

DAFTAR PUSTAKA

- [1] I. E. Agency, “World energy outlook 2024,” Tech. Rep., 2024. [Online]. Available: www.iea.org/terms
- [2] H. Gürbüz, S. Demirtürk, H. Akçay, and Ümit Topalcı, “Thermal stabilization and energy harvesting in a solar pv/t-pcm-teg hybrid system: A case study on the design of system components,” *Energy Conversion and Management*, vol. 294, p. 117536, 10 2023. [Online]. Available: <https://www.sciencedirect.com/science/article/pii/S0196890423008828?via%3Dihub>
- [3] M. S. Sheik, P. Kakati, D. Dandotiya, U. R. M, and R. C. S, “A comprehensive review on various cooling techniques to decrease an operating temperature of solar photovoltaic panels,” *Energy Nexus*, vol. 8, p. 100161, 12 2022. [Online]. Available: <https://www.sciencedirect.com/science/article/pii/S2772427122001164>
- [4] T. Li, J. Yu, X. Peng, W. Zhou, C. Xu, G. Li, and Q. Mao, “Comparison of the thermoelectric performance of different photovoltaic/thermal hybrid thermoelectric generation modules: An experimental study,” *Applied Energy*, vol. 378, p. 124771, 1 2025. [Online]. Available: <https://www.sciencedirect.com/science/article/pii/S0306261924021548>
- [5] A. Ejaz, F. Jamil, and H. M. Ali, “A novel thermal regulation of photovoltaic panels through phase change materials with metallic foam-based system and a concise comparison: An experimental study,” *Sustainable Energy Technologies and Assessments*, vol. 49, p. 101726, 2 2022. [Online]. Available: <https://www.sciencedirect.com/science/article/pii/S2213138821007402?via%3Dihub>
- [6] P. Dwivedi, K. Sudhakar, A. Soni, E. Solomin, and I. Kirpichnikova, “Advanced cooling techniques of p.v. modules: A state of art,” *Case Studies in Thermal Engineering*, vol. 21, 2020.
- [7] M. M. Fouad, L. A. Shihata, and E. S. I. Morgan, “An integrated review of factors influencing the performance of photovoltaic panels,” *Renewable and Sustainable Energy Reviews*, vol. 80, pp. 1499–1511, 12 2017. [Online]. Available: <https://www.sciencedirect.com/science/article/pii/S1364032117307803>
- [8] A. Z. Sahin, K. G. Ismaila, B. S. Yilbas, and A. Al-Sharafi, “A review on the performance of photovoltaic/thermoelectric hybrid generators,” *International Journal of Energy Research*, vol. 44, pp. 3365–3394, 4 2020. [Online]. Available: [/doi/pdf/10.1002/er.5139https://onlinelibrary.wiley.com/doi/abs/10.1002/er.5139https://onlinelibrary.wiley.com/doi/10.1002/er.5139](https://doi/pdf/10.1002/er.5139https://onlinelibrary.wiley.com/doi/abs/10.1002/er.5139https://onlinelibrary.wiley.com/doi/10.1002/er.5139)
- [9] S. Wanquan, E. Niringiyimana, and V. Ndayishimiye, “Analysis of electrical characteristics and performance of poly-crystalline solar pv module by i-v tester under temperature and solar irradiance variation in spring season,” *2020 IEEE PES/IAS PowerAfrica, PowerAfrica 2020*, 8 2020. [Online]. Available: https://www.researchgate.net/publication/346194096_Analysis_of_Electrical_Characteristics_and_Performance_of_Poly-Crystalline_Solar_PV_Module_by_I-V_Tester_Under_Temperature_and_Solar_Irradiance_Variation_in_Spring_Season

- [10] A. K. Tripathi, S. Ray, and M. Aruna, "Analysis on photovoltaic panel temperature under the influence of solar radiation and ambient temperature," *Proceedings of the 2021 1st International Conference on Advances in Electrical, Computing, Communications and Sustainable Technologies, ICAECT 2021*, 2021. [Online]. Available: <https://ieeexplore.ieee.org/document/9392619>
- [11] A. H. Moon and A. Rahman, "Design and performance comparison of solar pv & pv/t systems with enhanced system efficiency," *2025 IEEE North-East India International Energy Conversion Conference and Exhibition, NE-IECCE 2025*, 2025. [Online]. Available: <https://ieeexplore-ieee-org.ezproxy.ugm.ac.id/document/11182749>
- [12] M. A. I. Khan, M. I. Khan, A. H. Kazim, A. Shabir, F. Riaz, N. Mustafa, H. Javed, A. Raza, M. Hussain, and C. A. Salman, "An experimental and comparative performance evaluation of a hybrid photovoltaic-thermoelectric system," *Frontiers in Energy Research*, vol. 9, 9 2021.
- [13] T. Dodds, Z. Zamanipour, and S. E. Hosseini, "The performance of a hybrid photovoltaic-thermoelectric generator (pv-teg) compared to a solar pv panel," *2025 IEEE Systems and Information Engineering Design Symposium, SIEDS 2025*, pp. 462–466, 2025. [Online]. Available: <https://ieeexplore-ieee-org.ezproxy.ugm.ac.id/document/11021187>
- [14] R. Farhani, C. Ennawaoui, A. Hajjaji, Y. Boughaleb, A. Rivenq, and Y. E. Hillali, "Photovoltaic-thermoelectric (pv-te) hybrid system for thermal energy harvesting in low-power sensors," *Materials Today: Proceedings*, vol. 66, pp. 223–228, 1 2022. [Online]. Available: https://www.sciencedirect.com/science/article/pii/S2214785322028097?ref=pdf_download&fr=RR-2&rr=9c1a3f899fe24f85
- [15] N. Nadaf and A. Preethi, "Review on waste heat energy harvesting using teg: Applications and enhancements," *2021 8th International Conference on Smart Computing and Communications: Artificial Intelligence, AI Driven Applications for a Smart World, ICSCC 2021*, pp. 334–339, 7 2021. [Online]. Available: <https://ieeexplore-ieee-org.ezproxy.ugm.ac.id/document/9528196>
- [16] T. Dewi, P. Risma, and Y. Oktarina, "A review of factors affecting the efficiency and output of a pv system applied in tropical climate," *IOP Conference Series: Earth and Environmental Science*, vol. 258, p. 012039, 4 2019. [Online]. Available: <https://iopscience.iop.org/article/10.1088/1755-1315/258/1/012039><https://iopscience.iop.org/article/10.1088/1755-1315/258/1/012039/meta>
- [17] K. Richard, K. J. Ukagwu, and W. Okafor, "Factors influencing the efficiency of solar energy systems," *Journal of Engineering, Technology, and Applied Science (JETAS)*, vol. 6, pp. 119–131, 12 2024.
- [18] K. Hasan, S. B. Yousuf, M. S. H. K. Tushar, B. K. Das, P. Das, and M. S. Islam, "Effects of different environmental and operational factors on the pv performance: A comprehensive review," *Energy Science and Engineering*, vol. 10, pp. 656–675, 2 2022.

- [19] A. Dixit, A. Saxena, R. Sharma, D. Behera, S. Mukherjee, A. Dixit, A. Saxena, R. Sharma, D. Behera, and S. Mukherjee, "Solar photovoltaic principles," *Solar PV Panels - Recent Advances and Future Prospects*, 9 2023. [Online]. Available: <https://www.intechopen.com/chapters/85733undefined/chapters/85733>
- [20] Y. Zhang and P. Gao, "Hybrid photovoltaic/thermoelectric systems for round-the-clock energy harvesting," *Molecules* 2022, Vol. 27, Page 7590, vol. 27, p. 7590, 11 2022. [Online]. Available: <https://www.mdpi.com/1420-3049/27/21/7590/htmhttps://www.mdpi.com/1420-3049/27/21/7590>
- [21] M. Y. Puriza, W. Yandi, and A. Asmar, "Perbandingan efisiensi konversi energi panel surya tipe polycrystalline dengan panel surya monocrystalline berbasis arduino di kota pangkalpinang," *Jurnal Ecotipe (Electronic, Control, Telecommunication, Information, and Power Engineering)*, vol. 8, pp. 47–52, 4 2021.
- [22] K. Lu, "Comparison and evaluation of different types of solar cells," *Applied and Computational Engineering*, vol. 23, pp. 263–270, 11 2023. [Online]. Available: <https://ace.ewapub.com/article/view/5508>
- [23] N. Atikah, B. P. Jati, and D. D. Nugroho, "Analisis pengaruh suhu terhadap daya output pada panel surya monocrystalline dan polycrystalline 50 wp," *CYCLOTRON*, vol. 7, pp. 18–25, 7 2024. [Online]. Available: <https://journal.um-surabaya.ac.id/cyclotron/article/view/21822>
- [24] A. Ndiaye, C. M. Kébé, A. Charki, P. A. Ndiaye, V. Sambou, and A. Kobi, "Degradation evaluation of crystalline-silicon photovoltaic modules after a few operation years in a tropical environment," *Solar Energy*, vol. 103, pp. 70–77, 5 2014.
- [25] A. S. Al-Ezzi and M. N. M. Ansari, "Photovoltaic solar cells: A review," 8 2022.
- [26] A. Kellermann, R. A. Reiter, and A. Péres, "Calculation of the weighted average efficiency of photovoltaic systems in the brazilian state of santa catarina," *Renewable Energy and Power Quality Journal*, vol. 1, pp. 514–518, 4 2015.
- [27] S. Patidar, "Applications of thermoelectric energy: A review," *SJ Impact Factor: 6*, vol. 887, 2018. [Online]. Available: www.ijraset.com
- [28] R. Aridi, J. Faraj, S. Ali, T. Lemenand, and M. Khaled, "Thermoelectric power generators: State-of-the-art, heat recovery method, and challenges," *Electricity* 2021, Vol. 2, Pages 359-386, vol. 2, pp. 359–386, 9 2021. [Online]. Available: <https://www.mdpi.com/2673-4826/2/3/22/htmhttps://www.mdpi.com/2673-4826/2/3/22>
- [29] M. Ridwan, M. Gasulla, and F. Reverter, "Principle and applications of thermoelectric generators: A review," 4 2025.
- [30] A. Montecucco, J. Siviter, and A. R. Knox, "The effect of temperature mismatch on thermoelectric generators electrically connected in series and parallel," *Applied Energy*, vol. 123, pp. 47–54, 6 2014. [Online]. Available: <https://doi.org/10.1109/IMTC.2007.379307>
- [31] B. R. Utomo, A. Sulistyanto, T. W. B. Riyadi, and A. T. Wijayanta, "Enhanced performance of combined photovoltaic–thermoelectric generator and heat sink panels with a dual-axis tracking system," *Energies*, vol. 16, 3 2023.



UNIVERSITAS
GADJAH MADA

Pemanenan Optimal Energi Listrik pada Panel Surya Polycrystalline Menggunakan Teknologi Thermoelectric

Givan Sandyto Ginting, Ir. Bambang Sugiyantoro, M. T.; Harry Prabowo, S.T., M.T.

Universitas Gadjah Mada, 2026 | Diunduh dari <http://etd.repository.ugm.ac.id/>

[32] "Global solar atlas." [Online]. Available: <https://globalsolaratlas.info/detail?s=-7.765732,110.37164&m=site&c=-7.765732,110.37164,11>