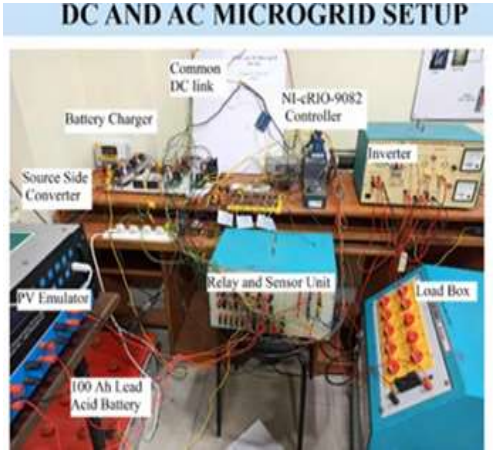
1) Vinod Khadkikar, Khalifa University, UAE
2) Akshay Kumar Rathore, SIT, Singapore
3) Joseph M.Gurrero, Alborg University Denmark
4) Anup Kumar Panda, NIT Rourkela
5) P.K Sadhu, ISM Dhanbad

Power Electronics Research Group (SDG 7,9)

Major Publication

1) Roy, T., Nandi, S., Patel, R., Misra, B., & Nayak, B. “Investigation of an Extendable Multi-Source Switched Capacitor Multilevel Inverter with Reduced Device Count”. ***IEEE Journal of Emerging and Selected Topics in Power Electronics*** *2024 (IF 4.4 SCI-E)*.
2) Tapas Roy and P. K. Sadhu, "A Step-Up Multilevel Inverter Topology Using Novel Switched Capacitor Converters With Reduced Components," in ***IEEE Transactions on Industrial Electronics***, vol. 68, no. 1, pp. 236-247, Jan. 2021,. *(IF 7.7, SCI-E)*
3) Tapas Roy, M. W. Tesfay, B. Nayak and C. K. Panigrahi, "A 7-Level Switched Capacitor Multilevel Inverter With Reduced Switches and Voltage Stresses," in ***IEEE Transactions on Circuits and Systems II: Express Briefs***, vol. 68, no. 12, pp. 3587-3591, Dec. 2021,. *(IF 4.4, SCI-E)*
4) Tapas Roy, P. K. Sadhu and A. Dasgupta, "Cross-Switched Multilevel Inverter Using Novel Switched Capacitor Converters," in ***IEEE Transactions on Industrial Electronics***, vol. 66, no. 11, pp. 8521-8532, Nov. 2019, doi: 10.1109/TIE.2018.2889632. *(IF 7.7, SCI-E)*
5) T. R. Choudhury, B. Nayak and S. B. Santra, "A Novel Switch Current Stress Reduction Technique for Single Switch Boost-Flyback Integrated High Step Up DC–DC Converter," in ***IEEE Transactions on Industrial Electronics***, vol. 66, no. 9, pp. 6876-6886, Sept. 2019. *(IF 7.7, SCI-E)*
6) Tapas Roy, P. K. Sadhu and C. K. Panigrahi, “A switched-capacitor-based step-up multilevel inverter and its cascaded configuration using reduced number of components.” ***International Transactions on Electrical Energy Systems***, 31(2), 1-23, 2021 DOI: 10.1002/2050-7038.12721*. (IF 2.3, SCI-E)*

Energy System Research Group (SDG 9,11)



Research Areas are

- ✓ Energy Management Scheme in PV Powered Greenhouse
- ✓ Intelligent control Techniques of Grid-Connected Photovoltaic System
- ✓ Solar Power forecasting with Machine Learning Techniques
- ✓ Control technique and requirements of DC microgrids
- ✓ Partial shading mitigation techniques of PV Array
- ✓ To enhance hands-on experience and practical deployment for students, KIIT DU has signed a MoU with National Instruments.

The Energy system Research Lab is equipped with state-of-the-art instruments such as NI-cRIO 9082, Spartan-6 Lab-View based board. NI-9401 (Digital input output module), NI 9402 (High Speed digital input output module), 2 power supply, NI 9263, NI 9205, NI 9375, 24 Volt, 100Ah Lead acid Battery, Solar Panel of 500-Watt, Relay Box, Single Phase VSI, Single phase Rectifier, Buck-Boost Converter,250 W PMSG wind system, PV Emulator 1kW.

Energy System Research Group (SDG 9,11)

Research Team members

Faculty Members:

1) Dr. Alivarani Mohapatra: Partial shading mitigation techniques of PV Array
2) Dr. Babita Panda: Solar Power forecasting with Machine Learning Techniques
3) Dr. Pradeep Kumar Sahu: Current Control Structures for Grid-Connected Photovoltaic System
4) Dr. Arjyadhara Pradhan: Renewable energy system and Energy audit and management
5) Dr. Sarita Samal: Power Quality

PhD Research Scholars:

1) Mathew: Robust performance analysis of linear & non-linear controllers for a stand-alone PV system
2) C. Saiprakash: Performance Enhancement of Partially Shaded Photovoltaic Array

Post Graduate and graduate Students:

1) Sameer Kumar Behera: MPPT Technique for PV
2) Theophilus A T Kambo: Reconfiguration Approach to Reduce Power Loss In PV Array

Collaborative activities

Joint Publication

1) Dr. Yam Siwakoti, University of Technology Sydney
2) Dr.Tsorng-Juu Liang, National Cheng-Kung University, Tainan, Taiwan
3) Dr. Frede Blaabjerg, Aalborg University, Denmark
4) Sanjeevikumar Padmanaban, Aarhus University, Herning, Denmark

Joint Funded Project

Dr. Debashis Chatterjee Jadavpur University, India
(Project granted under TARE scheme of DST, SERB)

Energy System Research Group (SDG 9,11)

Major Publication

1) Saiprakash, Chidurala, S. Ramana Kumar Joga, Alivarani Mohapatra, and Byamakesh Nayak. "Improved fault detection and classification in PV arrays using Stockwell transform and data mining techniques." ***Results in Engineering, Elsevier*** 23 (2024): 102808. (*SCI-E, IF 6.0*)
2) Mahato, Gopal Chandra, Soumya Ranjan Biswal, Tanmoy Roy Choudhury, Byamakesh Nayak, and Subhendu Bikash Santra. "Review of active power control techniques considering the impact of MPPT and FPPT during high PV penetration." ***Solar Energy, Elsevier*** 251 (2023): 404-419. (*SCI-E, IF 6.0*)
3) Santra, Subhendu Bikash, Debashis Chatterjee, and Yam P. Siwakoti. "Coupled inductor based soft switched high gain bidirectional DC-DC converter with reduced input current ripple." ***IEEE Transactions on Industrial Electronics*** 70, no. 2 (2022): 1431-1443. (*SCI-E, IF 7.5*)
4) Santra, Subhendu Bikash, Arunava Chatterjee, Debashis Chatterjee, Sanjeevikumar Padmanaban, and Krishnatreya Bhattacharya. "High efficiency operation of brushless DC motor drive using optimized harmonic minimization based switching technique." ***IEEE Transactions on Industry Applications*** **5**8, no. 2 (2022): 2122-2133. (*SCI-E, IF 4.2*)
5) Santra, Subhendu Bikash, Makireddi Ramana, and Debashis Chatterjee. "Performance Analysis of Novel Bidirectional DC-DC Converter With LD Based Modified GaN-FET Driver." ***IEEE Transactions on Industry Applications*** 57, no. 5 (2021): 5199-5214. (*SCI-E, IF 4.2*)
6) Santra, Subhendu Bikash, Debashis Chatterjee, and Tsorng-Juu Liang. "High gain and high-efficiency bidirectional DC–DC converter with current sharing characteristics using coupled inductor." ***IEEE Transactions on Power Electronics*** 36, no. 11 (2021): 12819-12833. (*SCI-E, IF 6.6*)

Patents Granted

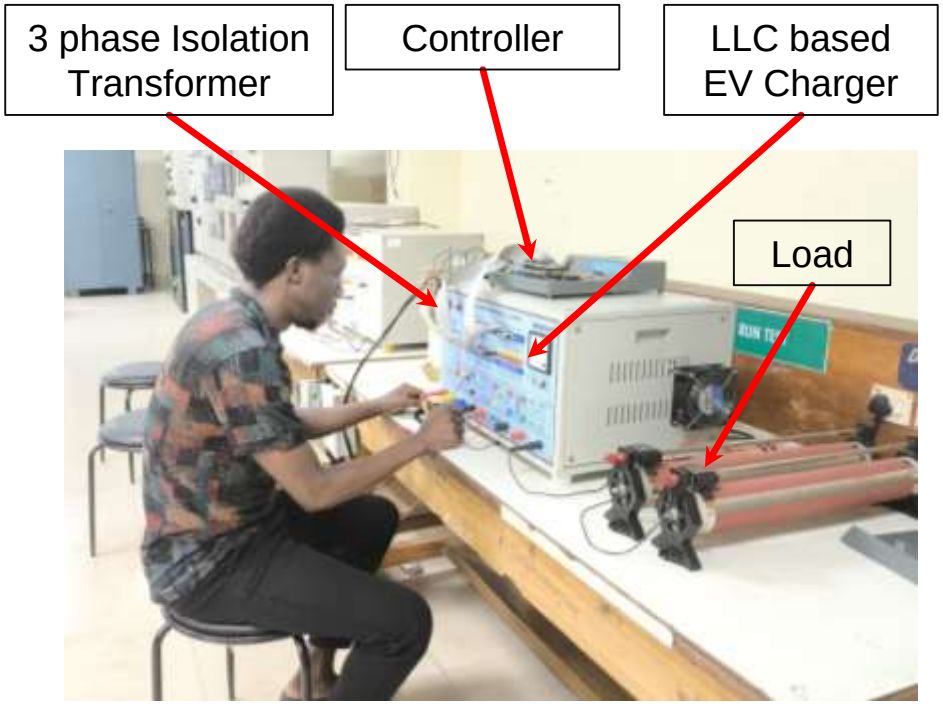
1. Solar based double channel water purification system for rural people. 2021
2. Portable Apparatus for generating electric energy using Peltier effect, 2021

Electric Vehicle Research Group (SDG 7, 9, 11)

- ✓ Major areas includes, the design of compact and high-efficient wireless chargers, innovative magnetic couplers for the wireless charging, and the application of data driven solution for the implementation.
- ✓ Our research extends to development of energy management strategies for green hydrogen-based charging infrastructure.

Research Areas are

- ✓ Wireless Charging
- ✓ Energy Management System for EVs charging and discharging
- ✓ Charging Infrastructure considering renewable source and green hydrogen as storage



Electric Vehicle Research Group (SDG 7, 9, 11)

Research Team members

Faculty Members:

1) Dr. K.V.V.S.R. CHOWDARY: Wireless Charging Systems for EVs.
2) Dr. Sriparna Roy Ghatak: Development of Renewable integrated Charging Infrastructure
3) Dr. S. Kundu: Energy Management of Vehicle to grid-based Charging Infrastructure

PhD Research Scholars:

1) Sharmistha Nandi: Research on Allocation of EV Charging system in distribution networks
2) Maneesh Yadav: Electric Vehicle Charge/ Discharge scheduling
3) Sasmita Tripathy: Energy management of Electric Vehicle charging system

Post Graduate and Graduate Student:

1. Edwin Boima Fahnbulleh: Reliability analysis of network considering EV Charging
2. Jay Atal- Wireless EV Charging
3. Abhirup Sen- Power Quality

Collaborative activities

Joint Publication

1) Dr. Sanjeevikumar Padmanaban Professor, University of South-Eastern Norway | Murdoch University, Perth, Australia
1) Dr. Kundan Kumar, NIT Jamshedpur
2) Dr. Subrata Banerjee, NIT Durgapur
3) Dr. Parimal Acharjee, NIT Durgapur

Joint Funded Project

1) Dr. C.N Bhende, IIT Bhubaneswar (Project granted under TARE scheme of DST, SERB)
2) ANRF, Mission for Advancement in High-impact Areas (MAHA) : EV-Mission (Under Review)

Electric Vehicle Research Group (SDG 7, 9, 11)

Major Publication

1) Sharmistha Nandi, Sriparna Roy Ghatak, Surajit Sannigrahi, and Parimal Acharjee. "Coordinated planning and operation of PV-hydrogen integrated distribution network incorporating daily-seasonal green hydrogen storage and EV charging station." ***International Journal of Hydrogen Energy, Elsevier*** 90 (2024): 134-158. (*SCI-E, IF 8.1*)
2) Kantipudi VVSR Chowdary, Kundan Kumar, Byamakesh Nayak, Abhay Kumar, and Manuele Bertoluzzo. "Dynamic wireless charging performance enhancement for electric vehicles: Mutual inductance, power transfer capability, and efficiency." ***Vehicles*** 5, no. 4 (2023): 1313-1327. (*SCI-E, IF 2.4*)
3) Sharmistha Nandi, Sriparna Roy Ghatak, Parimal Acharjee, and Fernando Lopes. "Multi-Scenario-Based Strategic Deployment of Electric Vehicle Ultra-Fast Charging Stations in a Radial Distribution Network." ***Energies*** 17, no. 17 (2024): 4204. (*SCI-E, IF 3.0*)
4) Ramesh Bonela, Sriparna Roy Ghatak, Sarat Chandra Swain, Fernando Lopes, Sharmistha Nandi, Surajit Sannigrahi, and Parimal Acharjee. "Analysis of Techno–Economic and Social Impacts of Electric Vehicle Charging Ecosystem in the Distribution Network Integrated with Solar DG and DSTATCOM." ***Energies*** 18, no. 2 (2025): 363. (*SCI-E, IF 3.0*)
5) Kantipudi VVSR Chowdary, Kundan Kumar, and Byamakesh Nayak. "A comprehensive examination of shielding and core influence through finite element analysis for the dynamic wireless charging magnetic coupler." ***e-Prime-Advances in Electrical Engineering, Electronics and Energy, Elsevier*** 7 (2024): 100462.

Power System Research Group (SDG 7, 11)

- ✓ **Research Lab is equipped with following licensed software ETAP, Power World. Mi Power, Matlab**
- ✓ **Major Hardware equipment's include Adaptive Power Factor Controller, Static Var Compensator, Numerical Relays**
- ✓ **To enhance hands-on experience and practical deployment for students, KIIT DU has signed an MoU with PRDC Bangalore**.

Research Areas are

- ✓ Power System Optimization
- ✓ Micro Grid Protection
- ✓ Power quality Improvement
- ✓ Protection of Overhead transmission line and Underground Cable
- ✓ Cyber security and artificial intelligence application in power system
- ✓ Advanced power flow control

Power System Research Group (SDG 7, 11)

Research Team members

Faculty Members:

1) Dr. Chinmoy Kumar Panigrahi: Power Electronics and Computational Intelligence Application in Power System
2) Dr. Sarat Chandra Swain: Soft computing application in power system
3) Dr. Manoj Kumar Maharana: Optimization Technique application in Power System
4) Dr. Padarbinda Samal: Soft Computing application in Power System
5) Dr. Subrat Kumar Barik: Micro grid Protection
6) Dr. Subodh Kumar Mohanty: Protection of FACTS Compensated Transmission line integrated with Large Scale Wind Farm and Solar PV System
7) Prof. Tapaswini Biswal: Micro Grid protection, High impedance Fault detection

PhD Research Scholars:

1) Mitali Samal: Frequency control of renewable integrated power system
2) Pradosh Mishra: Power Quality assessment
3) Mathew Tobla: Load frequency control of deregulated system
4) Asit Sahoo: Power system protection

Post Graduate and graduate Students:

1) Spiel Sahoo : Detection of high impedance faults in power system
2) Sukalp Hota: Solar Forecasting using AI/ ML

Collaborative activities

Joint Publication

1) Dr. Paresh Kumar Nayak , IIT Dhanbad
2) Pallav Kumar Bera Western Kentucky University KY, USA
3) Hassan Haes Alhelou, Massachusetts Institute of Technology, Cambridge, MA, USA
4) Arvind Routray, IIT Kharagpur

Power System Research Group (SDG 7, 11)

Major Publication

1) Mohanty, Subodh Kumar, Srikant Mohapatra, and Pierluigi Siano. "An Improved Protective Relaying Technique for Transmission Line Connected With UPFC and DFIG-Based Wind Farm." ***IEEE Transactions on Industrial Informatics*** (2024). (*SCI-E, IF 11.7*)
2) Gupta, Deepak Kumar, Geetanjali Dei, Ankit Kumar Soni, Amitkumar V. Jha, Bhargav Appasani, Nicu Bizon, Avireni Srinivasulu, and Philibert Nsengiyumva. "Fractional order PID controller for load frequency control in a deregulated hybrid power system using Aquila Optimization." ***Results in Engineering, Elsevier*** 23 (2024): 102442. (*SCI-E, IF 6.0*)
3) Mohanty, Subodh Kumar, Paresh Kumar Nayak, Pallav Kumar Bera, and Hassan Haes Alhelou. "An enhanced protective relaying scheme for TCSC compensated line connecting DFIG-Based wind farm." ***IEEE Transactions on Industrial Informatics*** 20, no. 3 (2023): 3425-3435. (*SCI-E, IF 11.7*)
4) Mohanty, Subodh Kumar, Subhendu Bikash Santra, and Pierluigi Siano. "Faulty phase identification and ground detection in TCSC compensated lines integrated with wind farms." ***International Journal of Electrical Power & Energy Systems*** 153 (2023): 109383. (*SCI-E, IF 5.0*)
5) Dei, Geetanjali, Deepak Kumar Gupta, Binod Kumar Sahu, Amitkumar V. Jha, Bhargav Appasani, Hossam M. Zawbaa, and Salah Kamel. "Improved squirrel search algorithm driven cascaded 2DOF-PID-FOI controller for load frequency control of renewable energy based hybrid power system." ***IEEE Access*** 10 (2022): 46372-46391. (*SCI-E, IF 3.4*)
6) S. Sannigrahi, S. R. Ghatak and P. Acharjee, "Coordinated Planning of Distribution System With RES, DSTATCOM, and Protective Devices," in ***IEEE Transactions on Industry Applications***, vol. 57, no. 4, pp. 4294-4305, July-Aug. 2021. (*SCI-E, IF 4.2*)

Granted Patents

1) An IOT Based Quality Analyzing System for Rectifying Faults in an Electrical Distribution System, 2020
2) Portable apparatus for underground fault detection 2021

Publications Statistics

H-index of school = 36, Citation = 8454, Total Scopus Indexed publications = 1219

List of reputed journals and impact factor

Sl. No.	Journal Name	Impact Factor	Number
1	IEEE Transactions on Industrial Electronics	7.5	4
2	IEEE Transactions on Industrial Informatics	11.7	2
3	IEEE Transactions on Power Electronics	6.6	1
4	IEEE Transactions on Industry Applications	4.2	3
5	IEEE Journal of Emerging and Selected Topics in Power Electronics	4.4	1
6.	IEEE Transactions on Circuits and Systems II: Express Briefs	4.4	1
7.	IEEE Systems Journal	4.0	2
8.	International Journal of Hydrogen Energy, Elsevier	8.1	1
9.	International Journal of Electrical Power & Energy Systems, Elsevier	5.0	1
10.	Results in Engineering, Elsevier	6.0	2
11.	Renewable and Sustainable Energy Review	16.3	1

Total Funded Projects completed till date

SL. No	Title	Funding Agency	Total Sanctioned Amount	Year
1	Maximum Power Point Tracking of Solar Photovoltaic System Under Partial Shading Condition	The Institute of Engineers	Rs1,00,000	2018
2	Design and implementation of PV MPPT Controller with DC-DC converter used for lighting in remote villages	The Institute of Engineers	Rs. 50,000	2019
3	Design and implementation of novel PV and Z source inverter topology used for water pumping	The Institute of Engineers	Rs1,00,000	2019
4	Performance Improvement of Solar Powered Water Pumping System for Rural Application by using Fish Search Optimization MPPT Technique	The Institute of Engineers	Rs. 20,000	2020
5	Design and implementation of Hybrid generation system used for rural electrification	BPUT (Odisha), under CRIS scheme	Rs.215000	2021
6	Development of cost-effective energy management strategies for a green hydrogen based electric vehicle charging station.	DST-SERB under TARE scheme	Rs.1830000	2024
7	Development of GaN-FET Based high efficiency Bidirectional DC-DC Converter with zero input current ripple for PV application	DST-SERB under TARE scheme	Rs.1830000	2024

Patent

Granted Patents		
Sl. No.	**Title of Invention**	**Year**
1	Solar based double channel water purification system for rural people.	2021
2	Portable apparatus for underground fault detection	2021
3	Intelligent Circuit portable testing apparatus for servo motor	2021
4	Automatic intelligent switching enables IoT-based fire alarm system	2022
5	Portable Apparatus for generating electric energy using Peltier effect	2022
6	AI Based Sensor Integrated Helmet for Construction site	2022
7	Photovoltaic cleaning and cooling system	2022
8	Wireless Communication device to generate alert message	2023
9	Artificial Intelligent based Heart Monitoring device for sports	2024
10	Onsite Automated Soil Testing System	2024

Total Granted Patents	Total Published Patents
10	**50**

Consultancy activities/ Skill development/ Revenue Generation

Consultancy Activities

Name of Consultancy project	Consulting/Sponsoring Agency	Revenue Generation	Number of Participants
Skill development Training	Vedanta Limited	Rs. 4,61,17,845.6	121
CSR support for employability of underprivileged youth	Steel Authority of India Limited	Rs. 57,64,050	57
CSR support	Steel Authority of India Limited	Rs. 40.00,000	40

Conferences/ FDP Organized by School

Conference Organized by school

Title	Sponsor	Date
International Conference on Emerging Trends and advances in Electrical Engineering and Renewable energy	Springer	5-6th March, 2020
1st International Conference on Power Electronics and Energy (ICPEE)	IEEE Kolkata Section and IEEE Industrial Application society	2-3rd Jan, 2021
1st International Conference on Smart Technologies for Power and Green Energy (STPGE)	Springer	12-13th Feb, 2022
3rd IEEE International Conference on Smart Technologies for Power, Energy and Control (STPEC)	IEEE Bhubaneswar Subsection and IEEE Industrial Application society	10-13th Dec, 2023
3rd IEEE International Conference on Industrial Electronics: Developments & Applications (ICIDeA)	IEEE Bhubaneswar Section and IEEE Industial Electronics Society	21st -22nd Feb, 2025

FDP Organized by school

Title	Sponsor	Date
Electric Vehicle and Smart Grid: A path towards Sustainable Energy	AICTE-ISTE	17-23 rd December 2021
Challenges and Development in Deregulated Electricity Systems, Industrial Automation and Cyber Security	Academic and Administrative Development Centre (AIU-AADC)	9th to 13th April 2024

Ph. D Awarded

1.	Sarat Chandra Swain	Application of Computation Intelligent Techniques to Power System Problems.	2010
2	Asini Kumar Baliarsingh	Improvement of Dynamic & Transient Stability of Power System using FACTs controller.	2010
3	Byamkesh Nayak	Studies on some aspects of the indirect vector control of 3 Phase Induction Motor Drive.	2011
4	Nirmala Soren	Some studies on Renewable Energy Sources and its Management.	2011
5	Akhilesh Arvind Nimje	Some studies on Application of FACTs Controller in Power System Problems.	2011
6	Ranjan Keshari Pati	Some studies on Computational Intelligent Technique in Power System problems.	2014
7	Subhanarayan Sahoo	Frequency and Time Domain behaviour of modified $CaTiO_3$ Nano ceramics for Thermistor Application.	2014
8	Srikanta Mohapatra	Bio - Inspired Computing for TCSC and SSSC based series FACTs Controllers for Power System Stability Enhancement.	2014
9	Saswati Swapna Dash	Modeling, Inductor's ESR Analysis, Boundary control and applications of Non Minimum Phase DC-DC Converters.	2015
10	Sreedhar Madichetty	Some Studies on design Aspects & Experimental Analysis of Modular Multilevel Converter.	2015
11	Priyanka Kar	Dynamic Stability Improvement of Power System using FACTs based controllers.	2016
12	Satya Ranjan Jena	Studies on Different Current Control Technique to reduce Harmonics in Grid connected PV System.	2016
13	Pratyasha Tripathy	A Study on the Energy Security in Rural India.	2016
14	Mrutuynjay Das	Some Studies on Control Strategies for enhancement of Output Power in Solar PV System.	2017
15	Babita Panda	Some studies on control aspects of grid connected P V System.	2017
16	Jagdish Chandra Pati	Application of Computational Intelligent technique in Electrical System Problem.	2017
17	Nibedita Swain	Analysis and Performance of Power Converters in PV System by using different Control Strategies.	2017
18	Subhendu Pati	Fault Detection in Transmission line and Adaptive setting of Distance relay.	2017

Ph. D Awarded

19	Binod Kumar Prusty	Some Studies on Power Quality Analysis in Hybrid Energy System.	2017
20	Lopamudra Mitra	Design and performance analysis of a single switch high gain DC-DC Converter for Solar PV Applications.	2017
21	Prabhash Nanda	Some Studies on Monitoring of Voltage Profile in a Modern Power System.	2018
22	Ritesh Dash	Design and Performance Analysis of Current Controlled Techniques for Grid Connected Solar Photovoltaic System.	2018
23	Arjyadhara Pradhan	Design and Comparison of Maximum Power Point Tracking Techniques for Photovoltaic Standalone Systems	2018
24	Sushmita Das	Some Studies on Application of Computational Techniques to improve the Energy Performance of a Building	2018
25	Rudra Narayan Dash	Some Studies on Applications of Computational Intelligence Techniques for the diagnosis of different faults in a 3 Phase Induction motor.	2018
26	Banishree Misra	Analysis of Filters for Signal Conditioning and Power Quality Improvement under Distorted Grid Conditions	2018
27	Tanmoy Roy Choudhury	Modeling, Analysis and Design of High Gain Non-isolated DC-DC Converters.	2018
28	Rudranarayan Senapati	Power Quality Improvement through Custom Power Devices in Distributed Generation Environment.	2018
29	Lipika Nanda	Symmetrical and asymmetrical cascaded multilevel inverter with reduced number of switches and DC supply.	2019
30	Shobha Agarwal	Some Studies on Protection Scheme in HVDC Lines using AI Techniques.	2019
31	Sanjay Kumar Mishra	Advanced Techniques of Fault Detections and Classification in a Compensated Transmission Lines	2019
32	Sujit Kumar Bhuyan	Modeling and Simulation of Hybrid Energy Systems Connected to Grid	2019
33	Srikanta Kumar Dash	Operation & Control of Solar and Wind hybrid system Synchronized to AC grid.	2020
34	Ramakanta Jena	Performance Analysis and Power Transfer Enhancement of Long Transmission Line using Computational Intelligent Techniques	2020
35	Ganesh Prasad Khuntia	Optimal Placement And Coordinated Control Of STATCOM-DFIG Grid Interconnected System	2021
36	Subhashree Priyadarshini	Application of Heuristic Algorithms to Optimal Phasor Measurement Unit (PMU) Placement in Modern Power Systems	2021

Ph. D Awarded

37	Sanhita Mishra	Transient Modelling and Fault Analysis of Underground Cable	2022
38	Kashinath Jena	Step up Multilevel inverters with self balanced Switched capacitors	2022
39	Subashranjan Kabat	Faultride through Technique for Grid Connected Double fed Induction Generator(DFIG)	2022
40	Mitali Ray	Sustainable Heating, Ventilation and Air Conditioning Systems (HVAC) in a Building using Artificial Neural Networks	2022
41	Anurekha Nayak	Load Frequency Analysis of Multi Source Multi Area Power System	2022
42	Sunita Pahadasingh	Load Frequency Control Strategies in Power System Integrated with Renewables using Meta-heuristic Techniques	2022
43	Teki Vamsee Krishna	Analysis and Balancing of Battery State of Charge in Hybrid PV-Wind with Battery Storage System	2022
44	Bibhu Prasad Ganthia	Modeling of Modified Type-III Wind Energy Conversion System for Power Smoothing Control	2022
45	Nivedita Pati	Robust Performance Analysis of Linear and Non-Linear controllers for a double stage Stand-Alone PV system	2022
46	Sangeeta Sahu	Performance Analysis of Permanent Magnet Synchronous Motor For Application In Electric Vehicles	2023
47	Bhabani Patnaik	Effect of Greenhouse Gas on the Performance of Solar Photovoltaic System	2023
48	Bijaya Kumar Mohapatra	Load frequency control in deregulated power system integrated with RES using Intelligent Techniques	2023
49	Jagannath Paramguru	Some Studies in Dynamic Economic Dispatch by Using Computational Intelligence Approach Incorporating Microgrid	2023
50	Venkata Satya Durga Manohar Sahu	Application of meta-heuristic algorithms for optimal control of manipulator	2023
51	Debasish Pattanaik	Design and performance analysis of solar pv grid connected system using computational intelligence techniques	2023
52	Chidurala Saiprakash	Performance Enhancement and Fault Analysis of Photovoltaic Array under Partial Shading Conditions	2023
53	S RAMANA KUMAR JOGA	Diagnosing Power System Fault using Signal Processing and Machine Learning Technique	2023
54	Ajay Kumar	Load Frequency Control for Hybrid Power System using Intelligent Techniques under Deregulated Environment	2023

Ph. D Awarded

55	Anup Kumar Nanda	Performance Enhancement of Partially Shaded Photovoltaic Array Connected to a Microgrid by Optimal Reconfiguration Scheme	2023
56	Neha	Some Studies on Design of Current Controllers for a Grid Connected PWM Inverter to Improve Power Quality	2023
57	Sasmita Lenka	Power Quality Analysis in Distribution Systems using Signal Processing Techniques	2023
58	Snehalika	Design and Implementation of GaN-based Isolated Bidirectional DC-DC Converters for Electric Vehicle Charging	2023
59	Suchismita Roy	Design and Analysis of Current Control Techniques for Grid-connected PV System	2024
60	Debayani Mishra	Comparative Study and Performance Evaluation of Frequency Control Strategies for Microgrid Operation	2024
61	Gopal Chandra Mahato	Impact Analysis of Flexible Power Point Tracking on Grid Connected PV Systems for Reliability Enhancement	2024
62	Kantipudi V.V.S.R. Chowdary	Dynamic Wireless Power Transfer System for Electric Vehicles Performance Enhancement	2024
63	Amruta Abhishek	Development of High-Gain Boost Converter Topologies using L-Impedance Network for Solar PV Applications	2024
64	Madhuchandra Popuri	Investigation of Novel Interleaved Soft-Switching Boost and Buck DC-DC Converters	2024
65	Sunil Kumar Bhatta	Design and Analysis of Thermoelectric Generator based Hybrid Power System for Stability Improvement by AI Governed Type II Fuzzy Controller	2024
66	Satyabrata Sahoo	TARIFF ASSESSMENT AND LOAD FORECASTING IN MICROGRID ENVIRONMENTS WITH UNIFIED POWER QUALITY COMPENSATORS	2024
67	Swati Smaranika Mishra	Application of meta-heuristic techniques in multi area hybrid power system for load frequency control	2024
68	Jayanta Kumar Sahu	Some Studies on Performance Enhancement of Solar PV System by using different Intelligent MPPT Techniques.	2024

Interdisciplinary Research

Computer Science and Engineering

- ❑ A.I Techniques
- ❑ Machine Learning
- ❑ I.O.T
- ❑ Cyber Security

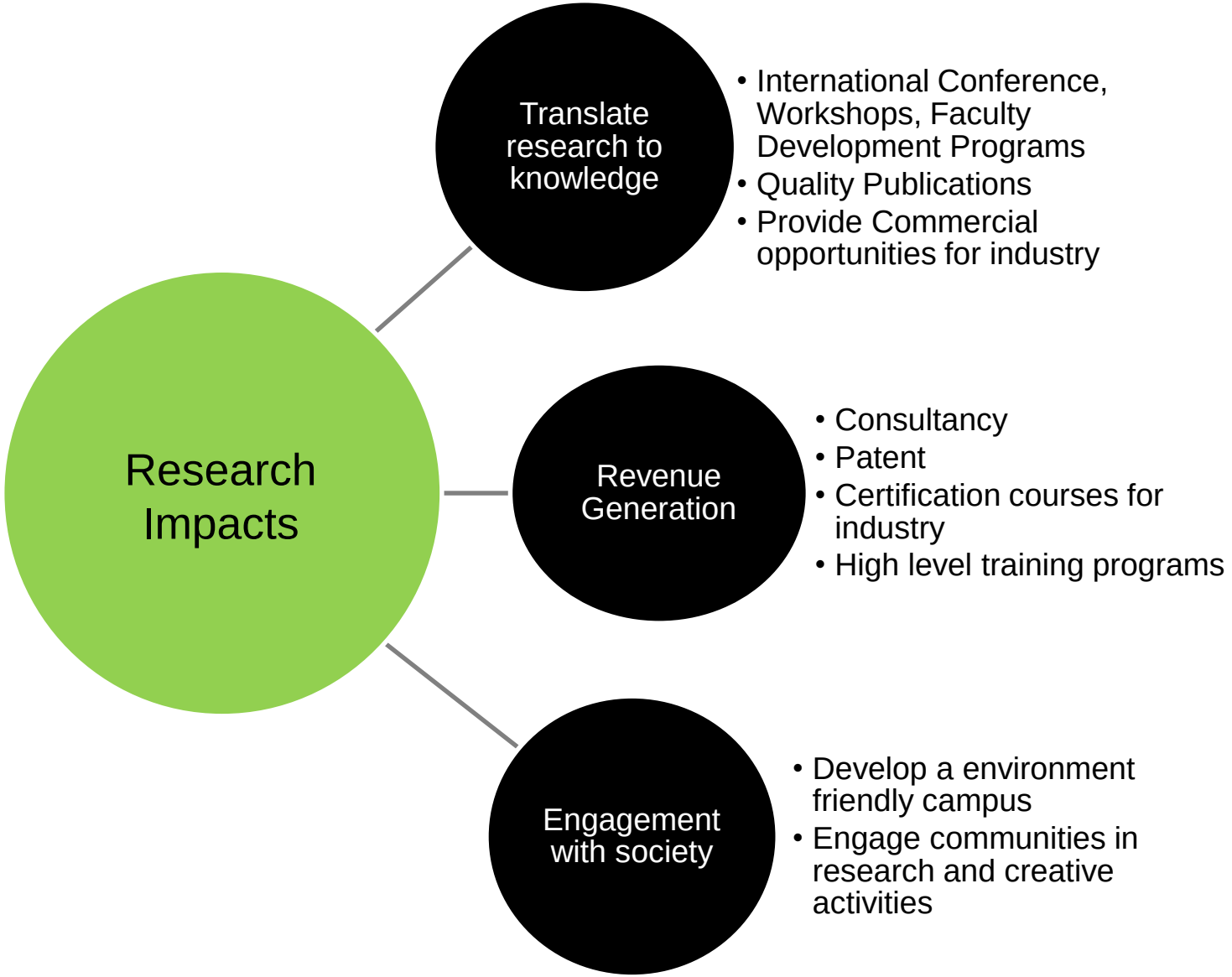
Mechanical Engineering

- ❑ Thermal Management
- ❑ Dynamic Charging of EV
- ❑ Battery Health Monitoring

Electronics Engineering

- ❑ Signal Processing
- ❑ Passive Filter Designing
- ❑ Antenna and Satellite Communication
- ❑ Microelectronic Circuits
- ❑ Signal Modulations

Research Impacts




Thank
you