

Publications:

Book

1. **R. K. Kumawat**, D K Palwalia, "Multilevel Inverter for Renewable Energy Application", ISBN: 978-620-3-02558-3, Edition: Nov, 2024,
2. **Dr. R. K. Kumawat**, Prof. D. K. Palwalia, and Dr. Ujjwal Kumar Kalla, "Basics Electrical Machines: Theory and Practicals", 2024, AICTE e-KUMBH, ISBN : 978-93-6027-982-0
3. **Dr. R. K. Kumawat**, Dr. R. A. Kapgate, Dr. Sunita Bhosle, Mr. S. Manoj Kumar, Automation in Agrilculture, ISBN: 9789348020505
4. Dr Bharat Gothania, **Dr R K Kumawat**, Induction Machine: Analysis and Performance Using Fuzzy Logic Controller, ISBN-13 979-8879571714, Publication date, February 14, 2024
5. Kuldeep Jayaswal, **Rakesh K. Kumawat**, D K Palwalia, "MPPT Construction", ISBN: 978-81-9365-600-6, Edition: 2020.

Patent and Design Publications

1. Artificial Intelligence-Based Maintenance of Electric Vehicle Battery Charging Systems, App. No. 202341035634 A
2. Implementation of Hybrid Machine Learning Models for Sensor Fault Detection and Management of Battery in Electric Vehicles, App. No. 202311045255A
3. Smart Device to Detect Happiness of A Teacher, Design number: 6351809
4. AI Based Wireless Electricity Consumption Monitoring Device, Design number: 413103-001
5. AI Driven Exploration of Bismuth Based Double Perovskites for Enhanced Solar Cell Performance, App. No. 202421055890A.
6. IoT Assisted Environmental Pollution Deceting Device, Design No.: 422967-001
7. Accurate Prediction of Student Learning, App. No. 202421079637A
8. A Critical Analysis of Machine Learning and Modern Pedagogy in Improving Teaching Practices in Higher Education, App. No. 202421079637A

Journal Publications

- [1] **R. K. Kumawat**, D. K. Palwalia "Reduced Switch Count Multilevel Inverter: A Comprehensive Analysis" in Journal of Power Technology, **accepted for publication.**
- [2] Pallavi Jarewal & R. K. Kumawat, "Green HRM Practices Followed by Public and Private Sector Banks", Int. J. of Management Concepts and Philosophy, Inderscience Publication, **Accpeted for Publication.**

- [3] **R. K. Kumawat** & D. K. Palwalia, "A Comprehensive Analysis of Reduced Switch Count Multilevel Inverter", *Australian Journal of Electrical and Electronics Engineering*, vol.17 Issue 1, pp. 13-27, November 2019.
- [4] Suwarna Shete, **R. K. Kumawat**, "State of Charge Estimation Based on Cumulative Error Based-Extended Kalman Filter for Electric Vehicle Applications", *Energy Storage*, Wiley. May 2025. <https://doi.org/10.1002/est2.70174>
- [5] Suwarna Shete, **R. K. Kumawat**. 2025 " Statistical cumulative error-based state of charge estimation for electric vehicle applications", *Intelligent Decision Technologies*, vol. Pre-press, no. Pre-press, pp. 1-14, September, 2024 DOI: 10.3233/IDT-24073, 2025, Vol. 19(1) 534–546
- [6] Pranjal Jog & **R. K. Kumawat**, 2022. "Wireless Power Transfer With Inductive Coupling for EVs: A Parametric Optimization-Based Approach," *International Journal of Swarm Intelligence Research (IJSIR)*, IGI Global, vol. 13(1), pages 1-22, January.
- [7] Pranjal Amit Jog & **R. K. Kumawat**, "A Hybrid Optimization-Based Artificial Neural Network Model for Wireless Power Transfer in Electric Vehicles", *International Journal of High-Speed Electronics and Systems*, <https://doi.org/10.1142/S0129156424500022>

Conferences Publications

- [8] Annu Govind, Vijay Kumar Tayal, Prakash Kumar and **R. K. Kumawat**, "Modernistic Synchronization Technique during Adverse Grid Conditions using Shunt Active Power Filter," *IEEE 4th International Conference on Recent Developments in Control, Automation & Power Engineering (RDCAPE)*, Noida, India, pp. 304-308, 7-8 Oct. 2021.
- [9] **R. K. Kumawat**, D. K. Palwalia, Annu Govind, "Harmonic Elimination in Multilevel Inverter using Soft Computing Technique: A Comparison" Published in conference proceeding of International Conference on Latest Trends in Civil, Mechanical and Electrical Engineering, pp.60, APRIL 12-13, 2021.
- [10] Annu Govind, Vijay Kumar Tayal, Prakash Kumar and **R. K. Kumawat**, "Comparative Analysis of Current Controlling Techniques for Shunt Active Power Filter for Power Quality Enhancement", Published in conference proceeding of International Conference on Latest Trends in Civil, Mechanical and Electrical Engineering, pp.61, APRIL 12-13, 2021.

- [11] Bharat Gothania and **R K Kumawat**, "A New Approach to Control of Induction Motor Drive", Published in conference proceeding of Recent Innovations in Engineering & Technology for Sustainable Living, Career Point University, Kota, India, pp. 160, 08-09 Sep, 2021. ISSN: 2583-1895
- [12] Suwarna Shete, Pranjal Jog, **R. K. Kumawat**, D K Palwalia "Battery Management System for SOC Estimation of Lithium-Ion Battery in Electric Vehicle: A Review", 6th IEEE International Conference on Recent Advances and Innovations in Engineering (ICRAIE), Malaysia Section, pp. 1-4, 1-3 December, 2021.
- [13] Pranjal Jog, Suwarna Shete, **R. K. Kumawat**, D K Palwalia "Electric Vehicle Charging Station Infrastructure: A Review", 6th IEEE International Conference on Recent Advances and Innovations in Engineering (ICRAIE), Malaysia Section, pp. 1-7, 1-3 December, 2021.
- [14] Annu Govind, Vijay Kumar Toyal, Prakash Kumar and **R. K. Kumawat**, D K Palwalia "Phase Synchronization Control Techniques Under Adverse Grid Conditions Using Shunt Active Power Filter", 6th IEEE International Conference on Recent Advances and Innovations in Engineering (ICRAIE), Malaysia Section, pp. 1-5, 1-3 December, 2021.
- [15] S. Shete, P. Jog, R. Kamalakannan, J. T. A. Raghes, S. Manikandan and **R. K. Kumawat**, "Fault Diagnosis of Electric Vehicle's Battery by Deploying Neural Network," 6th IEEE International Conference on I-SMAC (IoT in Social, Mobile, Analytics and Cloud) (I-SMAC), Dharan, Nepal, pp. 346-351, 2022.
- [16] A. Govind, V. Kumar Tayal and **R. K. Kumawat**, "Comparison of Current Controlling Methods for Shunt Active Power Filters to Improve Power Quality," 10th IEEE International Conference on Reliability, Infocom Technologies and Optimization (Trends and Future Directions) (ICRITO), Noida, India, pp. 1-5, 2022.
- [17] Bharat Gothania, **R. K. Kumawat**, Gaurav Jain and Annu Govind, "A Novel Fuzzy Direct Control of Induction Motor Drive", Presented at Second International Conference on Sustainable Energy, Environment, and Green Technologies (ICSEEGT 2022) organized by Poornima College of Engineering, Jaipur, India, during June 24-25, 2022.
- [18] Suwarna Shete, Pranjal Jog, **R. K. Kumawat**, Sonali Nandanwar, N. P. Patidhar, D. K. Palwalia, "Fault Diagnosis and State of Charge Estimation of Battery for Electric Vehicle Applications" 3rd International Conference on Energy, Power and Electrical Engineering (EPEE 2023), pp.712-719, 15-17 September, 2023.
- [19] Pranjal Jog, Suwarna Shete, **R. K. Kumawat**, Rakhee Oka, Sonali Nandanwar, D. K. Palwalia, "A parametric based approach to Wireless Power Transfer with Inductive

Coupling" 3rd International Conference on Energy, Power and Electrical Engineering (EPEE 2023), pp. 1362-1373, 15-17 September, 2023.

- [20] Tanmay Shukla, N. P. Patidhar, **R. K. Kumawat**, Gaurav Jain & Rachit Saxena "A Real Time Implementation of PF Enhanced Two-Stage Battery Charging Solution for Battery Powered Automobile", 2024 IEEE International Students' Conference on Electrical, Electronics and Computer Science, Bhopal Section, pp. 25-26 February, 2024.
- [21] Tanmay Shukla, **R. K. Kumawat**, Gaurav Jain & Rachit Saxena "Reduced Switch Count Asymmetrical Seven-Level Inverter", 2024 IEEE International Students' Conference on Electrical, Electronics and Computer Science, Bhopal Section, 25-26 February, 2024.
- [22] Tanmay Shukla, N. P. Patidhar, **R. K. Kumawat**, Ekata Kaushik & Sonali Nandanwar " Variable Frequency Waves at Different Level Deposited PBM Technique for Seven-Level Inverter ", 2024 IEEE International Students' Conference on Electrical, Electronics and Computer Science, Bhopal Section, 25-26 February, 2024.
- [23] Tanmay Shukla, N. P. Patidhar, Pankaj Gakhar, Gautav Jain and **R. K. Kumawat**, " A Fuel-cell Powered Brushless-Direct Current Electric Motor Drive for Clean Transport Applications", 5th Electric Power and Renewable Energy Conference (EPREC-2024), NIT Jamshedpur, 24th - 26th May 2024.
- [24] Sonali Nandanwar, **R. K. Kumawat**, N.P. Patidar, Rajarammohanrao Chennu, Ritu Verma, "Classification of Power Transient Signals Using Probabilistic Neural Network" Presented at 3rd IEEE International Conference on Electrical Power And Energy Systems June 21-22, 2024, MANIT Bhopal.
- [25] Rachit Saxena, Dr. Nagendra Kumar Swarnkar, Dr. Gaurav Jain, Rajnandani Yadav and **R. K. kumawat**, "Different Computational Techniques for Identification of Faults in SPV", Presented at The 10th International Symposium on Hydrogen Energy, Renewable Energy and Materials (HEREM 2024), Bangkok, Thailand
- [26] R. K. Kumawat, Pravin Sonwane, Gaurav Jain, Pranjal Jog, N. P. Patidhar, and Mohan Lal Kolhe, "Harmonic Elimination in Multilevel Inverter for Renewable Energy system using soft computing Technique", Presented at The 10th International Symposium on Hydrogen Energy, Renewable Energy and Materials (HEREM 2024), Bangkok, Thailand