

DAFTAR PUSTAKA

- [1] K. Bai, V. Sindhu, and A. Haque, “Fault Ride Through approach for Grid-Connected Photovoltaic System,” *E-Prime - Adv. Electr. Eng. Electron. Energy*, vol. 5, p. 100232, Sep. 2023, doi: 10.1016/j.prime.2023.100232.
- [2] I. A. Aditya, T. Wijayanto, and D. F. Hakam, “Advancing Renewable Energy in Indonesia: A Comprehensive Analysis of Challenges, Opportunities, and Strategic Solutions,” *Sustainability*, vol. 17, no. 5, p. 2216, Mar. 2025, doi: 10.3390/su17052216.
- [3] A. Gholipour, M. Farhadi-Kangarlu, Y. Neyshabouri, and V. Talavat, “Low voltage ride through (LVRT) enhancement of a two-stage grid-connected photovoltaic system based on finite-control-set model predictive control strategy,” *Int. J. Renew. Energy Dev.*, vol. 14, no. 3, pp. 404–419, May 2025, doi: 10.61435/ijred.2025.60491.
- [4] A. A. Sinaga and Y. Simamora, “SIMULASI PEMBELAJARAN ANALISIS HUBUNG SINGKAT BERBASIS ETAP PADA MATA KULIAH ANALISA SISTEM TENAGA LISTRIK,” vol. 12, no. 1, 2025.
- [5] “Perancangan Model Predictive Control Untuk Sistem Kendali Penggerak Photovoltaic.”
- [6] Y. Yang, F. Blaabjerg, and H. Wang, “Low-Voltage Ride-Through of Single-Phase Transformerless Photovoltaic Inverters,” *IEEE Trans. Ind. Appl.*, vol. 50, no. 3, pp. 1942–1952, May 2014, doi: 10.1109/TIA.2013.2282966.
- [7] S. S. Sahoo and A. Beheramali, “A Review of Fault Ride through Approach in Solar Photo Voltaic System,” vol. 14, no. 04.
- [8] Y. Alharbi, A. Darwish, and X. Ma, “A Review of Model Predictive Control for Grid-Connected PV Applications,” *Electronics*, vol. 14, no. 4, p. 667, Feb. 2025, doi: 10.3390/electronics14040667.
- [9] U. R. and S. D., “Fault Ride Through in Grid Integrated Hybrid System Using FACTS Device and Electric Vehicle Charging Station,” *Energies*, vol. 14, no. 13, p. 3828, Jun. 2021, doi: 10.3390/en14133828.
- [10] X. Wen, T. Wu, H. Jiang, J. Peng, and H. Wang, “MPC-based control strategy of PV grid connected inverter for damping power oscillations,” *Front. Energy Res.*, vol. 10, p. 968910, Sep. 2022, doi: 10.3389/fenrg.2022.968910.
- [11] D. Kim, U. F. Ramadhan, S. U. Islam, S. Jung, and M. Yoon, “Design and Implementation of Novel Fault Ride through Circuitry and Control for Grid-Connected PV System,” *Sustainability*, vol. 14, no. 15, p. 9736, Aug. 2022, doi: 10.3390/su14159736.
- [12] F. Selim, M. Aly, T. F. Megahed, M. Shoyama, and S. M. Abdelkader, “Model Predictive Controlled Parallel Photovoltaic-Battery Inverters Supporting

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- Weak Grid Environment,” *Sustainability*, vol. 16, no. 17, p. 7261, Aug. 2024, doi: 10.3390/su16177261.
- [13] A. Hayat, D. Sibtain, A. F. Murtaza, S. Shahzad, M. S. Jajja, and H. Kilic, “Design and Analysis of Input Capacitor in DC–DC Boost Converter for Photovoltaic-Based Systems,” *Sustainability*, vol. 15, no. 7, p. 6321, Apr. 2023, doi: 10.3390/su15076321.
- [14] N. Hanisah Baharudin, T. Muhammad Nizar Tunku Mansur, F. Abdul Hamid, R. Ali, and M. Irwanto Misrun, “Topologies of DC-DC Converter in Solar PV Applications,” *Indones. J. Electr. Eng. Comput. Sci.*, vol. 8, no. 2, p. 368, Nov. 2017, doi: 10.11591/ijeecs.v8.i2.pp368-374.
- [15] S. R. Mohamed, P. A. Jeyanthi, D. Devaraj, M. H. Shwehdi, and A. Aldalbahi, “*dc-link* Voltage Control of a Grid-Connected Solar Photovoltaic System for Fault Ride-Through Capability Enhancement,” *Appl. Sci.*, vol. 9, no. 5, p. 952, Mar. 2019, doi: 10.3390/app9050952.
- [16] A. Gencer, “Low Voltage Ride-Through Improvement of a Grid-Connected PV Power System Using a Machine Learning Control System,” *Appl. Sci.*, vol. 15, no. 8, p. 4251, Apr. 2025, doi: 10.3390/app15084251.
- [17] M. Dursun and M. K. Dosoglu, “LCL Filter Design for Grid Connected Three-Phase Inverter,” in *2018 2nd International Symposium on Multidisciplinary Studies and Innovative Technologies (ISMSIT)*, Ankara: IEEE, Oct. 2018, pp. 1–4. doi: 10.1109/ISMSIT.2018.8567054.
- [18] M. Kuncoro and I. Garniwa, “DVR to Voltage sag Mitigation Due to Induction Motor Starting and 3 Phase Fault,” in *2018 5th International Conference on Information Technology, Computer, and Electrical Engineering (ICITACEE)*, Semarang: IEEE, Sep. 2018, pp. 73–78. doi: 10.1109/ICITACEE.2018.8576924.
- [19] E. M. Silalahi, “ANALISIS ENERGI LISTRIK PLTS ON-GRID DENGAN BOOST CONVERTER DAN INVERTER BERBASIS MATLAB/SIMULINK,” *J. Inform. Dan Tek. Elektro Terap.*, vol. 13, no. 1, Jan. 2025, doi: 10.23960/jitet.v13i1.5959.
- [20] R. D. Caldas, A. Rodrigues, E. B. Gil, G. N. Rodrigues, T. Vogel, and P. Pelliccione, “A Hybrid Approach Combining Control Theory and AI for Engineering Self-Adaptive Systems,” in *Proceedings of the IEEE/ACM 15th International Symposium on Software Engineering for Adaptive and Self-Managing Systems*, Jun. 2020, pp. 9–19. doi: 10.1145/3387939.3391595.
- [21] C. Nithya and J. P. Roselyn, “Development of grid-side converter-based FRT control and protection in a grid-connected solar photovoltaic park system under different control modes,” *Front. Energy Res.*, vol. 10, p. 1009196, Sep. 2022, doi: 10.3389/fenrg.2022.1009196.

- [22] M. Halpin, *IEEE Recommended Practice and Requirements for Harmonic Control in Electric Power Systems*. doi: 10.1109/IEEESTD.2014.6826459.
- [23] M. H. Mohamed Hariri, M. Salem, M. K. Mohd Jamil, M. N. Abdullah, and M. K. Mat Desa, "Modeling and analysis of 100 kW two-stage three-phase grid-connected PV generation system under absurd atmospheric and grid disturbances," *PLOS ONE*, vol. 20, no. 6, Art. no. e0323269, Jun. 2025, doi: 10.1371/journal.pone.0323269.
- [24] A. Arranz-Gimon, A. Zorita-Lamadrid, D. Morinigo-Sotelo, and O. Duque-Perez, "A Review of Total Harmonic Distortion Factors for the Measurement of Harmonic and Interharmonic Pollution in Modern Power Systems," *Energies*, vol. 14, no. 20, Art. no. 6467, 2021, doi: 10.3390/en14206467.
- [25] J.-A. Arteaga, Y. U. López, J. A. López, and J. Posada, "Decoding Harmonics: Total Harmonic Distortion in Solar Photovoltaic Systems with Integrated Battery Storage," *Electricity*, vol. 6, no. 2, Art. no. 28, 2025, doi: 10.3390/electricity6020028.
- [26] M. Talha, A. Amir, S. R. S. Raihan, and N. A. Rahim, "Grid-connected photovoltaic inverters with low-voltage ride through for a residential-scale system: A review," *International Transactions on Electrical Energy Systems*, 2020, doi: 10.1002/2050-7038.12630.
- [27] M. Pastor and J. Dudrik, "Comparison of MPC and PI Controller for Grid-Connected Cascade Inverter," *Elektronika ir Elektrotechnika*, vol. 20, no. 6, pp. 46–50, 2014, doi: 10.5755/j01.eee.20.6.7266.
- [28] C. Smith, A. Gargoom, M. E. Haque, and A. Oo, "Continuous Control Set Model Predictive Control in Grid-Connected Solar PV Inverter," in *Proc. 31st Australasian Universities Power Engineering Conference (AUPEC)*, 2021, doi: 10.1109/AUPEC52110.2021.9597800.
- [29] X. H. Nguyen and M. P. Nguyen, "Mathematical modeling of photovoltaic cell/module/arrays with tags in Matlab/Simulink," *Environmental Systems Research*, vol. 4, no. 24, 2015, doi: 10.1186/s40068-015-0047-9.
- [30] N. Jaalam, A. Z. Ahmad, A. M. A. Khalid, R. Abdullah, N. M. Saad, S. A. Ghani, and L. N. Muhammad, "Low Voltage Ride through Enhancement Using Grey Wolf Optimizer to Reduce Overshoot Current in the Grid-Connected PV System," *Mathematical Problems in Engineering*, vol. 2022, Art. no. 3917775, 2022, doi: 10.1155/2022/3917775.
- [31] T. Li, H. Fan, S. Zeng, X. Hu, Z. Meng, and Y. Zhao, "A low voltage ride-through strategy for grid-connected PV converters based on variable power point tracking method," *Energy Reports*, vol. 8, pp. 398–404, 2022, doi: 10.1016/j.egyr.2022.08.167.
- [32] J. Joshi, A. K. Swami, V. Jatily, and B. Azzopardi, "A Comprehensive Review of Control Strategies to Overcome Challenges During LVRT in PV

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- Systems,” *IEEE Access*, vol. 9, pp. 121804–121834, 2021, doi: 10.1109/ACCESS.2021.3109050.
- [33] O. Alrumayh, K. Sayed, and A. Almutairi, “LVRT and Reactive Power/Voltage Support of Utility-Scale PV Power Plants during Disturbance Conditions,” *Energies*, vol. 16, no. 7, Art. no. 3245, 2023, doi: 10.3390/en16073245.
- [34] M. Zainuddin, F. E. P. Surusa, M. Asri, and A. Mokoagow, “Reactive power control of solar photovoltaic inverters for grid code compliance support,” *International Journal of Applied Power Engineering (IJAPE)*, vol. 12, no. 3, pp. 300–311, Sep. 2023, doi: 10.11591/ijape.v12.i3.pp300-311.
- [35] Y. Gong, I. Kim, and W. Choi, “Improved control of multi terminal direct current voltage source converters using proportional integral and lead lag controllers,” *Scientific Reports*, vol. 15, Art. no. 5368, 2025, doi: 10.1038/s41598-025-89205-8.