BIBLIOGRAPHY

[1] N. Manna, A. Ganguly, and A. Kumar Sil, "A Critical Analysis for Microgrid Formation based on Hourly Load Growth and Available Renewable Energy," *2020 IEEE Calcutta Conf. CALCON 2020 - Proc.*, pp. 333–337, 2020, doi: 10.1109/CALCON49167.2020.9106555.

[2] R. G. Wandhare, S. Thale, and V. Agarwal, "Design of a photovoltaic power conditioning system for hierarchical control of a microgrid," *2014 IEEE 40th Photovolt. Spec. Conf. PVSC 2014*, pp. 3144–3149, 2014, doi: 10.1109/PVSC.2014.6925603.

[3] M. H. Saeed, W. Fangzong, B. A. Kalwar, and S. Iqbal, "A Review on Microgrids' Challenges Perspectives," *IEEE Access*, vol. 9, pp. 166502–166517, 2021, doi: 10.1109/ACCESS.2021.3135083.

[4] M. W. Altaf, M. T. Arif, S. N. Islam, and M. E. Haque, "Microgrid Protection Challenges and Mitigation Approaches-A Comprehensive Review," *IEEE Access*, vol. 10, pp. 38895–38922, 2022, doi: 10.1109/ACCESS.2022.3165011.

[5] M. Manbachi and M. Ordonez, "Intelligent Agent-Based Energy Management System for Islanded AC-DC Microgrids," *IEEE Trans. Ind. Informatics*, vol. 16, no. 7, pp. 4603–4614, 2020, doi: 10.1109/TII.2019.2945371.

[6] C. Yuan, M. A. Haj-Ahmed, and M. S. Illindala, "Protection Strategies for Medium-Voltage Direct-Current Microgrid at a Remote Area Mine Site," *IEEE Trans. Ind. Appl.*, vol. 51, no. 4, pp. 2846–2853, 2015, doi: 10.1109/TIA.2015.2391441.

[7] Y. Xie *et al.*, "Interval Probabilistic Energy Flow Calculation of CCHP Campus Microgrid Considering Interval Uncertainties of Distribution Parameters," *IEEE Access*, vol. 8, pp. 141358–141372, 2020, doi: 10.1109/ACCESS.2020.3013151.

[8] J. Maritz *et al.*, "Data-Driven Modeling of Frequency Dynamics Observed in Operating Microgrids: A South African University Campus Case Study," *IEEE Access*, vol. 12, no. January, pp. 14466–14473, 2024, doi: 10.1109/ACCESS.2024.3357945.

[9] J. Kliem and D. McGinn, "Ingredients for a Microgrid at U.S. Department of Defense Installations [Technology Leaders]," *IEEE Electrif. Mag.*, vol. 8, no. 4, pp. 6-7+120, 2020, doi: 10.1109/MELE.2020.3026435.

[10] R. K. Chauhan and K. Chauhan, "Battery Monitoring and Control System for Photovoltaic based DC Microgrid," *Int. J. Emerg. Electr. Power Syst.*, vol. 20, no. 6, pp. 1–12, 2019, doi: 10.1515/ijeeps-2019-0133.

[11] C. S. Rajan and M. Ebenezer, "Modeling Operation and Simulation of Interconnected DC Microgrids," *Proc. 2020 IEEE Int. Conf. Power, Instrumentation, Control Comput. PICC 2020*, 2020, doi: 10.1109/PICC51425.2020.9362454.

[12] Z. Ali *et al.*, "Fault Management in DC Microgrids: A Review of Challenges, Countermeasures, and Future Research Trends," *IEEE Access*, vol. 9, pp. 128032–128054, 2021, doi: 10.1109/ACCESS.2021.3112383.

[13] F. S. Al-Ismail, "DC Microgrid Planning, Operation, and Control: A Comprehensive Review," *IEEE Access*, vol. 9, pp. 36154–36172, 2021, doi: 10.1109/ACCESS.2021.3062840.

[14] J. Karsh and V. Gupta, "A Review on Hybrid AC/DC Microgrid System and its Coordination Control," *Int. Res. J. Eng. Technol.*, 2019, doi: 10.1007/s40565-014.

[15] J. Kumar, A. Agarwal, and V. Agarwal, "A review on overall control of DC microgrids," *Journal of Energy Storage*, vol. 21. Elsevier Ltd, pp. 113–138, Feb. 01, 2019, doi: 10.1016/j.est.2018.11.013.

[16] S. Sinha and P. Bajpai, "Power management of hybrid energy storage system in a standalone DC microgrid," *J. Energy Storage*, vol. 30, Aug. 2020, doi: 10.1016/j.est.2020.101523.

[17] W. Jing, C. H. Lai, S. H. W. Wong, and M. L. D. Wong, "Battery-supercapacitor hybrid energy storage system in standalone DC microgrids: Areview," *IET Renewable Power Generation*, vol. 11, no. 4.

Institution of Engineering and Technology, pp. 461–469, Mar. 15, 2017, doi: 10.1049/iet-rpg.2016.0500.

[18] R. Sharma and S. Uvaid Ullah, "Hybrid Energy Management and Control Strategy of Photovoltaic and Supercapacitor," 2021. [Online]. Available: www.ijrdet.com.

[19] S. Tian and S. Feng, "Control strategy of PV-hybrid energy storage device based on household load," in *Lecture Notes in Electrical Engineering*, 2019, vol. 528, pp. 525–534, doi: 10.1007/978-981-13-2288-4_50.

[20] W. A. Mirza, H. Sheh Zad, and S. Bashir, "Robust and Optimal Maximum Power Point Tracking Control of Solar PV Power System," *2020 3rd Int. Conf. Comput. Math. Eng. Technol. Idea to Innov. Build. Knowl. Econ. iCoMET 2020*, pp. 5–10, 2020, doi: 10.1109/iCoMET48670.2020.9074145.

[21] O. Kumar and P. M. Kethoriya, "International Journal of Research Publication and Reviews PV-Battery and Super Capacitor based DC Micro Grid Power Management," *Int. J. Res. Publ. Rev.*, vol. 4, no. 9, pp. 1538–1549, 2023, [Online]. Available: www.ijrpr.com.

[22] W. Zhang, M. Zhong, J. Han, Y. Sun, and Y. Wang, "Research on the strategy of lithium-ion battery-supercapacitor hybrid energy storage to suppress power fluctuation of direct current microgrid," *Int. J. Low-Carbon Technol.*, vol. 17, pp. 1012–1017, 2022, doi: 10.1093/ijlct/ctac083.

[23] K. K. Pandey, M. Kumar, A. Kumari, and J. Kumar, "Bidirectional DC-DC Buck-Boost Converter for Battery Energy Storage System and PV Panel," in *Smart Innovation, Systems and Technologies*, 2021, vol. 206, pp. 681–693, doi: 10.1007/978-981-15-9829-6_54.

[24] F. Zhang *et al.*, "Advantages and Challenges of DC Microgrid for Commercial Building," *1st IEEE Int. Conf. DC Microgrids*, pp. 355–358, 2015.

[25] J. Hofer, B. Svetozarevic, and A. Schlueter, "2017 IEEE Second International Conference on Direct Current Microgrids : June 27-29, 2017, NH Collection, Nürnberg City, Nürnberg, Germany," pp. 188–191, 2017.

[26] P. S. Kirtane and A. D. Shendge, "Control and Management of Autonomous Power between Standalone DC Microgrids," *Proc. 4th Int. Conf. Commun. Electron. Syst. ICCES 2019*, no. Icces, pp. 1811–1815, 2019, doi: 10.1109/ICCES45898.2019.9002314.

[27] M. F. Elmorshedy, U. Subramaniam, J. S. Mohamed Ali, and D. Almakhles, "Energy Management of Hybrid DC Microgrid with Different Levels of DC Bus Voltage for Various Load Types," *Energies*, vol. 16, no. 14, Jul. 2023, doi: 10.3390/en16145438.

[28] K. Al sumarmad, N. Sulaiman, N. I. A. Wahab, and H. Hizam, "Implementation of hybrid optimized battery controller and advanced power management control strategy in a renewable energy integrated DC microgrid," *PLoS One*, vol. 18, no. 6 June, pp. 1–29, 2023, doi: 10.1371/journal.pone.0287136.

[29] T. Wu, X. Shi, L. Liao, C. Zhou, H. Zhou, and Y. Su, "A capacity configuration control strategy to alleviate power fluctuation of hybrid energy storage system based on improved particle swarm optimization," *Energies*, vol. 12, no. 4, Feb. 2019, doi: 10.3390/en12040642.

[30] R. Kandari, P. Gupta, and A. Kumar, "Coordination control and energy management of standalone hybrid AC/DC microgrid," *J. Eng. Res.*, vol. 9, pp. 58–69, 2021, doi: 10.36909/jer.EMSME.13863.

[31] P. D. Le, D. M. Bui, and T. D. Nguyen, "Dynamic and Transient Responses of a Low-Voltage DC Microgrid with Considering Multiple Battery-Supercapacitor-Based Energy Storage Configuration," *Int. J. Sustain. Energy Dev.*, vol. 9, no. 1, pp. 431–444, Jun. 2021, doi: 10.20533/ijsed.2046.3707.2021.0052.

[32] A. Kerboua, F. Boukli-Hacene, and K. A. Mourad, "Particle swarm optimization for micro-grid power management and load scheduling," *Int. J. Energy Econ. Policy*, vol. 10, no. 2, pp. 71–80, 2020, doi: 10.32479/ijeep.8568.

[33] M. Josep, "Aalborg Universitet A Virtual Inertia Control Strategy for DC Microgrids Analogized with Virtual Synchronous Machines Wu , Wenhua ; Chen , Yandong ; Luo , An ; Zhou , Leming ; Zhou , Xiaoping ; Yang , Ling ; Dong , Publication date :," 2017.

[34] M. Yadav, "Enhancement of Stability on Dc Microgrid Using Dual Seires Virtual Impedance Based Fuzzy Controller Under Variation of Constant Power Load ENHANCEMENT OF STABILITY ON DC

MICROGRID USING DUAL SEIRES VIRTUAL IMPEDANCE BASED FUZZY CONTROLLER UNDER VARIATION OF," 2023.

[35] N. Kongtrakul, W. Wangdee, and S. Chantaraskul, "unbalance compensation," no. February, pp. 331–358, 2023, doi: 10.1049/stg2.12106.

[36] T. Dragicevic, J. C. Vasquez, J. M. Guerrero, and D. Skrlec, "Advanced LVDC Electrical Power Architectures and Microgrids," no. March, 2014, doi: 10.1109/MELE.2013.2297033.

[37] J. C. Vasquez and M. Josep, "Aalborg Universitet DC Microgrids—Part II A Review of Power Architectures, Applications, and Standardization Issues Dragicevic, Tomislav; Lu, Xiaonan; Quintero, Juan Carlos Vasquez; Guerrero, Josep M.," 2016.

[38] D. Version and E. Technology, "Aalborg Universitet Multi-Functional Distributed Secondary Control for Autonomous Microgrids Multi-Functional Distributed Secondary Control for Autonomous Microgrids Ph . D . Thesis by Qobad Sha ee Copyright c 2014 Qobad Sha ee This report , or parts of it , may be reproduced without the permission of," 2014.

[39] X. Lu, J. C. Vasquez, S. Member, and J. M. Guerrero, "DC Microgrids – Part I: A Review of Control Strategies and Stabilization Techniques," vol. 8993, no. c, 2015, doi: 10.1109/TPEL.2015.2478859.

[40] B. K. Metihalli, "Disturbance Observer Based Distributed Consensus Control Strategy of Multi-Agent System with External Disturbance in a Standalone DC Microgrid," no. February 2019, pp. 920–936, 2021, doi: 10.1002/asjc.2287.

[41] J. Fang, S. Member, Y. Tang, H. Li, and X. Li, "A Battery / Ultracapacitor Hybrid Energy Storage System for Implementing the Power Management of Virtual Synchronous Generators," no. December, 2017, doi: 10.1109/TPEL.2017.2759256.

[42] M. Moazzami, J. Moradi, H. Shahinzadeh, G. B. Gharehpetian, and H. Mogoei, "Optimal Economic Operation of Microgrids Integrating Wind Farms and Advanced Rail Energy Storage System," vol. 8, no. 2, 2018.

[43] Z. Wang, D. Luo, and L. Zhang, "6 \ VWHP IRU : LQG 3KRWRYROWDLF (QHUJ \ 6WRUDJH."

[44] H. Fathabadi, "Plug-in Hybrid Electric Vehicles (PHEVs): Replacing Internal Combustion Engine with Clean and Renewable Energy Based Auxiliary Power Sources," vol. 8993, no. c, pp. 1–8, 2018, doi: 10.1109/TPEL.2018.2797250.

[45] H. H. Abdeltawab, S. Member, Y. A. I. Mohamed, and S. Member, "Market-Oriented Energy Management of a Hybrid Wind-Battery Energy Storage System Via Model Predictive Control with Constraints Optimizer," vol. 0046, no. c, 2015, doi: 10.1109/TIE.2015.2435694.

[46] U. Manandhar, S. Member, N. R. Tummuru, and S. Kumar, "Validation of Faster Joint Control Strategy for Battery and Supercapacitor Based Energy Storage System," no. April, 2018, doi: 10.1109/TIE.2017.2750622.

[47] S. Choi, M. Sin, D. Kim, C. Won, and Y. Jung, "Versatile Power Transfer Strategies ofPV - Battery Hybrid System for Residential Use with," pp. 409–414, 2014.

[48] A. Q. Almousawi and A. A. Aldair, "A New Power Management Control Strategy for PV-Battery Hybrid System," vol. 1, no. 1, 2022.

[49] M. Yekini, M. Wazir, and N. Bashir, "Energy storage systems for renewable energy power sector integration and mitigation of intermittency," vol. 35, pp. 499–514, 2014.

[50] Q. Li, H. Liang, W. Diao, D. Li, and J. Jiang, "Modular Battery Energy Storage System Based on One Integrated Primary multi-Secondaries Transformer and its Independent Control Strategy," pp. 1–6, 2017.

[51] A. Misra, G. Venkataramani, S. Gowrishankar, and E. Ayyasam, "Renewable Energy Based Smart Microgrids — A Pathway To Green Port Development," vol. 37, no. 2, 2017.

[52] C. Ju, S. Member, P. Wang, L. Goel, and Y. Xu, "A Two-layer Energy Management System for Microgrids with Hybrid Energy Storage considering," pp. 1–11.

[53] G. Barchi, G. Miori, and D. Moser, "A Small-scale Prototype for the Optimization of PV Generation and

Battery Storage through the use of a Building Energy Management System," *2018 IEEE Int. Conf. Environ. Electr. Eng. 2018 IEEE Ind. Commer. Power Syst. Eur. (EEEIC / I&CPS Eur.*, pp. 1–5, 2018.

[54] S. Hajiaghasi, A. Salemnia, and M. Hamzeh, "Hybrid energy storage system for microgrids applications : A review," *J. Energy Storage*, vol. 21, no. August 2018, pp. 543–570, 2019, doi: 10.1016/j.est.2018.12.017.

[55] F. Mohamad and J. Teh, "Development of Energy Storage Systems for Power Network Reliability : A Review," 2018, doi: 10.3390/en11092278.

[56] M. Ahmed, L. Meegahapola, and S. Member, "Stability and Control Aspects of Microgrid Architectures — A Comprehensive Review," vol. 8, 2020, doi: 10.1109/ACCESS.2020.3014977.

[57] P. Fornaro, P. Puleston, and P. Battaiotto, "On-line parameter estimation of a Lithium-Ion battery / supercapacitor storage system using filtering sliding mode differentiators," vol. 32, no. June, 2020.

[58] X. Luo, J. Wang, M. Dooner, and J. Clarke, "Overview of current development in electrical energy storage technologies and the application potential in power system operation Overview of current development in electrical energy storage technologies and the application potential in power system operation q," *Appl. Energy*, no. November, 2014, doi: 10.1016/j.apenergy.2014.09.081.

[59] A. Zayed, A. L. Shaqsi, K. Sopian, and A. Al-hinai, "Review of energy storage services , applications , limitations , and benefits," *Energy Reports*, no. xxxx, 2020, doi: 10.1016/j.egyr.2020.07.028.

[60] N. Vedachalam and G. A. Ramadass, "Realizing Reliable Lithium-Ion Batteries for Critical Remote-Located Offshore Systems," pp. 52–57.

[61] L. Ortiz, R. Orizondo, A. Aguila, J. W. Gonz, I. Isaac, and J. L. Gabriel, "Heliyon Hybrid AC / DC microgrid test system simulation : grid-connected mode," vol. 5, no. November, 2019, doi: 10.1016/j.heliyon.2019.e02862.

[62] M. H. Chehab, C. Ben Salah, R. Z. Falama, M. Tlija, and A. Rabhi, "Comparative Analysis of Energy Storage Technologies for Microgrids," vol. 2023, 2023, doi: 10.1155/2023/6679740.

[63] F. Barati, B. Ahmadi, and O. Keysan, "A Hierarchical Control of Supercapacitor and Microsources in Islanded DC Microgrids," *IEEE Access*, vol. 11, no. January, pp. 7056–7066, 2023, doi: 10.1109/ACCESS.2023.3237684.

[64] T. Thomas *et al.*, "Control of a PV-Wind Based DC Microgrid With Hybrid Energy Storage System Using Lyapunov Approach and Sliding Mode Control," *IEEE Trans. Ind. Appl.*, vol. 60, no. 2, pp. 3746–3758, 2024, doi: 10.1109/TIA.2023.3349359.

[65] S. D. Sandeep and S. Mohanty, "Artificial Rabbits Optimized Neural Network-Based Energy Management System for PV , Battery , and Supercapacitor Based Isolated DC Microgrid System," *IEEE Access*, vol. 11, no. November, pp. 142411–142432, 2023, doi: 10.1109/ACCESS.2023.3340856.

[66] F. Nawaz, E. Pashajavid, Y. Fan, and M. Batool, "Enhanced Distributed Coordinated Control Strategy for DC Microgrid Hybrid Energy Storage Systems Using Adaptive Event Triggering for DC Microgrid Hybrid Energy Storage Systems Using Adaptive Event Triggering," pp. 0–13, 2025, doi: 10.20944/preprints202501.0811.v1.

[67] "Battery / super-capacitor HESS applied in DC microgrid," vol. 69, no. 2, pp. 379–388, 2020, doi: 10.24425/aee.2020.133032.

[68] B. Taheri and A. Shahhoseini, "Direct current (DC) microgrid control in the presence of electrical vehicle / photovoltaic (EV / PV) systems and hybrid energy storage systems : A Case study of grounding and protection issue," no. May 2022, pp. 3084–3099, 2023, doi: 10.1049/gtd2.12882.

[69] F. Ni, Z. Zheng, Q. Xie, X. Xiao, Y. Zong, and C. Huang, "International Journal of Electrical Power and Energy Systems Enhancing resilience of DC microgrids with model predictive control based hybrid energy storage system," *Int. J. Electr. Power Energy Syst.*, vol. 128, no. September 2020, p. 106738, 2021, doi: 10.1016/j.ijepes.2020.106738.

[70] L. Chen, H. Chen, Y. Li, and G. Li, "SMES-Battery Energy Storage System for the Stabilization of a Photovoltaic-Based Microgrid," vol. 28, no. 4, 2018.

[71] C. C. By-nc-nd, “Alternative formats If you require this document in an alternative format , please contact : Highlights :,” vol. 253, 2019, doi: 10.1016/j.apenergy.2019.113529.

[72] N. Suganthi and P. Usha, “Control of Microgrid with Hybrid Energy Storage System.”

[73] S. Punna and S. Banka, “Optimal Energy Management Scheme of Battery Supercapacitor-Based Bidirectional Converter for DC Microgrid Applications,” 2022.

[74] G. Oriti, A. L. Julian, and N. J. Peck, “Power Electronics Enabled Energy Management Systems,” pp. 3224–3231.

[75] S. K. Ramu, I. Vairavasundaram, B. Aljafari, and T. Kareri, “Design of PV , Battery , and Supercapacitor-Based Bidirectional DC-DC Converter Using Fuzzy Logic Controller for HESS in DC Microgrid,” vol. 2024, 2024, doi: 10.1155/2024/3035524.

[76] M. G. Molina, “Energy Storage and Power Electronics Technologies : A Strong Combination to Energy Storage and Power Electronics Technologies : A Strong Combination to Empower the Transformation to the Smart Grid,” no. September, 2017, doi: 10.1109/JPROC.2017.2702627.

[77] T. Dragiˇ, “Power Electronics for Microgrids : Concepts and Future Trends,” 2017, doi: 10.1016/B978-0-08-101753-1.00009-7.

[78] N. Kondrath, “Design and Evaluation of a Novel Hybrid SiC-GaN Based Bidirectional Full-Bridge DC-DC Converter,” 2018, doi: 10.4271/2017-01-2032.Copyright.

[79] L. Bipolar, D. C. Microgrid, P. Prabhakaran, S. Member, and V. Agarwal, “Novel Boost-SEPIC Type Interleaved DC – DC Converter for Mitigation of Voltage Imbalance in,” *IEEE Trans. Ind. Electron.*, vol. 67, no. 8, pp. 6494–6504, 2020, doi: 10.1109/TIE.2019.2939991.

[80] D. Converter *et al.*, “An Autonomous Control Scheme of Global Smooth Transitions for Bidirectional,” vol. 36, no. 2, pp. 950–960, 2021, doi: 10.1109/TEC.2020.3020127.

[81] Z. Sun and S. Bae, “Multiple-Input Soft-Switching DC – DC Converter to Connect Renewable Energy Sources in a DC Microgrid,” *IEEE Access*, vol. 10, no. November, pp. 128380–128391, 2022, doi: 10.1109/ACCESS.2022.3227439.

[82] A. A. Saafan, V. Khadkikar, M. Shawky, E. Moursi, and H. H. Zeineldin, “A New Multiport DC-DC Converter for DC Microgrid Applications,” no. November, 2022, doi: 10.1109/TIA.2022.3213235.

[83] A. A. Saafan *et al.*, “A New Multiport DC-DC Converter for DC Microgrid Applications,” *IEEE Trans. Ind. Appl.*, vol. 59, no. 1, pp. 601–611, 2023, doi: 10.1109/TIA.2022.3213235.

[84] S. S. Khalipe, “DESIGN OF CONVERTER FOR AC / DC MICEROGRID Ne Block Diagram of Microgrid system,” vol. 4, no. 5, pp. 24–28, 2019.

[85] P. Xuewei, S. Member, A. K. Rathore, and S. Member, “Novel Bidirectional Snubberless Naturally Isolated DC / DC Converter for Fuel Cell Vehicles,” vol. 61, no. 5, pp. 2307–2315, 2014.

[86] N. Priyadarshi, S. Padmanaban, M. S. Bhaskar, F. Blaabjerg, and A. Sharma, “Fuzzy SVPWM-based inverter control realisation of grid integrated photovoltaic- wind system with fuzzy particle swarm optimisation maximum power point tracking algorithm for a grid-connected PV / wind power generation system : hardware implementation,” 2018, doi: 10.1049/iet-epa.2017.0804.

[87] B. S. Revathi and M. Prabhakar, “Solar PV Fed DC Microgrid : Applications , Converter Selection , Design and Testing,” *IEEE Access*, vol. 10, no. July, pp. 87227–87240, 2022, doi: 10.1109/ACCESS.2022.3199701.

[88] C. R. Arunkumar, G. S. Member, and U. B. Manthati, “A Hybrid Controller Assisted Voltage Regulation and Power Splitting Strategy for Battery / Supercapacitor System in Isolated DC Microgrid,” *IEEE Trans. Energy Convers.*, vol. 38, no. 3, pp. 1544–1553, 2023, doi: 10.1109/TEC.2023.3270292.

[89] J. Zeng, S. Member, W. Qiao, S. Member, and L. Qu, “An Isolated Three-Port Bidirectional DC-DC Converter for Photovoltaic Systems with Energy Storage,” vol. 9994, no. c, 2015, doi: 10.1109/TIA.2015.2399613.

[90] C. Wireless and P. Transfer, “Capacitive Wireless Power Transfer Applications,” pp. 1–21, 2021.

[91] D. Ashwin, K. Ilango, and V. K. Gopal, "Design and Simulation of Stand-alone Three Phase Power Supply System Using Solar Photo Voltaics for Industrial Load Application .," *2017 Int. Conf. Technol. Adv. Power Energy (TAP Energy)*, pp. 1–6, 2017.

[92] Z. Fusheng, R. T. Naayagi, and S. Member, "Power Converters for DC Microgrids – Modelling and Simulation," *2018 IEEE Innov. Smart Grid Technol. - Asia (ISGT Asia)*, pp. 994–999, 2018.

[93] S. Khan, S. Member, and M. Zaid, "A New Transformerless Ultra High Gain DC – DC Converter for DC Microgrid Application," *IEEE Access*, vol. 9, pp. 124560–124582, 2021, doi: 10.1109/ACCESS.2021.3110668.

[94] P. Shanthi, U. Govindarajan, and D. Parvathyshankar, "Instantaneous power-based current control scheme for VAR compensation in hybrid AC / DC networks for smart grid applications," vol. 7, no. April 2013, pp. 1216–1226, 2014, doi: 10.1049/iet-pel.2013.0253.

[95] P. Architectures, E. Storage, L. Xu, S. Member, J. M. Guerrero, and A. Lashab, "A Review of DC Shipboard Microgrids — Part I :," *IEEE Trans. Power Electron.*, vol. 37, no. 5, pp. 5155–5172, 2022, doi: 10.1109/TPEL.2021.3128417.

[96] P. K. Behera and M. Pattnaik, "Coordinated Power Management of a Laboratory Scale Wind Energy Assisted LVDC Microgrid With Hybrid Energy Storage System," *IEEE Trans. Consum. Electron.*, vol. 69, no. 3, pp. 467–477, 2023, doi: 10.1109/TCE.2023.3287099.

[97] G. D. Kamalapur, "Power Management in DC Microgrid Power Management in DC Microgrid," no. March, 2021.

[98] C. Natesan, S. Ajithan, S. Chozhavendhan, and A. Devendhiran, "Power Management Strategies in Microgrid : A Survey," vol. 5, no. 2, 2015.

[99] A. Kusmantoro and I. Farikhah, "Power management on DC microgrid with new DC coupling based on fuzzy logic," vol. 32, no. 2, pp. 620–631, 2023, doi: 10.11591/ijeecs.v32.i2.pp620-631.

[100] P. Singh and J. S. Lather, "Power management and control of a grid-independent DC microgrid with hybrid energy storage system," *Sustain. Energy Technol. Assessments*, vol. 43, no. July 2020, p. 100924, 2021, doi: 10.1016/j.seta.2020.100924.

[101] "Power Management in DC Microgrid by the DC-," no. March, 2023.

[102] P. José *et al.*, "Power Management Strategy Based on Virtual Inertia for DC Microgrids," vol. 35, no. 11, pp. 12472–12485, 2020, doi: 10.1109/TPEL.2020.2986283.

[103] F. S. Al-ismail and S. Member, "A Critical Review on DC Microgrids Voltage Control and Power Management," *IEEE Access*, vol. 12, no. January, pp. 30345–30361, 2024, doi: 10.1109/ACCESS.2024.3369609.

[104] R. Dey, S. Member, and S. Nath, "Cooperative Active Power Management in Multifrequency Microgrid With an Energy Storage System Based on Distance of Source to Load," *IEEE Access*, vol. 10, no. November, pp. 120398–120411, 2022, doi: 10.1109/ACCESS.2022.3177208.

[105] M. Salman, Y. Ling, Y. Li, J. Xiang, and S. Member, "Coordination-Based Power Management Strategy for Hybrid AC / DC Microgrid," *IEEE Syst. J.*, vol. 17, no. 4, pp. 6528–6539, 2023, doi: 10.1109/JSYST.2023.3315795.

[106] A. L. F. Habibullah, "Decentralized Power Management of DC Microgrid Based on Adaptive Droop Control With Constant Voltage Regulation Renewable energy source," *IEEE Access*, vol. 10, no. November, pp. 129490–129504, 2022, doi: 10.1109/ACCESS.2022.3228703.

[107] S. Sinha, S. Member, A. K. Sinha, P. Bajpai, and S. Member, "Solar PV fed Standalone DC Microgrid with Hybrid Energy Storage System," pp. 31–36.

[108] T. S. Babu, "A Comprehensive Review of Hybrid Energy Storage Systems : Converter Topologies , Control Strategies and Future Prospects," vol. 8, 2020, doi: 10.1109/ACCESS.2020.3015919.

[109] H. Oussama, A. Othmane, S. M. Amine, and H. M. Amine, "Modeling and Control a DC-Microgrid Based on PV and HESS Hybrid Energy Modeling and Control a DC-Microgrid Based on PV and HESS Hybrid Energy Storage System," no. June, 2019.

[110] K. Jm, S. M. S, T. P. I. Ahamed, and M. Shafeeque, "Design and Simulation of Stand-alone DC Microgrid with Energy Storage System," no. December 2021, 2019, doi: 10.1109/INCOS45849.2019.8951384.

[111] "Energy Management Control of DC Microgrid with Electric Vehicle and Hybrid Energy Storage System," no. September, pp. 17–22, 2020, doi: 10.1109/ICICICT46008.2019.8993171.

[112] B. Wang, Y. Wang, Y. Xu, and S. Member, "Consensus-Based Control of Hybrid Energy Storage System With a Cascaded Multiport Converter in DC Microgrids," *IEEE Trans. Sustain. Energy*, vol. 11, no. 4, pp. 2356–2366, 2020, doi: 10.1109/TSTE.2019.2956054.

[113] W. Jiang, L. Zhang, H. Zhao, H. Huang, and R. Hu, "Research on power sharing strategy of hybrid energy storage system in photovoltaic power station based on multi-objective optimisation," doi: 10.1049/iet-rpg.2015.0199.

[114] B. A. Taye, "A new control method of hybrid energy storage system for DC microgrid application," no. March 2023, pp. 1–11, 2024, doi: 10.1002/est2.564.

[115] M. Vijayan, R. R. Udumula, T. Mahto, B. Lokeshgupta, S. Padmanaban, and B. Twala, "Optimal PI-Controller-Based Hybrid Energy Storage System in DC Microgrid," 2022.

[116] T. Boonraksa, W. Pinthurat, and P. Wongdet, "Optimal Capacity and Cost Analysis of Hybrid Energy Storage System in Standalone DC Microgrid," *IEEE Access*, vol. 11, no. July, pp. 65496–65506, 2023, doi: 10.1109/ACCESS.2023.3289821.

[117] L. Zhong *et al.*, "Research on Model Predictive Controlled HESS for Seamless Mode Switching of DC Microgrid," *IEEE Trans. Appl. Supercond.*, vol. 31, no. 8, pp. 1–5, 2021, doi: 10.1109/TASC.2021.3103731.

[118] A. Bharatee, S. Member, P. K. Ray, and S. Member, "A Power Management Scheme for Grid-connected PV Integrated with Hybrid Energy Storage System," vol. 10, no. 4, pp. 954–963, 2022, doi: 10.35833/MPCE.2021.000023.

[119] W. B. Lvdc, "Supervisory Power Management Scheme of a," *IEEE Trans. Ind. Appl.*, vol. 60, no. 2, pp. 4723–4735, 2024, doi: 10.1109/TIA.2024.3365458.

[120] E. W. Nahas, H. A. Abd, D. A. Mansour, and M. M. Eissa, "Extensive analysis of fault response and extracting fault features for DC microgrids," *Alexandria Eng. J.*, vol. 60, no. 2, pp. 2405–2420, 2021, doi: 10.1016/j.aej.2020.12.026.

[121] R. R. Gajjar, N. C. Giri, U. Patel, R. C. Gajjar, D. Dave, and A. M. Aly, "State of charge control based improved hybrid energy storage system for DC microgrid," vol. 13, no. 6, pp. 3779–3788, 2024, doi: 10.11591/eei.v13i6.7759.

[122] Z. Lili, G. Yang, L. Yang, and S. Yao, "Study on optimization of operating parameters of hybrid energy storage system," *Proc. - 2017 Int. Conf. Smart Grid Electr. Autom. ICSGEA 2017*, vol. 2017-Janua, pp. 184–188, 2017, doi: 10.1109/ICSGEA.2017.45.

[123] I. E. Atawi, A. Q. Al-Shetwi, A. M. Magableh, and O. H. Albalawi, "Recent Advances in Hybrid Energy Storage System Integrated Renewable Power Generation: Configuration, Control, Applications, and Future Directions," *Batteries*, vol. 9, no. 1. MDPI, Jan. 01, 2023, doi: 10.3390/batteries9010029.

[124] H. Li, L. Fu, Y. Zhang, and Y. Xiong, "A Dynamic and Cooperative Control Strategy for Multi-Hybrid Energy Storage System of DC Microgrid Based on SOC," *Front. Energy Res.*, vol. 9, no. January, pp. 1–14, 2022, doi: 10.3389/fenrg.2021.795513.

[125] Y. Joshi, J. Kumar Maherchandani, R. Raj Joshi, and V. Kumar Yadav, "Intelligent Control Strategy to Enhance Power Smoothing of Renewable based Microgrid with Hybrid Energy Storage," 2021.

[126] B. K. Ravi and P. R. Rohan, "Hybrid Energy Management and Control Strategy of Photovoltaic Generation Systems," vol. 9, no. 3, pp. 13–22, 2021.

[127] Z. Cabrane, J. Kim, K. Yoo, and M. Ouassaid, "HESS-based photovoltaic/batteries/supercapacitors: Energy management strategy and DC bus voltage stabilization," *Sol. Energy*, vol. 216, no. February, pp. 551–563, 2021, doi: 10.1016/j.solener.2021.01.048.

[128] Y. Sawle, P. Ferrão, J. Fournier, B. Lacarrière, and O. Le Corre, "Optimal sizing of standalone PV / Wind / Biomass hybrid energy system using GA and PSO optimization technique " *Energy Procedia*, vol. 117, no. September, pp. 690–698, 2017, doi: 10.1016/j.egypro.2017.05.183.

[129] Z. Fan, S. Member, B. Fan, J. Peng, and S. Member, "Operation Loss Minimization Targeted Distributed Optimal Control of DC Microgrids," *IEEE Syst. J.*, vol. 15, no. 4, pp. 5186–5196, 2021, doi: 10.1109/JSYST.2020.3035059.

[130] A. A. Z. Diab, H. M. Sultan, I. S. Mohamed, K. O. N, and T. D. Do, "Application of Different Optimization Algorithms for Optimal Sizing of PV / Wind / Diesel / Battery Storage Stand-Alone Hybrid Microgrid," *IEEE Access*, vol. PP, p. 1, 2019, doi: 10.1109/ACCESS.2019.2936656.

[131] W. Su *et al.*, "An MPC-Based Dual-Solver Optimization Method for DC Microgrids With Simultaneous Consideration of Operation Cost and Power Loss," vol. 36, no. 2, pp. 936–947, 2021, doi: 10.1109/TPWRS.2020.3011038.

[132] B. K. Das, M. A. Alotaibi, P. Das, M. S. Islam, and S. K. Das, "Feasibility and techno-economic analysis of stand-alone and grid-connected PV / Wind / Diesel / Batt hybrid energy system : A case study," *Energy Strateg. Rev.*, vol. 37, no. June, p. 100673, 2021, doi: 10.1016/j.esr.2021.100673.

[133] M. Amin and M. Mgs, "Control and optimisation of networked microgrids : A review," no. July 2020, pp. 1–16, 2021, doi: 10.1049/rpg2.12111.

[134] B. Mozafari and S. Mohammadi, "Optimal sizing of energy storage system for microgrids," vol. 39, no. August, pp. 819–841, 2014.

[135] D. G. Elvira, H. V. Blaví, À. C. Pastor, and L. M. Salamero, "Efficiency Optimization of a Variable Bus Voltage DC Microgrid," 2018, doi: 10.3390/en11113090.

[136] H. Zolfaghari, H. Karimi, A. Ramezani, and M. Davoodi, "Minimizing Voltage Ripple of a DC Microgrid via a Particle-Swarm-Optimization-Based Fuzzy Controller," *Algorithms*, vol. 17, no. 4, Apr. 2024, doi: 10.3390/a17040140.

[137] S. Hardi, R. N. Salam, S. Suherman, and S. Riadi, "Optimizing Microgrid Efficiency with Battery and Super Capacitor Hybrid Systems," vol. 02010, pp. 1–8, 2024.

[138] "Intelligent fuzzy logic with firefly algorithm and particle swarm optimization for semi-active suspension system using magneto-rheological damper," no. July 2015, 2017, doi: 10.1177/1077546315580693.

[139] O. Bel and H. Brahim, "Simulation and comparison of P & O and Fuzzy Logic MPPT Techniques at Different irradiation Conditions," pp. 1–7, 2017.

[140] S. Wang *et al.*, "OPEN A comprehensive survey of the application of swarm intelligent optimization algorithm in photovoltaic energy storage systems," *Sci. Rep.*, pp. 1–30, 2024, doi: 10.1038/s41598-024-68964-w.

[141] S. Automatisés, A. I. Zermane, and T. Bordjiba, "Optimizing Energy Management of Hybrid Battery-Supercapacitor Energy Storage System by Using PSO-Based Fractional Order Controller for Photovoltaic Off-Grid Installation," vol. 57, no. 2, pp. 465–475, 2024.

[142] M. Juneja, S. K. Nagar, and S. R. Mohanty, "Control Engineering Practice ABC based reduced order modelling of microgrid in grid-tied mode," *Control Eng. Pract.*, vol. 84, no. July 2018, pp. 337–348, 2019, doi: 10.1016/j.conengprac.2018.12.004.

[143] T. Simpkins, K. Anderson, D. Cutler, D. Olis, E. Elgqvist, and A. Walker, "Optimizing Energy Storage Economics," no. July, p. 66967, 2016.

[144] S. Tong, H. Yangy, and W. Torre, "Energy Storage System Dispatching Optimization in Stacked Applications for Utility Grid."

[145] M. J. Aliabadi and M. Radmehr, "Hybrid energy system optimization integrated with battery storage in radial distribution networks considering reliability and a robust framework," pp. 1–24, 2024.

[146] X. Chen, G. S. Member, Y. Yang, J. Song, and S. Member, "Hybrid Energy Storage System Optimization With Battery Charging and Swapping Coordination," *IEEE Trans. Autom. Sci. Eng.*, vol. 21, no. 2, pp. 4094–4105, 2024, doi: 10.1109/TASE.2023.3292189.

[147] N. Formulation, "Optimization of Hybrid Energy Storage Systems for Vehicles with Dynamic On-Off Power Loads Using a," 2018, doi: 10.3390/en11102699.

[148] E. Science, "Optimization of Battery Energy Storage System (BESS) sizing for solar power plant at remote area Optimization of Battery Energy Storage System (BESS) sizing for solar power plant at remote area," doi: 10.1088/1755-1315/599/1/012030.

[149] E. Engineering, "AN INTEGRATED CONTROL FOR STANDALONE PV SYSTEM WITH BATTERY," 2016.

[150] S. M. Kisengeu, C. M. Muriithi, and G. N. Nyakoe, "na," *HELIYON*, p. e08138, 2021, doi: 10.1016/j.heliyon.2021.e08138.

[151] S. A. Shezan, I. Kamwa, F. Ishraque, S. M. Muyeen, and K. N. Hasan, "Evaluation of Different Optimization Techniques and Control Strategies of Hybrid Microgrid : A Review," pp. 1–30, 2023.

[152] M. Sanaei, H. Akbari, and Z. Beheshtipour, "New PSO-GWO-based model for enhancing power quality in electrical networks interconnected with photovoltaic sources," no. December, pp. 1–17, 2024, doi: 10.3389/fenrg.2024.1476638.

[153] A. Ibrahim *et al.*, "Optimized Energy Management Strategy for an Autonomous DC Microgrid Integrating PV / Wind / Battery / Diesel-Based Hybrid PSO-GA-LADRC Through SAPF," 2024.

[154] M. A. Mquqwana, "Particle Swarm Optimization for an Optimal Hybrid Renewable Energy Microgrid System under Uncertainty," 2024.

[155] P. N. D. Premadasa and D. P. Chandima, "An innovative approach of optimizing size and cost of hybrid energy storage system with state of charge regulation for stand-alone direct current," *J. Energy Storage*, vol. 32, no. January, p. 101703, 2020, doi: 10.1016/j.est.2020.101703.

[156] C. Xu *et al.*, "Economic Analysis of Li-Ion Battery – Supercapacitor Hybrid Energy Storage System Considering Multitype Frequency Response Benefits in Power Systems," 2023.

[157] T. Sutikno and W. Arsadiando, "A Review of Recent Advances on Hybrid Energy Storage System for Solar Photovoltaics Power Generation," *IEEE Access*, vol. 10, pp. 42346–42364, 2022, doi: 10.1109/ACCESS.2022.3165798.

[158] A. Narvaez, C. Cortes, and C. Trujillo, "Topologies for Battery and Supercapacitor Interconnection in Residential Microgrids with Intermittent Generation Topolog ´ Supercondensadores en Microrredes de Tipo Residencial con on Intermitente," 2020.

[159] W. Jing, C. H. Lai, S. Hui, W. Wong, M. Ling, and D. Wong, "Battery-supercapacitor hybrid energy storage system in standalone DC microgrids : areview," pp. 461–469, 2017, doi: 10.1049/iet-rpg.2016.0500.

[160] S. Alsadi and B. Alsayid, "Maximum Power Point Tracking Simulation for Photovoltaic Systems Using Perturb and Observe Algorithm," vol. 2, no. 6, pp. 80–85, 2012.

[161] S. M. Control and C. Won, "and Experimental Validation," 2021.

[162] R. Abhishek, "Design and Analysis of a DC -DC Buck converter and Boost Converter to Achieve High Efficiency by altering duty cycle and input voltage," no. June, 2020, doi: 10.29322/IJSRP.10.06.2020.p10285.

[163] K. Khattab, A. Safa, A. Gouichiche, Y. Messlem, D. O. Abdeslam, and A. Chibani, "An Improved Current Ripples Minimization Technique for Cascaded DC – DC Converter in DC Microgrid," vol. 24, no. 2, pp. 463–476, 2024, doi: 10.5152/electrica.2024.23177.

[164] S. Ramalingam, S. Harika, A. Sowmya, and N. Ramakrishnan, "Design and Implementation of Boost-Buck DC – DC Converter for Battery Design and Implementation of Boost-Buck DC – DC Converter," no. July, 2023, doi: 10.1007/978-981-16-0719-6.

[165] V. P. K. S and B. P. Divakar, “Real Time Estimation of SoC and SoH of Batteries,” vol. 8, no. 1, 2018.

[166] W. D. P. Vallejos, “Standalone Photovoltaic System , using a Single Stage Boost DC / AC Power Inverter Controlled by a Double Loop Control,” 2017.

[167] P. Saxena, N. Singh, and A. K. Pandey, “International Journal of Electrical Power and Energy Systems Enhancing the transient performance and dynamic stability of microgrid using PI inertia injection controller,” *Int. J. Electr. Power Energy Syst.*, vol. 134, no. August 2021, p. 107334, 2022, doi: 10.1016/j.ijepes.2021.107334.

[168] M. Lema, W. Pavon, L. Ortiz, and A. B. Asiedu-asante, “Controller Coordination Strategy for DC Microgrid Using Distributed Predictive Control Improving Voltage Stability,” pp. 1–15, 2022.

[169] R. C. Beremeh, A. F. Olatunde, J. S. Mommoh, A. Airoboman, and S. O. Ibharunujele, “A hybrid optimization scheme for tuning fractional order PID controller parameters for a DC motor,” 2024.

[170] M. F. Roslan, M. A. Hannan, P. J. Ker, A. W. M. Zuhdi, V. Article, and G. Scholar, “Correction : Particle swarm optimization algorithm-based PI inverter controller for a grid-connected PV system,” pp. 1–2, 2021.

[171] M. Using, H. Controller, A. Bee, and N. Kahraman, “Improved Optimal Control of Transient Power Sharing in Colony Algorithm,” 2022.

[172] M. Naguib, F. Nashed, F. Ahmed, and M. Osman, “A Novel Hybrid-HHOPSO Algorithm Based Optimal Compensators of Four-Layer Cascaded Control for a New Structurally Modified AC Microgrid,” vol. 9, 2021, doi: 10.1109/ACCESS.2020.3047876.

[173] M. Dashtdar, A. Flah, S. Mohammad, S. Hosseinimoghadam, E. C. Bortoni, and S. Member, “Improving the Power Quality of Island Microgrid With Voltage and Frequency Control Based on a Hybrid Genetic Algorithm and PSO,” vol. 10, no. October, 2022.

[174] S. Santra and M. De, “Grey wolf optimization approach for enhancing the transient stability of microgrid using fractional-order PID-based inertia injection controller,” *Electr. Eng.*, vol. 105, no. 6, pp. 4361–4376, 2023, doi: 10.1007/s00202-023-01946-9.

[175] Z. H. A. Al-Tameemi, T. T. Lie, G. Foo, and F. Blaabjerg, “Optimal Coordinated Control of DC Microgrid Based on Hybrid PSO–GWO Algorithm,” *Electricity*, vol. 3, no. 3, pp. 346–364, Sep. 2022, doi: 10.3390/electricity3030019.

LIST OF PUBLICATIONS

Journal Publications:

1. **Kinjal R. Patel**, Jagrut J. Gadit. "Power Management and Control of Hybrid Energy Storage System in a Standalone DC Microgrid" ***Journal of Alternate Energy Sources & Technologies***, Volume 14, Issue 3,41-52p, **ISSN**:2321-5186, DOI:10.37591/JoAEST.

2. Ruchi M. Sadhu, **Kinjal R. Patel**, Jagrut J. Gadit, "Energy management using hybrid energy storage system in DC microgrid: A Review" ***Journal of Trends in Electrical Engineering***, April 10, 2024; 14(1): 37–43p, **ISSN**: 2249-4774, DOI:10.37591/TEE

3. **Kinjal R. Patel**, Dr. Jagrut J. Gadit, "Power Control and Optimization in DC Microgrid: A Harmonious and Effective Approach" ***International Journal of Electrical Engineering and Technology (IJEET)***, December 08, 2024;15(2):1-14p, **ISSN**: 0976-6553, DOI: https://doi.org/10.34218/IJEET_15_06_001

Conference Proceedings Publications and Book Series:

1. **Kinjal R. Patel**, Jagrut J. Gadit "Power management and Control of Hybrid Energy storage system in a Standalone DC Microgrid" *International Multidisciplinary Conference on Emerging Trends in Sustainable development (IMCETSC)*, Mahuva,15th February 2024, **ISSN**:978-81-952901-7-8
   Awarded as **BEST RESEARCH PAPER**

2. Ruchi M. Sadhu, **Kinjal R. Patel**, Dr. Jagrut Gadit, "Energy management using Hybrid energy storage system in DC microgrid: A Review", *International Multidisciplinary Conference on Emerging Trends in Sustainable development (IMCETSC)*, Mahuva,15th February 2024, **ISSN**:978-81-952901-7-8

3. **Kinjal Patel**, Dr. Jagrut J. Gadit, "A novel approach for power management Strategies on Hybrid Battery-Supercapacitor Energy Storage Systems in DC Microgrid", *National Conference IETE NTPC PRECCON-2024 on Recent Trends in engineering and technology*, *Loni*, MH-India, April 1st and 2nd,2024

   Book Name: *A Hybrid Mode: National Conference on IETE-National Technical Contest-2024 on "Recent Trends in engineering and technology*" **ISBN**: 978-93-340-3017-4

4. **Kinjal R. Patel**, Dr. Jagrut J. Gadit, "Modeling and Simulation of a Hybrid Energy Storage System for DC Microgrid", *International Conference on Paradigms of Communication, Computing and Data Analytics (PCCDA)*, April 21st,2024, **ISSN**:2524-7565

   Book Name: "*Proceeding of International Conference on Paradigms of Communication, Computing, and Data Analytics"* **ISBN:** 978-981-97-8668-8

   Springer Nature Book Series

   (Web Of Science)

Communicated Publication in Journals and Conference (Under review)

1. **Kinjal Patel** and Jagrut J. Gadit "Design of DC microgrid using a Composite Energy Storage System Involving Battery -Supercapacitor based energy management system", *Journal of Electrical Systems (JES)*, -- Scopus Indexed

2. **Kinjal Patel** and Jagrut J. Gadit "Power Control and Optimization in DC Microgrids: A Harmonious and Effective Approach", *5th International Conference on Advanced Engineering Optimization Through Intelligent Techniques (AEOTIT)*, 28-30 November 2024, SURAT. --Scopus Indexed