UNIVERSITAS
GADJAH MADA
**Studi Eksperimental Integrasi Sistem Fotovoltaik dan Generator Termoelektrik dengan Penyimpan Energi
Termal Pada Proses Pengisian dan Pelepasan Panas**
Zulfan Faris Fauzi, Ir. Joko Waluyo, M.T., Ph.D., IPM., ASEAN Eng., APEC Eng.
Universitas Gadjah Mada, 2026 | Diunduh dari http://etd.repository.ugm.ac.id/

DAFTAR PUSTAKA

Andhale, Y. S., Zisopoulos, G., Nesiadis, A., Atsonios, K., Nikolopoulos, N., Stitou, D., ... Vohra, M. (2021). *Thermoelectric HVAC for light-duty vehicle applications*. *Journal of Energy Storage, 38*, 102870. https://doi.org/10.1016/j.est.2021.102870

Ariyanti, F. D., Wardana, P. A., & Rifa'i Al'Aziz, R. H. (2025). *Enabling sustainable rural power: Off-grid solar PV as a diesel alternative in Tumbang Manjul*. *IOP Conference Series: Earth and Environmental Science, 1564*(1), 012134. https://doi.org/10.1088/1755-1315/1564/1/012134

Azhar, Lathifah, M. F., Doyan, A., Susilawati, & Hudha, L. S. (2022). *Digital-based thermoelectric generator*. *Journal of Physics: Conference Series, 2165*(1), 012033. https://doi.org/10.1088/1742-6596/2165/1/012033

Bhagat, A. K., Muthusamy, E., & Goyal, R. K. (2025). *Solar photovoltaic systems enhanced by composite phase change materials and thermoelectric generators: A critical review*. *Applied Solar Energy*. https://doi.org/10.3103/S0003701X2560033X

Bizzy, I. (2022). *Modul termoelektrik: Teori & aplikasi*. Noer Fikri Offset.

Chavan, S. V., & Devaprakasam, D. (2019). *Improving the performance of solar photovoltaic thermal system using phase change material*. *Materials Today: Proceedings*. https://doi.org/10.1016/j.matpr.2020.10.406

Çengel, Y. A., & Boles, M. A. (2014). *Thermodynamics: An engineering approach* (8th ed.). McGraw-Hill Education.

Duffie, J. A., & Beckman, W. A. (2013). *Solar engineering of thermal processes* (4th ed.). Wiley.

Erdiwansyah, Gani, A., Mamat, R., Bahagia, Nizar, M., et al. (2024). *Prospects for renewable energy sources from biomass waste in Indonesia*. *Case Studies in Chemical and Environmental Engineering*, 100880. https://doi.org/10.1016/j.cscee.2024.100880

UNIVERSITAS GADJAH MADA
Studi Eksperimental Integrasi Sistem Fotovoltaik dan Generator Termoelektrik dengan Penyimpan Energi Termal Pada Proses Pengisian dan Pelepasan Panas
Zulfan Faris Fauzi, Ir. Joko Waluyo, M.T., Ph.D., IPM., ASEAN Eng., APEC Eng.
Universitas Gadjah Mada, 2026 | Diunduh dari http://etd.repository.ugm.ac.id/

Fan, Z., Zhao, Y., Liu, X., Shi, Y., & Jiang, D. (2022). *Thermal properties and reliabilities of lauric acid-based binary eutectic fatty acid as a phase change material for building energy conservation*. *ACS Omega, 7*(18), 16097–16108. https://doi.org/10.1021/acsomega.2c01420

Fauzi, H., Metselaar, H. S. C., Mahlia, T. M. I., & Silakhori, M. (2014). *Thermo-physical stability of fatty acid eutectic mixtures subjected to accelerated aging for thermal energy storage (TES) application*. *Applied Thermal Engineering, 66*(1–2), 496–505. https://doi.org/10.1016/j.applthermaleng.2014.02.014

Gil, A., Medrano, M., Martorell, L., Lázaro, A., Dolado, P., Zalba, B., & Cabeza, L. F. (2010). *State of the art on high temperature thermal energy storage for power generation. Part 1: Concepts, materials and modelling*. *Renewable and Sustainable Energy Reviews, 14*(1), 31–55. https://doi.org/10.1016/j.rser.2009.07.035

Haidar, M. F., Lestari, P. F., Utami, R. M., Nurdini, A., Nurcahyo, R., et al. (2024). *Empowering Indonesian schools: Enhancing sustainability and energy efficiency through solar solutions*. In *2024 ASU International Conference in Emerging Technologies for Sustainability and Intelligent Systems (ICETSIS 2024)*. https://doi.org/10.1109/ICETSIS61505.2024.10459707

Herez, A., Jaber, H., El Hage, H., Lemenand, T., Ramadan, M., et al. (2023). *A review on the classifications and applications of solar photovoltaic technology*. *AIMS Energy, 11*(4). https://doi.org/10.3934/ENERGY.2023051

Incropera, F. P., DeWitt, D. P., Bergman, T. L., & Lavine, A. S. (2011). *Fundamentals of heat and mass transfer* (7th ed.). Wiley.

Jahangiri, A., Majidi, S., Ansari, R., Shateri, A., & Hosseini, A. S. (2026). *Experimental investigation and comparative analysis of PCM-TEG systems for waste heat harvesting: Novel insights on PCM placement and system configuration*. *International Journal of Thermal Sciences, 210*, 110404. https://doi.org/10.1016/j.ijthermalsci.2025.110404

Jeong, H. J., Park, D., Park, S. Y., Cha, D. A., Peck, J. H., et al. (2019). *Development of thermal energy storage system for peak thermal demand of apartment using phase change material*. *Refrigeration Science and Technology*. https://doi.org/10.18462/iir.icr.2019.1891

UNIVERSITAS GADJAH MADA
Studi Eksperimental Integrasi Sistem Fotovoltaik dan Generator Termoelektrik dengan Penyimpan Energi Termal Pada Proses Pengisian dan Pelepasan Panas
Zulfan Faris Fauzi, Ir. Joko Waluyo, M.T., Ph.D., IPM., ASEAN Eng., APEC Eng.
Universitas Gadjah Mada, 2026 | Diunduh dari http://etd.repository.ugm.ac.id/

Kang, Y. K., Joung, J., Kim, M., Lee, H. H., & Jeong, J. W. (2022). *Numerical analysis of a TEG and mPCM enhancement system for BIPVs using CFD*. *Sustainability, 14*(23), 15559. https://doi.org/10.3390/su142315559

Khoukhi, M., & Maruyama, S. (2005). *Theoretical approach of a flat plate solar collector with clear and low-iron glass covers taking into account the spectral absorption and emission within glass covers layer*. *Renewable Energy*. https://doi.org/10.1016/j.renene.2004.09.014

Libra, M., & Poulek, V. (2018). *Physical principles of the photovoltaic energy conversion: Temperature dependences of PV cell parameters*. In *Handbook of Research on Renewable Energy and Electric Resources for Sustainable Rural Development* (Chap. 14). IGI Global. https://doi.org/10.4018/978-1-5225-3867-7.ch014

Li, W., Xu, Z., Yan, Y., Zhou, J., Huang, Q., et al. (2024). *Passivating contacts for crystalline silicon solar cells: An overview of the current advances and future perspectives*. *Advanced Energy Materials*. https://doi.org/10.1002/aenm.202304338

Liu, S., Li, Y., & Zhang, Y. (2015). *Review on heat transfer mechanisms and characteristics in encapsulated PCMs*. *Heat Transfer Engineering, 36*(13), 1144–1155. https://doi.org/10.1080/01457632.2015.965093

Lv, S., Yang, J., Ren, J., Zhang, B., Lai, Y., et al. (2023). *Research and numerical analysis on performance optimization of photovoltaic-thermoelectric system incorporated with phase change materials*. *Energy, 263*, 125850. https://doi.org/10.1016/j.energy.2022.125850

Melis, S., Foubert, I., Delcour, J.A. (2021). Normal-Phase HPLC-ELSD to Compare Lipid Profiles of Different Wheat Flours. https://doi.org/10.3390/foods10020428\

Moshwan, R., Shi, X.-L., Zhang, M., Yue, Y., Liu, W.-D., Li, M., Wang, L., Liang, D., & Chen, Z.-G. (2024). *Advances and challenges in hybrid photovoltaic-thermoelectric systems for renewable energy*. *Applied Energy*. https://doi.org/10.1016/j.apenergy.2024.125032

UNIVERSITAS GADJAH MADA
Studi Eksperimental Integrasi Sistem Fotovoltaik dan Generator Termoelektrik dengan Penyimpan Energi Termal Pada Proses Pengisian dan Pelepasan Panas
Zulfan Faris Fauzi, Ir. Joko Waluyo, M.T., Ph.D., IPM., ASEAN Eng., APEC Eng.
Universitas Gadjah Mada, 2026 | Diunduh dari http://etd.repository.ugm.ac.id/

Okamkpa, T., Okechukwu, J., Mbachu, D., & Mgbemene, C. (2025). *Performance analysis of a photovoltaic system with thermoelectric generator and phase change material: An experimental approach*. *Advances in Science and Technology*. https://doi.org/10.4028/p-AK81Yk

Podara, C. V., Kartsonakis, I. A., & Charitidis, C. A. (2021). *Towards phase change materials for thermal energy storage: Classification, improvements and applications in the building sector*. *Applied Sciences, 11*(4), 1490. https://doi.org/10.3390/app11041490

Pournami, M. C., Sreenath, B., & Zachariah, R. (2017). *A comprehensive review on the recent advancements in PV panel cooling techniques using phase changing materials*. In *Proceedings of the 2017 IEEE International Conference on Intelligent Techniques in Control, Optimization and Signal Processing (INCOS 2017)*. https://doi.org/10.1109/ITCOSP.2017.8303153

Prasetyo, R. B., Rahman, H., Alfi, I., & Sakti, F. P. (2022). *Artificial neural network performance analysis for solar radiation prediction: Case study at Baron Techno Park. IOP Conference Series: Earth and Environmental Science, 997*(1), 012019. https://doi.org/10.1088/1755-1315/997/1/012019

Regin, A. F., Solanki, S. C., & Saini, J. S. (2008). *Heat transfer characteristics of thermal energy storage system using PCM capsules: A review*. *Renewable and Sustainable Energy Reviews, 12*(9), 2438–2458. https://doi.org/10.1016/j.rser.2007.06.009

Sarı, A. (2005). *Eutectic mixtures of some fatty acids for low temperature solar heating applications: Thermal properties and thermal reliability*. *Applied Thermal Engineering, 25*(14–15), 2100–2107. https://doi.org/10.1016/j.applthermaleng.2005.01.010

UNIVERSITAS GADJAH MADA
Studi Eksperimental Integrasi Sistem Fotovoltaik dan Generator Termoelektrik dengan Penyimpan Energi Termal Pada Proses Pengisian dan Pelepasan Panas
Zulfan Faris Fauzi, Ir. Joko Waluyo, M.T., Ph.D., IPM., ASEAN Eng., APEC Eng.
Universitas Gadjah Mada, 2026 | Diunduh dari http://etd.repository.ugm.ac.id/

Sari, T. K., Novita, D., Irianto, C. G., Abduh, S., & Widjaja, M. (2023). *Greenhouse gas emission reduction potential for power generation in Indonesia using boiler advanced technology application*. *AIP Conference Proceedings*. https://doi.org/10.1063/5.0120276

Sellami, A., Elotmani, R., Kandoussi, K., Eljouad, M., Hajjaji, A., et al. (2017). *Temperature regulation of PV solar cell under PCM cooling system*. In *Proceedings of the 2016 International Renewable and Sustainable Energy Conference (IRSEC 2016)*. https://doi.org/10.1109/IRSEC.2016.7983881

Şen, Z. (2008). *Solar energy fundamentals and modeling techniques: Atmosphere, environment, climate change and renewable energy*. Springer. https://doi.org/10.1007/978-1-84800-134-3

Setyanto, I. D., Nadjib, M., Hadji, T., & Santoso, A. (2014). *Perancangan alat penukar kalor untuk PCM di dalam tangki pemanas air tenaga surya thermosyphon kapasitas 60 liter*.

Shahid, M. K., Batool, A., Kashif, A., Nawaz, M. H., Aslam, M., et al. (2021). *Biofuels and biorefineries: Development, application and future perspectives emphasizing the environmental and economic aspects*. *Journal of Environmental Management*. https://doi.org/10.1016/j.jenvman.2021.113268

Sharma, S. D., & Sagara, K. (2005). *Latent heat storage materials and systems: A review*. *International Journal of Green Energy, 2*(1), 1–56. https://doi.org/10.1081/GE-200051299

Tripathi, V., Kumar, P., Singh, N., Kumar, R., & Karmakar, R. (2024). *The interplay of fossil fuels and natural disasters*. In *Climate crisis and sustainable solutions: Strategies for adaptation, mitigation and sustainable development* (Chap. 6). Springer. https://doi.org/10.1007/978-981-97-7110-3_6

UNIVERSITAS GADJAH MADA
Studi Eksperimental Integrasi Sistem Fotovoltaik dan Generator Termoelektrik dengan Penyimpan Energi Termal Pada Proses Pengisian dan Pelepasan Panas
Zulfan Faris Fauzi, Ir. Joko Waluyo, M.T., Ph.D., IPM., ASEAN Eng., APEC Eng.
Universitas Gadjah Mada, 2026 | Diunduh dari http://etd.repository.ugm.ac.id/

Tunçbilek, K., Sarı, A., Tarhan, S., Ergüneş, G., & Kaygusuz, K. (2005). *Lauric and palmitic acids eutectic mixture as latent heat storage material for low temperature heating applications*. *Energy, 30*(5), 677–692. https://doi.org/10.1016/j.energy.2004.05.017

Winardi, B., Sinuraya, E. W., Nugroho, A., & Dolphina, E. (2022). *Design of hybrid solar power plant for household electricity loads 1300 VA*. *International Journal of Basic and Applied Science, 10*(4). https://doi.org/10.35335/ijobas.v10i4.63

Yin, E., Li, Q., Li, D., & Xuan, Y. (2019). *Experimental investigation on effects of thermal resistances on a photovoltaic-thermoelectric system integrated with phase change materials*. *Energy Conversion and Management, 183*, 80–91. https://doi.org/10.1016/j.enconman.2018.12.023

Yu, X., Wang, J., Wu, Z., Dong, L., Li, Y., et al. (2025). *Research on heat transfer enhancement of solar-driven phase change materials-thermoelectric coupling systems*. *Solar Energy*. https://doi.org/10.1016/j.solener.2024.113233

Zhu, X., Yu, Y., & Li, F. (2019). *A review on thermoelectric energy harvesting from asphalt pavement: Configuration, performance and future*. *Construction and Building Materials, 228*, 116818. https://doi.org/10.1016/j.conbuildmat.2019.116818