

DAFTAR PUSTAKA

- Adewale, R. A., Berrouk, A. S., & Dara, S. (2015). A process simulation study of hydrogen and sulfur production from hydrogen sulfide using the Fe-Cl hybrid process. *Journal of the Taiwan Institute of Chemical Engineers*, 54, 20–27. <https://doi.org/10.1016/j.jtice.2015.03.018>
- Ait Lahoussine Ouali, H., Khouya, A., & Alami Merrouni, A. (2022). Numerical investigation of high concentrated photovoltaic (HCPV) plants in MENA region: Techno-Economic assessment, parametric study and sensitivity analysis. *Sustainable Energy Technologies and Assessments*, 53. <https://doi.org/10.1016/j.seta.2022.102510>
- Alirahmi, S. M., Assareh, E., Pourghassab, N. N., Delpisheh, M., Barelli, L., & Baldinelli, A. (2022). Green hydrogen & electricity production via geothermal-driven multi-generation system: Thermodynamic modeling and optimization. *Fuel*, 308. <https://doi.org/10.1016/j.fuel.2021.122049>
- AlZahrani, A. A., & Dincer, I. (2017). Thermodynamic and electrochemical analyses of a solid oxide electrolyzer for hydrogen production. *International Journal of Hydrogen Energy*, 42(33), 21404–21413. <https://doi.org/10.1016/j.ijhydene.2017.03.186>
- Aziz, M. (2021). Liquid hydrogen: A review on liquefaction, storage, transportation, and safety. In *Energies* (Vol. 14, Issue 18). MDPI. <https://doi.org/10.3390/en14185917>
- Badan Pusat Statistik. (2023). *Badan Pusat Statistik*.
- Bakos, G. C., & Soursos, M. (2002). Techno-economic assessment of a stand-alone PV/hybrid installation for low-cost electrification of a tourist resort in Greece. *Applied Energy*, 73, 183–193. www.elsevier.com/locate/apenergy
- Bassani, A., Previtali, D., Pirola, C., Bozzano, G., Nadezhdin, I. S., Goryunov, A. G., & Manenti, F. (2018). H₂S in geothermal power plants: From waste to additional resource for energy and environment. *Chemical Engineering Transactions*, 70, 127–132. <https://doi.org/10.3303/CET1870022>
- Burdack, A., Duarte-Herrera, L., López-Jiménez, G., Polklas, T., & Vasco-Echeverri, O. (2023). Techno-economic calculation of green hydrogen production and export from Colombia. *International Journal of Hydrogen Energy*, 48(5), 1685–1700. <https://doi.org/10.1016/j.ijhydene.2022.10.064>
- Cao, Y., Dhahad, H. A., Togun, H., Hussen, H. M., Anqi, A. E., Farouk, N., & Issakhov, A. (2022). Exergy, exergoeconomic and multi-objective optimization of a clean hydrogen and electricity production using geothermal-driven energy

- systems. *International Journal of Hydrogen Energy*, 47(62), 25964–25983. <https://doi.org/10.1016/j.ijhydene.2021.08.120>
- Cardella, U., Decker, L., & Klein, H. (2017). Roadmap to economically viable hydrogen liquefaction. *International Journal of Hydrogen Energy*, 42(19), 13329–13338. <https://doi.org/10.1016/j.ijhydene.2017.01.068>
- Cengel, Y. A., & Boles, M. A. (2006). *Thermodynamics: an Engineering Approach* (Fifth Edition). McGraw-Hill.
- Chan, Y. H., Lock, S. S. M., Wong, M. K., Yiin, C. L., Loy, A. C. M., Cheah, K. W., Chai, S. Y. W., Li, C., How, B. S., Chin, B. L. F., Chan, Z. P., & Lam, S. S. (2022). A state-of-the-art review on capture and separation of hazardous hydrogen sulfide (H₂S): Recent advances, challenges and outlook. In *Environmental Pollution* (Vol. 314). Elsevier Ltd. <https://doi.org/10.1016/j.envpol.2022.120219>
- Chan, Y. H., Loy, A. C. M., Cheah, K. W., Chai, S. Y. W., Ngu, L. H., How, B. S., Li, C., Lock, S. S. M., Wong, M. K., Yiin, C. L., Chin, B. L. F., Chan, Z. P., & Lam, S. S. (2023). Hydrogen sulfide (H₂S) conversion to hydrogen (H₂) and value-added chemicals: Progress, challenges and outlook. In *Chemical Engineering Journal* (Vol. 458). Elsevier B.V. <https://doi.org/10.1016/j.cej.2023.141398>
- Chen, X., Fang, Y., Liu, Q., He, L., Zhao, Y., Huang, T., Wan, Z., & Wang, X. (2022). Temperature and voltage dynamic control of PEMFC Stack using MPC method. *Energy Reports*, 8, 798–808. <https://doi.org/10.1016/j.egyr.2021.11.271>
- Chmielniak, T., & Remiorz, L. (2020). Entropy analysis of hydrogen production in electrolytic processes. *Energy*, 211. <https://doi.org/10.1016/j.energy.2020.118468>
- Christensen, A., & Co, A. (2020). *Assessment of Hydrogen Production Costs from Electrolysis: United States and Europe*.
- De Crisci, A. G., Moniri, A., & Xu, Y. (2019). Hydrogen from hydrogen sulfide: towards a more sustainable hydrogen economy. In *International Journal of Hydrogen Energy* (Vol. 44, Issue 3, pp. 1299–1327). Elsevier Ltd. <https://doi.org/10.1016/j.ijhydene.2018.10.035>
- Dincer, I., & Abu-Rayash, A. (2020). Sustainability modeling. In *Energy Sustainability* (pp. 119–164). Elsevier. <https://doi.org/10.1016/B978-0-12-819556-7.00006-1>
- Direktorat Jenderal Energi baru dan Terbarukan. (2020). *Pedoman Umum Penanganan dan Penyimpanan Biodiesel dan B30*.
- Finster, M., Clark, C., Schroeder, J., & Martino, L. (2015). Geothermal produced fluids: Characteristics, treatment technologies, and management options. In *Renewable and Sustainable Energy Reviews* (Vol. 50, pp. 952–966). Elsevier Ltd. <https://doi.org/10.1016/j.rser.2015.05.059>

- Fridriksson, T., Merino, A. M., Orucu, A. Y., & Audinet, P. (2017, February 13). Greenhouse Gas Emissions from Geothermal Power Production. *42nd Workshop on Geothermal Reservoir Engineering*.
- Gaskell, D. R. (2008). *Introduction to the Thermodynamics of Materials* (Fifth Edition). Taylor & Francis.
- Government of Republic Indonesia. (2021). *Updated Nationally Determined Contribution of Republic Indonesia*.
- Undang - Undang Republik Indonesia Nomor 16 Tahun 2016 tentang Pengesahan Paris Agreement To The United Nations Framework Convention On Climate Change (Persetujuan Paris Atas Konvensi Kerangka Kerja Perserikatan Bangsa-Bangsa mengenai Perubahan Iklim), (2016).
- Gundersen, T. (2011). *The Concept of Exergy and Energy Quality*.
- Hand, T. W. (2008). *Hydrogen Production Using Geothermal Energy*.
<https://digitalcommons.usu.edu/etd>
- <https://exergy-calculator.ricklupton.name/browser/substance/>. (2023, March 23).
- <https://webbook.nist.gov/chemistry/>. (2023).
- Huang, H., Shang, J., Yu, Y., & Chung, K. H. (2019). Recovery of hydrogen from hydrogen sulfide by indirect electrolysis process. *International Journal of Hydrogen Energy*, 44(11), 5108–5113.
<https://doi.org/10.1016/j.ijhydene.2018.11.010>
- Ibrahim, T. K., Basrawi, F., Awad, O. I., Abdullah, A. N., Najafi, G., Mamat, R., & Hagos, F. Y. (2017). Thermal performance of gas turbine power plant based on exergy analysis. *Applied Thermal Engineering*, 115, 977–985.
<https://doi.org/10.1016/j.applthermaleng.2017.01.032>
- IESR. (2022). *Indonesia Energy Transition Outlook 2023*.
- IRENA. (2022). *Indonesia Energy Transition Outlook 2022*. www.irena.org
- Jang, D., Kim, J., Kim, D., Han, W. B., & Kang, S. (2022). Techno-economic analysis and Monte Carlo simulation of green hydrogen production technology through various water electrolysis technologies. *Energy Conversion and Management*, 258. <https://doi.org/10.1016/j.enconman.2022.115499>
- Jang, D., Kim, K., Kim, K. H., & Kang, S. (2022). Techno-economic analysis and Monte Carlo simulation for green hydrogen production using offshore wind power plant. *Energy Conversion and Management*, 263. <https://doi.org/10.1016/j.enconman.2022.115695>
- Jangam, K., Chen, Y. Y., Qin, L., & Fan, L. S. (2021). Perspectives on reactive separation and removal of hydrogen sulfide. *Chemical Engineering Science: X*, 11. <https://doi.org/10.1016/j.cesx.2021.100105>

- Kanoglu, M., Bolatturk, A., & Yilmaz, C. (2010). Thermodynamic analysis of models used in hydrogen production by geothermal energy. *International Journal of Hydrogen Energy*, 35(16), 8783–8791. <https://doi.org/10.1016/j.ijhydene.2010.05.128>
- Kanoglu, M., Dincer, I., & Cengel, Y. A. (2009). Exergy for better environment and sustainability. *Environment, Development and Sustainability*, 11(5), 971–988. <https://doi.org/10.1007/s10668-008-9162-3>
- Karakatsanis, G. (2016). Exergy and the Economic Process. *Energy Procedia*, 97, 51–58. <https://doi.org/10.1016/j.egypro.2016.10.018>
- Karapekmez, A., & Dincer, I. (2018). Modelling of hydrogen production from hydrogen sulfide in geothermal power plants. *International Journal of Hydrogen Energy*, 43(23), 10569–10579. <https://doi.org/10.1016/j.ijhydene.2018.02.020>
- Karayel, G. K., Javani, N., & Dincer, I. (2022). Effective use of geothermal energy for hydrogen production: A comprehensive application. *Energy*, 249. <https://doi.org/10.1016/j.energy.2022.123597>
- Kementerian Energi dan Sumber Daya Mineral Republik Indonesia. (2022). *Handbook of Energy & Economic Statistics of Indonesia*.
- Kumar S, Himanshu SK, & Gupta KK. (2012). Effect of Global Warming on Mankind-A Review. In *Int. Res. J. Environment Sci. International Science Congress Association* (Vol. 1, Issue 4). www.isca.in
- Lee, B., Lim, D., Lee, H., Byun, M., & Lim, H. (2021). Techno-economic analysis of H₂ energy storage system based on renewable energy certificate. *Renewable Energy*, 167, 91–98. <https://doi.org/10.1016/j.renene.2020.11.049>
- Li, W., Garcia, S., & Wang, S. (2022). Thermoelectric ionogel for low-grade heat harvesting. In S. Wang (Ed.), *Low-grade thermal energy harvesting: advances in materials, devices, and emerging applications* (pp. 63–82). Matthew Deans.
- Lior, N., & Zhang, N. (2007). Energy, exergy, and Second Law performance criteria. *Energy*, 32(4), 281–296. <https://doi.org/10.1016/j.energy.2006.01.019>
- Mahmoud, M., Ramadan, M., Naher, S., Pullen, K., Ali Abdelkareem, M., & Olabi, A. G. (2021a). A review of geothermal energy-driven hydrogen production systems. *Thermal Science and Engineering Progress*, 22. <https://doi.org/10.1016/j.tsep.2021.100854>
- Mahmoud, M., Ramadan, M., Naher, S., Pullen, K., Ali Abdelkareem, M., & Olabi, A. G. (2021b). A review of geothermal energy-driven hydrogen production systems. *Thermal Science and Engineering Progress*, 22. <https://doi.org/10.1016/j.tsep.2021.100854>

- Martins, A. H., Rouboa, A., & Monteiro, E. (2023). On the green hydrogen production through gasification processes: A techno-economic approach. *Journal of Cleaner Production*, 383. <https://doi.org/10.1016/j.jclepro.2022.135476>
- Mehta, P. S., & Anand, K. (2009). Estimation of a Lower Heating Value of Vegetable Oil and Biodiesel Fuel. *Energy & Fuels*, 23(8), 3893–3898. <https://doi.org/10.1021/ef900196r>
- Mizuta, S., Kondo, W., Fujii, K., Iida, H., Isshiki, S., Noguchi, H., Kikuchi, T., Sue, H., & Sakai, K. (1991). Hydrogen production from hydrogen sulfide by the iron-chlorine hybrid process. *Industrial & Engineering Chemistry Research*, 30(7), 1601–1608. <https://doi.org/10.1021/ie00055a028>
- Mostafaeipour, A., Hosseini Dehshiri, S. J., & Hosseini Dehshiri, S. S. (2020). Ranking locations for producing hydrogen using geothermal energy in Afghanistan. *International Journal of Hydrogen Energy*, 45(32), 15924–15940. <https://doi.org/10.1016/j.ijhydene.2020.04.079>
- Nakicenovic, N., Paul, +, Gilli, V., & Kurz, R. (1996). *Regional and Global Exergy and Energy Efficiencies* (Vol. 21, Issue 3).
- OSHA (Occupational Safety & Health Administration). (n.d.). *Hydrogen Sulfide*. <Https://Www.Osha.Gov/Hydrogen-Sulfide/Hazards>.
- Ouali, S., Chader, S., Belhamel, M., & Benziada, M. (2011). The exploitation of hydrogen sulfide for hydrogen production in geothermal areas. *International Journal of Hydrogen Energy*, 36(6), 4103–4109. <https://doi.org/10.1016/j.ijhydene.2010.07.121>
- Pemerintah Republik Indonesia. (2014). *Peraturan Pemerintah Nomor 79 Tahun 2014 tentang Kebijakan Energi Nasional*. www.bphn.go.id
- Petrov, K., Baykara, S. Z., Ebrasu, D., Gulin, M., & Veziroglu, A. (2011). An assessment of electrolytic hydrogen production from H₂S in Black Sea waters. *International Journal of Hydrogen Energy*, 36(15), 8936–8942. <https://doi.org/10.1016/j.ijhydene.2011.04.022>
- PT PLN. (2021). *Rencana Usaha Penyediaan Tenaga Listrik (RUPTL) 2021-2030*.
- Ramazankhani, M. E., Mostafaeipour, A., Hosseininasab, H., & Fakhrzad, M. B. (2016). Feasibility of geothermal power assisted hydrogen production in Iran. *International Journal of Hydrogen Energy*, 41(41), 18351–18369. <https://doi.org/10.1016/j.ijhydene.2016.08.150>
- Rashidi, S., Karimi, N., Sundén, B., Kim, K. C., Olabi, A. G., & Mahian, O. (2022). Progress and challenges on the thermal management of electrochemical energy conversion and storage technologies: Fuel cells, electrolyzers, and supercapacitors. *Progress in Energy and Combustion Science*, 88, 100966. <https://doi.org/10.1016/j.pecs.2021.100966>

- Rosen, M. A. (2002). Clarifying thermodynamic efficiencies and losses via exergy \star . In *an International Journal* (Vol. 2). www.exergyonline.com
- Rosen, M. A., Dincer, I., & Kanoglu, M. (2008). Role of exergy in increasing efficiency and sustainability and reducing environmental impact. *Energy Policy*, 36(1), 128–137. <https://doi.org/10.1016/j.enpol.2007.09.006>
- Sekretariat Jenderal Dewan Energi Nasional. (2022). *Outlook Energi Indonesia 2022*.
- Shah, M., Prajapati, M., Yadav, K., & Sircar, A. (2022). A review of the geothermal integrated hydrogen production system as a sustainable way of solving potential fuel shortages. *Journal of Cleaner Production*, 135001. <https://doi.org/10.1016/j.jclepro.2022.135001>
- Shao, Y., Xiao, H., Chen, B., Huang, S., & Qin, F. G. F. (2018). Comparison and analysis of thermal efficiency and exergy efficiency in energy systems by case study. *Energy Procedia*, 153, 161–168. <https://doi.org/10.1016/j.egypro.2018.10.081>
- Simatupang, C., Pratama, R., Setiawan, J., Siahaan, J., Pasaribu, H., Pasikki, R., & Indra, T. (2022). The design of H₂S abatement for well testing at Sorik Marapi Geothermal Field. In *PROCEEDINGS*. <https://www.osha.gov/hydrogen-sulfide/hazards>
- Somma, R., Granieri, D., Troise, C., Terranova, C., De Natale, G., & Pedone, M. (2017). Modelling of hydrogen sulfide dispersion from the geothermal power plants of Tuscany (Italy). *Science of the Total Environment*, 583, 408–420. <https://doi.org/10.1016/j.scitotenv.2017.01.084>
- Stefanakos, E., Krakow, B., & Mbah, J. (2007). *Hydrogen Production from Hydrogen Sulfide in IGCC Power Plants Final Scientific /Technical Report*.
- Tekkanat, B., Yuksel, Y. E., & Ozturk, M. (2022). The evaluation of hydrogen production via a geothermal-based multigeneration system with 3E analysis and multi-objective optimization. *International Journal of Hydrogen Energy*. <https://doi.org/10.1016/j.ijhydene.2022.11.185>
- Tsatsaronis, G., & Cziesla, F. (2003). Thermoconomics. In *Encyclopedia of Physical Science and Technology* (pp. 659–680). Elsevier. <https://doi.org/10.1016/B0-12-227410-5/00944-3>
- United Nations. (2015). *Paris Agreement*.
- Vala Matthíasdóttir, K. (2006a). *Removal of Hydrogen Sulfide from Non-Condensable Geothermal Gas at Nesjavellir Power Plant*.
- Vala Matthíasdóttir, K. (2006b). *Removal of Hydrogen Sulfide from Non-Condensable Geothermal Gas at Nesjavellir Power Plant*.

- Wijayasekera, S. C., Hewage, K., Siddiqui, O., Hettiaratchi, P., & Sadiq, R. (2022). Waste-to-hydrogen technologies: A critical review of techno-economic and socio-environmental sustainability. In *International Journal of Hydrogen Energy* (Vol. 47, Issue 9, pp. 5842–5870). Elsevier Ltd. <https://doi.org/10.1016/j.ijhydene.2021.11.226>
- Yilmaz, C., Kanoglu, M., Bolatturk, A., & Gadalla, M. (2012). Economics of hydrogen production and liquefaction by geothermal energy. *International Journal of Hydrogen Energy*, 37(2), 2058–2069. <https://doi.org/10.1016/j.ijhydene.2011.06.037>
- Yilmaz, C., Koyuncu, I., Alcin, M., & Tuna, M. (2019). Artificial Neural Networks based thermodynamic and economic analysis of a hydrogen production system assisted by geothermal energy on Field Programmable Gate Array. *International Journal of Hydrogen Energy*, 44(33), 17443–17459. <https://doi.org/10.1016/j.ijhydene.2019.05.049>
- Yuksel, Y. E., & Ozturk, M. (2017). Thermodynamic and thermoeconomic analyses of a geothermal energy based integrated system for hydrogen production. *International Journal of Hydrogen Energy*, 42(4), 2530–2546. <https://doi.org/10.1016/j.ijhydene.2016.04.172>