

Agnel Charities

Fr. C. Rodrigues Institute of Technology, Vashi, Navi Mumbai, Maharashtra

Dr. Sushil Thale – Patents, Conference & Journal Publications

Calendar Year 2008-2024

Patents Granted:

Sushil Thale and Vivek Agarwal, "Method and Apparatus for a Novel Solar Photovoltaic Micro-inverter based Microgrid with Common Community Energy Storage for Residential Applications" Indian Patent filed on 28th Nov, 2014, Application No. 3999/MUM/2014. Patent Granted (Patent No.359817), Date of patent grant: 26/02/2021.

List of Journal Papers:

1. **Dipti Patil, Bindu S., and Sushil Thale**, "Arc Fault Detection and Classification in DC Microgrid Using Deep Neural Network," **SSRG International Journal of Electronics and Communication Engineering**, vol. 11, no. 8, pp. 131-139, Aug. 2024. (Scopus Indexed) <https://doi.org/10.14445/23488549/IJECE-V1118P114>
2. **Keerthi Unni and Sushil Thale**, "Energy Consumption Analysis for Prediction of Battery Residual Energy in Electric Vehicles," **Engineering, Technology & Applied Science Research (ETASR) Journal**, vol. 13, No. 3, pp. 11011-11019, June 2023 <https://doi.org/10.48084/etasr.5868>, (e-SCI/ Scopus Indexed) \
3. **E. Raja Vikram Reddy and Sushil Thale**, "A Novel Efficient Dual-Gate Mixed Dilated Convolution Network for MultiScale Pedestrian Detection" **Engineering, Technology & Applied Science Research (ETASR) Journal, Vol. 13, No. 6, December 2023**, <https://doi.org/10.48084/etasr.6340>, (e-SCI/ Scopus Indexed).
4. **Shrisheil Muchande and Sushil Thale**, "A Novel Reconfigurable Coordinated Control for Autonomous Low Voltage DC Microgrid", **International Review of Electrical Engineering (I.R.E.E.)**, Vol. 18, No. 1, pp. 36-49, May 2023, <https://doi.org/10.15866/iree.v18i1.22929>, (Scopus Indexed).
5. **Dipti Patil, Bindu S, and Sushil Thale**, "A Novel Method for Real Time Protection of DC Microgrid Using Cumulative Summation and Wavelet Transform," **International Journal of Electrical and Computer Engineering Systems**, March 2022, (Scopus Indexed).
6. **Dipti Patil, Bindu S, and Sushil Thale**, "Deep Neural Network Enabled Fault Detection in LVDC Microgrid Using Empirical Mode Decomposition," **International Journal of Advanced Technology and Engineering Exploration (IJATEE)**, Feb. 2022, <https://doi.org/10.19101/IJATEE.2021.874973>, (Scopus Indexed).
7. **Shrisheil Muchande and Sushil Thale**, "Hierarchical Control of a Low Voltage DC Microgrid with Coordinated Power Management Strategies", **Engineering, Technology, and Applied Science Research (ETASR) Journal**, Vol. 12, No. 1, February 2022, <https://doi.org/10.48084/etasr.4625>, (e-SCI/ Scopus Indexed)
8. **Pillai Swati, Thale Sushil and Purohit Akshay**, "Unbalanced Voltage Mitigation with Reactive Power Control of GridTied Solar PV System," *Advances in Energy Research*, Vol. 2, pp 877-891, Springer Proceedings in Energy, Springer, Singapore, May 2020, https://doi.org/10.1007/978-981-15-2662-6_78, (Scopus Indexed).
9. **Bindu R and Sushil Thale**, "Power Management Strategy for an Electric Vehicle Driven by Hybrid Energy Storage System," **IETE Journal of Research**, India, Mar 2020, <https://doi.org/10.1080/03772063.2020.1729257>, (Scopus Indexed).
10. **Bindu R and Sushil Thale**, "Performance Analysis of Power Sharing Control Strategies for Battery/Ultra-capacitor Hybrid Energy Storage Based Electric Vehicle," **International Review of Electrical Engineering (IREE)**, Praise Worthy Prize Publishing House, April 2020, <https://doi.org/10.15866/iree.v15i5.18404>, (Scopus Indexed).
11. **Swathy Pillai and Sushil Thale**, "Design and Implementation of a Three Phase Inverter for Renewable Energy Source with Unified Control Strategy," **Energy Procedia, Elsevier**, vol. 90, pp 673-680, December 2016, <https://doi.org/10.1016/j.egypro.2016.11.236>, (Scopus Indexed).
12. **Sushil Thale and Vivek Agarwal**, "Controller Area Network Assisted Grid Synchronization of a Microgrid with Renewable Energy Sources and Storage," **IEEE Trans. on Smart Grid**, vol. 7, no. 3, pp. 1442 – 1452, May 2016, <https://doi.org/10.1109/TSG.2015.2453157>, (SCI/ Scopus Indexed)

13. **Sushil Thale, Rupesh Wandhare and Vivek Agarwal**, "A Novel Reconfigurable Microgrid Architecture with Renewable Energy Sources and Storage," **IEEE Trans. on Industry Applications**, vol.51, no. 2 pp. 1805 – 1816, March-April 2015. <https://doi.org/10.1109/TIA.2014.2350083>, (SCI/ Scopus Indexed)
14. **Arvind Kadam, Keerthi Unni, and Sushil Thale**, "Performance Analysis of Voltage Stability against Sudden Load Changes in Voltage Controlled Inverters for Distributed Generation," **International Journal of Applied Power Engineering**, vol.3, no. 1, pp. 33-40, April 2014, <https://doi.org/10.11591/ijape.v3.i1.pp33-40>.

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Fr. C. Rodrigues Institute of Technology, Vashi, Navi Mumbai, Maharashtra

Dr. Sushil Thale

Conference Publications

Calendar Year 2008-2024

List of Conference Papers:

1. **Shantanu Kulkarni and Sushil Thale**, "Phase-Shifted Dual Active Bridge Converter Based EV Charger Architecture with G2V and V2G Modes," IEEE CONECCT 2024, 12th - 14th July, 2024, Bangalore
2. **Shraddha Sawant and Sushil Thale**, "Efficient Energy Storage Management Strategy for A Low Voltage DC Microgrid," IEEE CONECCT 2024, 12th - 14th July, 2024, Bangalore
3. **E. Raja Vikram Reddy and Sushil Thale**, "Pedestrian Detection Using YOLOv5 and Complete IoU Loss for Autonomous Driving Applications," International Conference on Paradigms of Communication, Computing and Data Analytics (PCCDA 2023), APRIL 22-23, 2023, ADGITM New Delhi.
4. **Saakshi Gawande and Sushil Thale**, "Design and Development of Solar Powered Phase Shifted Full Bridge Converter for EV Charger," 'International Conference on Communication Systems, Computing and IT Applications', St. Francis Institute of Technology, Mumbai India March 2023.
5. **Ameya Thale, Udayraj Tawde, Avinash Saruk, Shreyas Sarnaik and Sushil Thale**, "Design and Development of Emulated Fuel Cell Based Hierarchical Controlled DC Microgrid System," Presented at 8th International Conference on Advances in Energy Research (ICAER 2022), IIT Bombay, Powai, Mumbai 7th -9th July 2022
6. **Mayur Kumavat and Sushil Thale**, "Analysis of CSTR Temperature Control with PID, MPC & Hybrid MPC-PID Controller", Third International Conference on Automation, Computing and Communication 2022 (ICACC-2022), Ramrao Adik Institute of Technology, Nerul, Navi Mumbai, Maharashtra. <https://doi.org/10.1051/itmconf/20224401001>
7. **Keerthi Unni and Sushil Thale**, "Influence of Auxiliary Loads on the Energy Consumption of Electric Vehicle – A Case Study", IEEE Transportation Electrification Conference India (ITEC 2021) organized by SAE India, 16-18 Dec. 2021
8. **E. Raja Vikram Reddy and Sushil Thale**, "Pedestrian Detection Using YOLOv5 for Autonomous Driving Applications", IEEE Transportation Electrification Conference India (ITEC 2021) organized by SAE India, 16-18 Dec. 2021.
9. **Keerthi Unni and Sushil Thale**, "Simulation and Analysis of Factors Influencing the Residual Range of Electric Vehicle", The 3rd IEEE Bombay Section Signature Conference (IBSSC-2021) organized by IEEE Bombay Section and ABV-IIITM Gwalior, India, 18-20 Nov 2021, <https://doi.org/10.1109/IBSSC53889.2021.9673171>
10. **Shrishell Muchande, and Sushil Thale**, "Design and Implementation of Autonomous Low Voltage DC Microgrid with Hierarchical Control," IEEE International Conference on Smart Technologies for Power, Energy and Control (STPEC 2020), organized by Visvesvaraya National Institute of Technology(VNIT), Nagpur, 25 – 26 September, 2020. <https://doi.org/10.1109/STPEC49749.2020.9297748>
11. **Shrishell Muchande, Sushil Thale and Rupesh Wandhare**, "Integrated Solar PV-Battery and Micro-Hydro Based Low-Voltage Autonomous DC Microgrid for Rural Electrification," 47th IEEE Photo-Voltaic Specialist Conference (PVSC), June 2020, <https://doi.org/10.1109/PVSC45281.2020.9300876>
12. **Rupesh Wandhare, Vrishabh Randive, and Sushil Thale**, "Design of a PV fed Hybrid DC Bus Power Supply with the High Voltage Ride Through Capability," 47th IEEE Photo-Voltaic Specialist Conference (PVSC), June 2020, <https://doi.org/10.1109/PVSC45281.2020.9300802>

13. **Ann Raichel Mathew, Bindu R, and Sushil Thale**, "Design of a Power Electronic Drive for a Small Utility Electric Vehicle," IEEE India Council International Subsection' Conference (INDISCON-2020) at Visakhapatnam during July 25-26, 2020, <https://doi.org/10.1109/INDISCON50162.2020.00027>
14. **Sanket Dalvi and Sushil Thale**, "Design of DSP Controlled Passive Cell Balancing Network based Battery Management System for EV Application," IEEE India Council International Subsection' Conference (INDISCON-2020) at Visakhapatnam during July 25-26, 2020, <https://doi.org/10.1109/INDISCON50162.2020.00029>
15. **Misbah Khan and Sushil Thale**, "Design and Development of AC Microgrid Power Conditioning Unit for Renewable Energy Integration," submitted and under review at Int. Conf. CAC3, Dec 2019, Mumbai, <https://doi.org/10.1109/ICAC347590.2019.9036833>, **Won the Best Paper Award**
16. **Muazzam Phansopkar, Mahendra Rane and Sushil Thale**, "Analysis and Control of Quasi Z-source Inverter with Digital Current Control for Energy Storage," 8th International Conference on Power Systems (ICPS), Jaipur, India, Dec 2019, <https://doi.org/10.1109/ICPS48983.2019.9067736>
17. **Salil Patwardhan, Bindu R, and Sushil Thale**, "Modeling and Performance Analysis of Battery Electric Vehicle," 2nd Int. Conf. on Power and Embedded Drive Control, 21-23 Aug 2019, Chennai, India. <https://doi.org/10.1109/ICPEDC47771.2019.9036646>
18. **Bindu R, Sujata Patil and Sushil Thale**, "Electric Vehicle Power Conditioner with Battery-Ultracapacitor Hybrid Energy Storage System", 2018 15th IEEE India Council International Conference (INDICON), 16-18 Dec. 2018, Coimbatore, India, <https://doi.org/10.1109/INDICON45594.2018.8987191>
19. **Bindu R, Sujata Patil and Sushil Thale**, "Design and Control of Power Conversion System for Electric Vehicle Application," IEEE International(Biennial) Conference on Technological Advancements in Power and Energy (TAP Energy 2017), Amrita School of Engineering, Amritapuri, Amrita Vishwa Vidyapeetham, Amrita University, Kollam, Kerala, India, December 21-23, 2017, <https://doi.org/10.1109/TAPENERGY.2017.8397264>
20. **Sushil Thale, Uma L., Arnab Panja, Roshal Fernandes, Shamli Jondhale and Pierson D'souza**, "A Novel Configurable Signal Acquisition System for Multiple Bio-signal Measurements: Assistive Technology for Home Rehabilitation," IEEE International(Biennial) Conference on Technological Advancements in Power and Energy (TAP Energy 2017), Amrita School of Engineering, Amritapuri, Amrita Vishwa Vidyapeetham, Amrita University, Kollam, Kerala, India, December 21-23, 2017, <https://doi.org/10.1109/TAPENERGY.2017.8397228>
21. **Bindu R and Sushil Thale**, "Sizing of Hybrid Energy Storage System and Propulsion Unit for Electric Vehicle," 2nd IEEE International Transportation Electrification Conference-India (ITEC India 2017), Pune, India, 13-15th Dec. 2017. <https://doi.org/10.1109/ITEC-India.2017.8333846>
22. **Swathy Pillai, Sushil Thale and Akshay Purohit**, "Unbalanced Voltage Mitigation with Reactive Power Control of Grid-tied Solar PV System," 6th International Conference on Advances in Energy Research 2017, IIT Bombay, Mumbai, India, December 12-14, 2017. **Won the Best Paper Award**
23. **Keerthi Unni and Sushil Thale**, "Precision Agriculture through ICT and Data Ecosystem: An opportunity for Digital Transformation," 60th Annual IETE Convention- 2017, Kerala, 16th -18th Sept. 2017. **Won the Best Paper Award**
24. **Arvind Kadam, Keerthi Unni and Sushil Thale**, "Control Scheme for Seamless Operating Mode Transfer of AC Microgrid," 5th IEEE International conference on Smart Energy Grid Engineering (SEGE2017), Oshawa, Canada, August 14-17, 2017, <https://doi.org/10.1109/SEGE.2017.8052787>
25. **Chanchal Patil, Sushil Thale, Shrishell Muchande and Arvind Kadam**, "A Novel Protection Scheme for DC Microgrid with Hierarchical Control," 5th IEEE International conference on Smart Energy Grid Engineering (SEGE2017), Oshawa, Canada, August 14-17, 2017, <https://doi.org/10.1109/SEGE.2017.8052786>
26. **Rachit Pradhan, Martin Chirayath and Sushil Thale**, "Coordinated Control Strategy for a DC Microgrid with Low Bandwidth Communication," Accepted at IEEE International Conference on Power Electronics, Drives and Energy Systems (PEDES2016), 14-17 December 2016, Trivandrum, Kerala, India, <https://doi.org/10.1109/PEDES.2016.7914276>

27. **Swathy Pillai and Sushil Thale**, "Design and Implementation of a Three Phase Inverter for Renewable Energy Source with Unified Control Strategy," 5th International Conference on Advances in Energy Research (ICAER 2015), IITBombay, Mumbai, 15-17 December, 2015.
28. **Gauri Madan, Keerthy Unni, Swathy Pillai, and Sushil Thale**, "Design and implementation of a DC Microgrid with multiple sources," National Conference on Nascent and Advanced Technologies, IETE Navi Mumbai Centre, August 2015.
29. **Medha Kulkarni and Sushil Thale**, "Investigation into Selection and Sizing of Energy Storage for Designing of Dispatchable Solar PV System," National Conference on Nascent and Advanced Technologies, IETE Navi Mumbai Centre, August 2015.
30. **Prachi Bhopi and Sushil Thale**, "Active Generation Management and Load Management for Standalone Solar Photovoltaic System," National Conference on Nascent and Advanced Technologies, IETE Navi Mumbai Centre, August 2015.
31. **Prajakta Pawar and Sushil Thale**, "Harmonic Analysis and Selective Elimination in PWM Technique Controlled Three Phase Inverter," ICNTE 2015, Fr. C. Rodrigues Institute of Tech., Navi Mumbai, Jan. 2015.
32. **Keerthy Unni, and Sushil Thale**, "Design and Development of a Solar PV Inverter for Water Pumping Applications," ICNTE 2015, Fr. C. Rodrigues Institute of Tech., Navi Mumbai, Jan. 2015. **Won the Best Paper Award**
33. **Shantanu Kulkarni and Sushil Thale**, "Design and Development of Solar PV based Grid Interactive Inverter," ICNTE 2015, Fr. C. Rodrigues Institute of Tech., Navi Mumbai, Jan. 2015.
34. **Umesh Mhapankar, Sonali Sherigar and Sushil Thale**, "Electro-gastrography: a Non- Invasive Technique to Evaluate Gastric Electrical Activity for Early Detection of Stomach Cancer," HTI-2015 – SAMEER, IIT-Bombay, Powai, 9th – 10th Jan. 2015.
35. **Rupesh Wandhare, Sushil Thale, and Vivek Agarwal**, "Design of a Photovoltaic Power Conditioning System for Hierarchical Control of a Microgrid," 40th IEEE Photovoltaic Specialist Conference (PVSC), Denver, Colorado, USA, June 2014. <https://doi.org/10.1109/PVSC.2014.6925603>
36. **Sushil Thale, Rupesh Wandhare, and Vivek Agarwal**, "A novel low cost portable integrated solar PV, fuel cell and battery emulator with fast tracking algorithm", 40th IEEE Photovoltaic Specialist Conference (PVSC), Denver, Colorado, USA, June 2014, <https://doi.org/10.1109/PVSC.2014.6925602>
37. **Arvind Kadam, Keerthy Unni, and Sushil Thale**, "Performance Analysis of Voltage Stability against Sudden Load Changes in Voltage Controlled Inverters for Distributed Generation," International Journal of Applied Power Engineering, Vol.3, No. 1, pp.33-40, April 2014
38. **Rashmi Kale, Sushil Thale and Vivek Agarwal**, "Design and Implementation of A Solar PV Panel Integrated Inverter with Multi-mode Operation Capability," 39th IEEE Photovoltaic Specialist Conference (PVSC), Tampa, Florida, USA, June 16-21, 2013, <https://doi.org/10.1109/PVSC.2013.6745085>
39. **Trital Soladhra, Kulvinder Kaur Bhambra, Keerthy Unni and Sushil Thale**, "DSP Controlled Multifunction Emulator for Non-Conventional Energy Sources with LabVIEW Graphical User Interface," 2nd International Conference on Advance Communication and Computing Technologies-2013, Mumbai, 10th & 11th Aug, 2013.
40. **Rupesh Wandhare, Sushil Thale, and Vivek Agarwal**, "Reconfigurable Hierarchical Control of a Microgrid Developed with PV, Wind, Micro-hydro, Fuel Cell and Ultra-Capacitor," in 28th IEEE Applied Power Electronics Conference and Exposition (APEC- 2013), Long Beach, CA, USA, March 2013. <https://doi.org/10.1109/APEC.2013.6520694>
41. **Shrishell Muchande, Arvind Kadam, Keerthy Unni, and Sushil Thale**, "Design and Implementation of a Direct Torque Control Space Vector Modulated Three Phase Induction Motor Drive," 3rd International Conference on Advances in Computing, Communication & Control – 2013, Mumbai, India, vol. 361, pp. 659–672, January 2013, https://doi.org/10.1007/978-3-642-36321-4_61
42. **Sushil Thale, Keerthy Unni and Vivek Agarwal**, "CAN based Control of DC-DC Converters in Distributed Generation Units Operating in Master Slave Configuration", IEEE International Conference on Power Electronics, Drives and Energy Systems 2012 (PEDES 2012), Bengaluru, India 16-19, December 2012, <https://doi.org/10.1109/PEDES.2012.6484438>

43. **Sushil Thale, Sheetal Gore and Vivek Agarwal**, "Adaptive Protection Scheme with Fault Detection, Classification and Isolation Features for Off-grid Distributed Generation System", IEEE International Conference on Power Electronics, Drives and Energy Systems 2012 (PEDES 2012), Bengaluru, India 16-19, December 2012, <https://doi.org/10.1109/PEDES.2012.6484439>
44. **Sushil Thale and Vivek Agarwal**, "Controller Area Network (CAN) based Smart Protection Scheme for Solar PV, Fuel Cell, Ultra-Capacitor and Wind Energy System based Microgrid," 38th IEEE Photovoltaic Specialist Conference PVSC-2012, Austin, Texas, June 2012, <https://doi.org/10.1109/PVSC.2012.6317680>
45. **Kapil Bhise, Nataraj Pragallapati, Sushil Thale, and Vivek Agarwal**, "LabVIEW Based Emulation of Photovoltaic Array to Study Maximum Power Point Tracking Algorithms" 38th IEEE Photovoltaic Specialist Conference PVSC-2012, Austin, Texas, June 2012, <https://doi.org/10.1109/PVSC.2012.6318206>
46. **Keerthi Unni and Sushil Thale**, "Design, Modeling and Implementation of a DSP Controlled Buck Converter," National Conference on Nascent Technologies (NCNTE), Fr. C. Rodrigues Institute of Technology, Navi Mumbai, Feb 2012. **Won the Best Paper Award**
47. **Kalpesh Mahajan, Sincy George, and Sushil Thale**, "Simulation of Shunt Active Filter Using d-q Theory," National Conference on Nascent Technologies (NCNTE), Fr. C. Rodrigues Institute of Technology, Navi Mumbai, Feb 2012.
48. **Vaishali Machale, Sushil Thale, and Mahendra Rane**, "Recent Developments In Solar Photovoltaic System From Efficiency Aspect", National Conference on Nascent Technologies (NCNTE), Fr. C. Rodrigues Institute of Technology, Navi Mumbai, Feb 2012.
49. **Sushil Thale and Vivek Agarwal**, "Design and Implementation of Communication and Control Architecture for Solar PV Based Microgrid Supported by PEM Fuel Cell Based Auxiliary Source" Photo-Voltaic Specialist Conference 2011, PVSC-2011, Seattle, USA, 19-24 June 2011, <https://doi.org/10.1109/PVSC.2011.6186442>
50. **Sushil Thale and Vivek Agarwal**, "Smart Control Strategy for the Black Start of a Microgrid Based on PV and Other Auxiliary Sources Under Islanded Condition" Photo-Voltaic Specialist Conference 2011, PVSC-2011, Seattle, USA, 19-24, June 2011, <https://doi.org/10.1109/PVSC.2011.6186443>
51. **Abhay Lolekar, Aris Shaikh, Ipshita Burman, J. S. Khatwani, Sushil Thale and Umesh Mhapankar**, "Fetal ECG Monitoring System Using DSP Techniques", National Conference on Emerging Trends in Engineering and Technology (NCETET), L.R.Tiwari College, Mira Road, March 2011
52. **Ashish H, Sushil Thale and M.S. Panse**, "Low Cost Digital Stethoscope for Heart Sounds", International Conference and workshop on Emerging Trends in Technology (ICWET), TCET, Mumbai, Feb 2011, pp.1275-1279. <https://doi.org/10.1145/1980022.1980304>
53. **Ashish H, Sushil Thale and M.S. Panse**, "Digital Stethoscope for Heart Sounds", International Journal of Computer Application proceedings on ICWET, 2011, pp.42-45
54. **Umesh Mhapankar, DV Bhoir, and Sushil Thale**, "A Wearable Medical Multi-Parameter Storage Device and Alert System," National Conference on Nascent Technologies in the Engineering fields NCNTE 08', FCRIT, Vashi, February 29 – March 1, 2008
55. **Arvind Srinivasan, Ramakrishnan Venkatapathy and Sushil Thale**, "Power Line Communications in Low Voltage Industrial Network: A Concept for Electrical Power Control using PLC Simulation of Network characteristics of LV Motor Power Systems," National Conference on Distribution Automation, 29-31st Oct 07
56. **Sushil Thale, Bhagyalakshmi Nair, and K.T.V. Reddy**, "Remote monitoring System for Electrical Networks" at the International Conference on the Emerging Technologies in Telecommunication Convergence, IETE Mumbai Centre at Hyatt Regency, January 09 - 11, 2007
57. **Sushil Thale, Bhagyalakshmi Nair and Kiran Vichare**, "Energy Monitoring System: Design and Implementation," CIEEPS06, Pondicherry Engg. College, Pillaichavady, Sept 2006