

Patents (Department of EE)

Title of Investigation	Patent Type	Application Number	Status (Published/Granted)	Date of Publishing/Grant)
Clutch Plate Inspection Fixture. (Dr. Alok Jain)	Design Patent (India)	415561-001	Granted	02/05/2024
Electricity Transmission Tower Inspection Fixture. (Dr. Alok Jain)	Design Patent (India)	384638-001	Granted	24/04/2023
Venturi Vertical Axis Roof Top Wind Turbine.(Dr Siddarth Joshi)	Design Patent (India)	366034-001	Granted	14/06/2022
Technique for Multilayer Protection from Quantifiable Vulnerabilities in Industrial Cyber Physical Systems. (Dr Nirav Karelia)	Innovation Patent (Australia)	2020102142	Granted	30/09/2020
Technique for Multilayer Protection from Quantifiable Vulnerabilities in Industrial Cyber Physical Systems. (Dr Nirav Karelia)	Innovation Patent (Australia)	2020102142	Granted	30/09/2020
A Generalized Process for Order Reduction of Unstable Systems. (Dr Nirav Karelia)	Innovation Patent (Australia)	2020103941	Granted	27/01/2021
A Method for Fractional Order Controller in Delta Domain for Electrochemical Process. (Dr Nirav Karelia)	Innovation Patent (Australia)	2020104117	Granted	17/02/2021

A Unified Approach to Modelling and Control of Time-Delay Systems. (Dr Nirav Karelia)	Innovation Patent (Australia)	2020104119	Granted	17/02/2021
Model Order Reduction and Controller Design of Non-Minimum Phase Hydro Plants. (Dr Nirav Karelia)	Innovation Patent (Australia)	2020104120	Granted	17/02/2021
An Optimized Approach to Order Diminution and Controller Synthesis of Interval Systems. (Dr Nirav Karelia)	Innovation Patent (Australia)	2020104125	Granted	17/02/2021
Fixed Off Time-Based Switch Mode Power Supply Device. (Dr Nirav Karelia)	Innovation Patent (Australia)	2021100313	Granted	31/03/2021
A New Method for Adaptive Overcurrent Protection for Detection of Series-Shunt Faults for Low X/R Distributed Generators Using D-Components. (Dr Nirav Karelia)	Innovation Patent (Australia)	2021101318	Granted	21/04/2021
AI-Thinker ESP32-CAM for Live Video Streaming and Face Recognition System Based on IoT. (Dr Nirav Karelia)	Innovation Patent (Australia)	2021101497	Granted	05/05/2021

A System and A Method for Detection and Identification of Series-Shunt Faults. (Dr Nirav Karelia)	Innovation Patent (Australia)	2021101587	Granted	05/05/2021
Rate of Change of d and Frequency Component-Based Adaptive Protection for Detection of Series-Shunt Faults for Low X/R Distributed Generators. (Dr Nirav Karelia)	Innovation Patent (Australia)	2021102969	Granted	08/12/2021
(Title not shown in certificate page). (Dr Nirav Karelia)	Patent (South Africa)	2022/04128	Granted	28/09/2022
(Title not shown in certificate page) (Dr Nirav Karelia)	Patent (South Africa)	2022/05530	Granted	21/12/2022
Solar Charging Station for Vehicles. (Dr Nirav Karelia)	Design Patent (India)	368788-001	Granted	04/08/2022
Smart Domestic Power Scheduling System.(Dr Vivek Pandya)	Patent (India)	201721020308	Granted	26/03/2021
Grid-Resilient Solar Photovoltaic Fed Shunt Active Power Filter System and Control Method. (Dr Kaibalya Prasad Panda)	Patent (India)	202331005669	Granted	19/02/2024

High Boost Switched-Capacitor Integrated Grid Following Transformerless Inverter. (Dr Kaibalya Prasad Panda)	Patent (India)	2023310050749	Granted	21/06/2024
Automatic Clutch Actuation System. (Dr Vipin Shukla)	Design Patent (India)	386038-001	Granted	14/06/2022
A Device for Non-Contact and Automated Inspection of the Electric Power Transmission Lines. (Dr. Alok Jain)	Patent (India)	202321037922	Published	02/06/2023
Improving Power Quality in Hybrid Renewable Energy Systems Through the Utilization of PV Inverter Ratings and Hybrid Active Power Filter. (Dr Siddarth Joshi)	Patent (India)	202421052422	Published	31/01/2025
Model Predictive Control for Optimization of Hybrid Renewable Energy Systems Integrating Wind and Battery Storage. (Dr Siddarth Joshi)	Patent (India)	202421051619	Published	03/01/2025
Compact Switched-Capacitor Boost Common-Ground Multilevel Inverter for Photovoltaic System.	Patent (India)	202321075003	Published	16/08/2024

(Dr Kaibalya Prasad Panda)				
Cross-Switched Multilevel Inverter with Zero Common-Mode Voltage for Solar System	Patent (India)	202321075168	Published	16/08/2024
Low Cost System and Method for Detection of WiFi De-authentication Attacks. (Dr Kaibalya Prasad Panda)	Patent (India)	202321075114	Published	16/08/2024
Bi-Directional DC Power Conversion Unit with Low Input Current Ripple for Electric Vehicle. (Dr Kaibalya Prasad Panda)	Patent (India)	202421052475	Published	31/01/2025
Crop Watch IoT. (Dr Vipin Shukla)	Patent (India)	202421051273	Published	03/01/2025
Smart Energy Meter With Different Theft Detection. (Dr. Alok Jain)	Patent (India)	202321037925	Filed	02/06/2023
Eye-Controlled Wheelchair. (Dr. Alok Jain)	Patent (India)	20231037916	Filed	02/06/2023
A Device For Non-Contact And Automated Inspection Of Four Stroke IC Engine Cylinder. (Dr. Alok Jain)	Patent (India)	202321018154	Filed	17/03/2023
Automated Inspection Of Forged Components. (Dr. Alok Jain)	Patent (India)	2023210186106	Filed	17/03/2023
A Device For Automated Inspection Of Rolled	Patent (India)	202321018073	Filed	17/03/2023

Components. (Dr. Alok Jain)				
A Device For Automated Inspection Of Extruded Components. (Dr. Alok Jain)	Patent (India)	202321037994	Filed	02/06/2023
A Device For Automated Inspection Of Broached Components. (Dr. Alok Jain)	Patent (India)	202321075099	Filed	03/11/2023
A Device For Automated Inspection Of Spur Gears.(Dr. Alok Jain)	Patent (India)	202421012213	Filed	21/02/2024
IoT-based Home Automation System for Persons with Disabilities. (Dr Nirav Karelia)	Utility Model / Gebrauchsmuster (Germany)	20 2022 104 535	Filed	20/10/2022
IoT-based Access Control System for Healthcare Application. (Dr Nirav Karelia)	Utility Model / Gebrauchsmuster (Germany)	20 2022 104 892	Filed	22/11/2022
IoT-based Intelligent Agricultural System. (Dr Nirav Karelia)	Utility Model / Gebrauchsmuster (Germany)	20 2022 103 185	Filed	12/07/2022
IoT-Supported Robotic System for Advanced Access Control and Monitoring. (Dr Nirav Karelia)	Utility Model / Gebrauchsmuster (Germany)	20 2022 103 739	Filed	15/07/2022