

References

- [1] World electricity consumption 2021 | Statista n.d. <https://www.statista.com/statistics/280704/world-power-consumption/> (accessed February 15, 2023).
- [2] Dashboard - Central Electricity Authority n.d. <https://cea.nic.in/dashboard/?lang=en> (accessed August 28, 2023).
- [3] Billewar SR, Londhe G, Mane PS. World Energy Demand. *Integrated Green Energy Solutions* 2023;275–316. <https://doi.org/10.1002/9781394193738.CH36>.
- [4] Elwardany M, Nassib AM, Mohamed HA. Advancing sustainable thermal power generation: insights from recent energy and exergy studies. *Process Safety and Environmental Protection* 2024;183:617–44. <https://doi.org/10.1016/J.PSEP.2024.01.039>.
- [5] Obobisa ES, Ahakwa I. Stimulating the adoption of green technology innovation, clean energy resources, green finance, and environmental taxes: The way to achieve net zero CO2 emissions in Europe? *Technol Forecast Soc Change* 2024;205:123489. <https://doi.org/10.1016/J.TECHFORE.2024.123489>.
- [6] Kruger H, Meier H-J, Offermann D, Langnickel U. *EFFICIENCY IN Electricity Generation* 2003.
- [7] Logan J, Marcy C, Mccall J, Flores-Espino F, Bloom A, Aabakken J, et al. *Electricity Generation Baseline Report* 2015.
- [8] Application of hydrogen combustion for electrical and motive power generation. *Science and Engineering of Hydrogen-Based Energy Technologies: Hydrogen Production and Practical Applications in Energy Generation* 2018:259–78. <https://doi.org/10.1016/B978-0-12-814251-6.00005-8>.
- [9] Patil VR, Biradar VI, Shreyas R, Garg P, Orosz MS, Thirumalai NC. Techno-economic comparison of solar organic Rankine cycle (ORC) and photovoltaic (PV) systems with energy storage. *Renew Energy* 2017;113:1250–60. <https://doi.org/10.1016/J.RENENE.2017.06.107>.
- [10] Roy JP, Mishra MK, Misra A. Parametric optimization and performance analysis of a waste heat recovery system using Organic Rankine Cycle. *Energy* 2010;35:5049–62. <https://doi.org/10.1016/J.ENERGY.2010.08.013>.

- [11] Dincer I, Bicer Y. Integration of conventional energy systems for multigeneration. *Integrated Energy Systems for Multigeneration* 2020:143–221. <https://doi.org/10.1016/B978-0-12-809943-8.00004-2>.
- [12] Varma GVP, Srinivas T. Power generation from low temperature heat recovery. *Renewable and Sustainable Energy Reviews* 2017;75:402–14. <https://doi.org/10.1016/J.RSER.2016.11.005>.
- [13] Ho T, Mao SS, Greif R. Comparison of the Organic Flash Cycle (OFC) to other advanced vapor cycles for intermediate and high temperature waste heat reclamation and solar thermal energy. *Energy* 2012;42:213–23. <https://doi.org/10.1016/J.ENERGY.2012.03.067>.
- [14] Lee HY, Park SH, Kim KH. Comparative analysis of thermodynamic performance and optimization of organic flash cycle (OFC) and organic Rankine cycle (ORC). *Appl Therm Eng* 2016;100:680–90. <https://doi.org/10.1016/J.APPLTHERMALENG.2016.01.158>.
- [15] Bronicki LY. History of Organic Rankine Cycle systems. *Organic Rankine Cycle (ORC) Power Systems: Technologies and Applications* 2017:25–66. <https://doi.org/10.1016/B978-0-08-100510-1.00002-8>.
- [16] Lai KY, Lee YT, Chen MR, Liu YH. Comparison of the trilateral flash cycle and Rankine cycle with organic fluid using the pinch point temperature. *Entropy* 2019;21. <https://doi.org/10.3390/e21121197>.
- [17] Fischer J. Comparison of trilateral cycles and organic Rankine cycles. *Energy* 2011;36:6208–19. <https://doi.org/10.1016/J.ENERGY.2011.07.041>.
- [18] Iqbal MA, Rana S, Ahmadi M, Date A, Akbarzadeh A. Trilateral Flash Cycle (TFC): a promising thermodynamic cycle for low grade heat to power generation. *Energy Procedia* 2019;160:208–14. <https://doi.org/10.1016/J.EGYPRO.2019.02.138>.
- [19] Chen Y, Lundqvist P. The Co₂ transcritical power cycle for low grade heat recovery—discussion on temperature profiles in system heat exchangers. *American Society of Mechanical Engineers, Power Division (Publication) POWER*, vol. 1, 2011, p. 385–92. <https://doi.org/10.1115/POWER2011-55075>.
- [20] Cayer E, Galanis N, Desilets M, Nesreddine H, Roy P. Analysis of a carbon dioxide transcritical power cycle using a low temperature source. *Appl Energy* 2009;86:1055–63. <https://doi.org/10.1016/J.APENERGY.2008.09.018>.

- [21] Li S, Dai Y. Thermo-economic comparison of Kalina and CO₂ transcritical power cycle for low temperature geothermal sources in China. *Appl Therm Eng* 2014;70:139–52. <https://doi.org/10.1016/J.APPLTHERMALENG.2014.04.067>.
- [22] Ho T, Mao SS, Greif R. Increased power production through enhancements to the Organic Flash Cycle (OFC). *Energy* 2012;45:686–95. <https://doi.org/10.1016/J.ENERGY.2012.07.023>.
- [23] Mondal S, De S. Power by waste heat recovery from low temperature industrial flue gas by Organic Flash Cycle (OFC) and transcritical-CO₂ power cycle: A comparative study through combined thermodynamic and economic analysis. *Energy* 2017;121:832–40. <https://doi.org/10.1016/J.ENERGY.2016.12.126>.
- [24] Meng F, Wang E, Zhang B, Zhang F, Zhao C. Thermo-economic analysis of transcritical CO₂ power cycle and comparison with Kalina cycle and ORC for a low-temperature heat source. *Energy Convers Manag* 2019;195:1295–308. <https://doi.org/10.1016/J.ENCONMAN.2019.05.091>.
- [25] Li Z, Lu Y, Huang Y, Qian G, Chen F, Yu X, et al. Comparison study of Trilateral Rankine Cycle, Organic Flash Cycle and basic Organic Rankine Cycle for low grade heat recovery. *Energy Procedia* 2017;142:1441–7. <https://doi.org/10.1016/j.egypro.2017.12.532>.
- [26] Nair V. HFO refrigerants: A review of present status and future prospects. *International Journal of Refrigeration* 2021;122:156–70. <https://doi.org/10.1016/J.IJREFRIG.2020.10.039>.
- [27] Li M, Wang J, He W, Wang B, Ma S, Dai Y. Experimental Evaluation of the Regenerative and Basic Organic Rankine Cycles for Low-Grade Heat Source Utilization. *Journal of Energy Engineering* 2013;139:190–7. [https://doi.org/10.1061/\(ASCE\)EY.1943-7897.0000120/ASSET/43712150-3230-4FBF-A84F-1BAA09872C22/ASSETS/IMAGES/LARGE/FIGURE12.JPG](https://doi.org/10.1061/(ASCE)EY.1943-7897.0000120/ASSET/43712150-3230-4FBF-A84F-1BAA09872C22/ASSETS/IMAGES/LARGE/FIGURE12.JPG).
- [28] Chang JC, Chang CW, Hung TC, Lin JR, Huang KC. Experimental study and CFD approach for scroll type expander used in low-temperature organic Rankine cycle. *Appl Therm Eng* 2014;73:1444–52. <https://doi.org/10.1016/J.APPLTHERMALENG.2014.08.050>.
- [29] Zhang YQ, Wu YT, Xia GD, Ma CF, Ji WN, Liu SW, et al. Development and experimental study on organic Rankine cycle system with single-screw expander for waste heat recovery from exhaust of diesel engine. *Energy* 2014;77:499–508. <https://doi.org/10.1016/J.ENERGY.2014.09.034>.

- [30] Miao Z, Xu J, Yang X, Zou J. Operation and performance of a low temperature organic Rankine cycle. *Appl Therm Eng* 2015;75:1065–75. <https://doi.org/10.1016/J.APPLTHERMALENG.2014.10.065>.
- [31] Shao L, Ma X, Wei X, Hou Z, Meng X. Design and experimental study of a small-sized organic Rankine cycle system under various cooling conditions. *Energy* 2017;130:236–45. <https://doi.org/10.1016/J.ENERGY.2017.04.092>.
- [32] Pang KC, Chen SC, Hung TC, Feng YQ, Yang SC, Wong KW, et al. Experimental study on organic Rankine cycle utilizing R245fa, R123 and their mixtures to investigate the maximum power generation from low-grade heat. *Energy* 2017;133:636–51. <https://doi.org/10.1016/J.ENERGY.2017.05.128>.
- [33] Ali Tarique M, Dincer I, Zamfirescu C. Experimental investigation of a scroll expander for an organic Rankine cycle. *Int J Energy Res* 2014;38:1825–34. <https://doi.org/10.1002/ER.3189>.
- [34] Zheng N, Zhao L, Wang XD, Tan YT. Experimental verification of a rolling-piston expander that applied for low-temperature Organic Rankine Cycle. *Appl Energy* 2013;112:1265–74. <https://doi.org/10.1016/J.APENERGY.2012.12.030>.
- [35] Yamada N, Watanabe M, Hoshi A. Experiment on pumpless Rankine-type cycle with scroll expander. *Energy* 2013;49:137–45. <https://doi.org/10.1016/J.ENERGY.2012.10.027>.
- [36] Gao P, Jiang L, Wang LW, Wang RZ, Song FP. Simulation and experiments on an ORC system with different scroll expanders based on energy and exergy analysis. *Appl Therm Eng* 2015;75:880–8. <https://doi.org/10.1016/J.APPLTHERMALENG.2014.10.044>.
- [37] Li L, Ge YT, Luo X, Tassou SA. Experimental investigations into power generation with low grade waste heat and R245fa Organic Rankine Cycles (ORCs). *Appl Therm Eng* 2017;115:815–24. <https://doi.org/10.1016/J.APPLTHERMALENG.2017.01.024>.
- [38] Farrokhi M, Noie SH, Akbarzadeh AA. Preliminary experimental investigation of a natural gas-fired ORC-based micro-CHP system for residential buildings. *Appl Therm Eng* 2014;69:221–9. <https://doi.org/10.1016/J.APPLTHERMALENG.2013.11.060>.
- [39] Zhao L, Bao J. Thermodynamic analysis of organic Rankine cycle using zeotropic mixtures. *Appl Energy* 2014;130:748–56. <https://doi.org/10.1016/j.apenergy.2014.03.067>.
- [40] Wang Z, Zhao Y, Xia X, Pan H, Zhang S, Liu Z. Experimental evaluation of organic Rankine cycle using zeotropic mixture under different operation conditions. *Energy* 2023;264:126188. <https://doi.org/10.1016/J.ENERGY.2022.126188>.

- [41] Zhu Y, Li W, Wang Y, Li H, Li S. Thermodynamic analysis and parametric optimization of ejector heat pump integrated with organic Rankine cycle combined cooling, heating and power system using zeotropic mixtures. *Appl Therm Eng* 2021;194. <https://doi.org/10.1016/j.applthermaleng.2021.117097>.
- [42] Safarian S, Aramoun F. Energy and exergy assessments of modified Organic Rankine Cycles (ORCs). *Energy Reports* 2015;1:1–7. <https://doi.org/10.1016/J.EGYR.2014.10.003>.
- [43] Zeynali A, Akbari A, Khalilian M. Investigation of the performance of modified organic Rankine cycles (ORCs) and modified trilateral flash cycles (TFCs) assisted by a solar pond. *Solar Energy* 2019;182:361–81. <https://doi.org/10.1016/J.SOLENER.2019.03.001>.
- [44] Abam FI, Ekwe EB, Effiom SO, Ndukwu MC. A comparative performance analysis and thermo-sustainability indicators of modified low-heat organic Rankine cycles (ORCs): An exergy-based procedure. *Energy Reports* 2018;4:110–8. <https://doi.org/10.1016/J.EGYR.2017.08.003>.
- [45] Kajurek J, Rusowicz A, Grzebielec A, Bujalski W, Futyma K, Rudowicz Z. Selection of refrigerants for a modified organic Rankine cycle. *Energy* 2019;168:1–8. <https://doi.org/10.1016/J.ENERGY.2018.11.024>.
- [46] Kheiri R, Ghaebi H, Ebadollahi M, Rostamzadeh H. Thermodynamic modeling and performance analysis of four new integrated organic Rankine cycles (A comparative study). *Appl Therm Eng* 2017;122:103–17. <https://doi.org/10.1016/J.APPLTHERMALENG.2017.04.150>.
- [47] Chen J, Huang Y, Niu Z, Chen Y, Luo X. Performance analysis of a novel organic Rankine cycle with a vapor-liquid ejector. *Energy Convers Manag* 2018;157:382–95. <https://doi.org/10.1016/J.ENCONMAN.2017.11.038>.
- [48] Haghparast P, Sorin M V., Richard MA, Nesreddine H. Analysis and design optimization of an ejector integrated into an organic Rankine cycle. *Appl Therm Eng* 2019;159:113979. <https://doi.org/10.1016/J.APPLTHERMALENG.2019.113979>.
- [49] Oyekale J, Petrollese M, Cau G. Modified auxiliary exergy costing in advanced exergoeconomic analysis applied to a hybrid solar-biomass organic Rankine cycle plant. *Appl Energy* 2020;268:114888. <https://doi.org/10.1016/J.APENERGY.2020.114888>.
- [50] Tashtoush B, Algharbawi A ballah R. Parametric exergetic and energetic analysis of a novel modified organic rankine cycle with ejector. *Thermal Science and Engineering Progress* 2020;19. <https://doi.org/10.1016/j.tsep.2020.100644>.

- [51] Zhang C, Lin J, Tan Y. Parametric study and working fluid selection of the parallel type organic Rankine cycle and ejector heat pump combined cycle. *Solar Energy* 2020;205:487–95. <https://doi.org/10.1016/J.SOLENER.2020.05.099>.
- [52] Jafary S, Khalilarya S, Shawabkeh A, Wae-hayee M, Hashemian M. A complete energetic and exergetic analysis of a solar powered trigeneration system with two novel organic Rankine cycle (ORC) configurations. *J Clean Prod* 2021;281:124552. <https://doi.org/10.1016/J.JCLEPRO.2020.124552>.
- [53] Saini P, Singh J, Sarkar J. Novel combined desalination, heating and power system: Energy, exergy, economic and environmental assessments. *Renewable and Sustainable Energy Reviews* 2021;151:111612. <https://doi.org/10.1016/J.RSER.2021.111612>.
- [54] Yu G, Wang Q, Yu Z, Zhang N, Ming P. A Four-Hierarchy method for the design of organic Rankine cycle (ORC) power plants. *Energy Convers Manag* 2022;251:114996. <https://doi.org/10.1016/J.ENCONMAN.2021.114996>.
- [55] Surendran A, Seshadri S. An ejector based Transcritical Regenerative Series Two-Stage Organic Rankine Cycle for dual/multi-source heat recovery applications. *Thermal Science and Engineering Progress* 2022;27. <https://doi.org/10.1016/j.tsep.2021.101158>.
- [56] Li T, Gao H, Gao X, Meng N. Thermodynamic performance comparison of organic Rankine flash cycle with and without ejector for geothermal power output. *Appl Therm Eng* 2022;214:118846. <https://doi.org/10.1016/J.APPLTHERMALENG.2022.118846>.
- [57] Li T, Gao H, Gao X. Synergetic mechanism of organic Rankine flash cycle with ejector for geothermal power generation enhancement. *J Clean Prod* 2022;375:134174. <https://doi.org/10.1016/J.JCLEPRO.2022.134174>.
- [58] Varma GVP, Srinivas T. Power generation from low temperature heat recovery. *Renewable and Sustainable Energy Reviews* 2017;75:402–14. <https://doi.org/10.1016/J.RSER.2016.11.005>.
- [59] Miao Z, Xu J, Zhang K. Experimental and modeling investigation of an organic Rankine cycle system based on the scroll expander. *Energy* 2017;134:35–49. <https://doi.org/10.1016/J.ENERGY.2017.06.001>.
- [60] Lei B, Wang W, Wu YT, Ma CF, Wang JF, Zhang L, et al. Development and experimental study on a single screw expander integrated into an Organic Rankine Cycle. *Energy* 2016;116:43–52. <https://doi.org/10.1016/J.ENERGY.2016.09.089>.
- [61] Feng J, Cheng X, Wang H, Zhao L, Wang H, Dong H. Performance analysis and multi-objective optimization of organic Rankine cycle for low-grade sinter waste heat

- recovery. *Case Studies in Thermal Engineering* 2024;53:103915. <https://doi.org/10.1016/J.CSITE.2023.103915>.
- [62] Yang WH, Hou PC, Shih WH, Hsu SW, Chen Y Bin. Realization and optimization of a binary cycle power generating system using a low-grade heat source. *Journal of Mechanics* 2022;38:166–75. <https://doi.org/10.1093/JOM/UFAC014>.
- [63] Yan D, Yang F, Yang F, Zhang H, Guo Z, Li J, et al. Identifying the key system parameters of the organic Rankine cycle using the principal component analysis based on an experimental database. *Energy Convers Manag* 2021;240:114252. <https://doi.org/10.1016/J.ENCONMAN.2021.114252>.
- [64] Fatigati F, Cipollone R. Experimental and theoretical assessment of the effects of electrical load variation on the operability of a small-scale Organic Rankine Cycle (ORC)-based unit equipped with a hermetic scroll expander. *Energy* 2024;311:133318. <https://doi.org/10.1016/J.ENERGY.2024.133318>.
- [65] Gao Y, Song Q, Su W, Lin X, Sun Z, Huang Z, et al. Experimentally Identifying the Influences of Key Parameters for an Organic Rankine Cycle Using R123. *Sustainability* 2023, Vol 15, Page 814 2023;15:814. <https://doi.org/10.3390/SU15010814>.
- [66] Shao L, Ma X, Wei X, Hou Z, Meng X. Design and experimental study of a small-sized organic Rankine cycle system under various cooling conditions. *Energy* 2017;130:236–45. <https://doi.org/10.1016/J.ENERGY.2017.04.092>.
- [67] Zhang HH, Xi H, He YL, Zhang YW, Ning B. Experimental study of the organic rankine cycle under different heat and cooling conditions. *Energy* 2019;180:678–88. <https://doi.org/10.1016/J.ENERGY.2019.05.072>.
- [68] Tsai YC, Feng YQ, Shuai Y, Lai JH, Leung MKH, Wei Y, et al. Experimental validation of a 0.3 kW ORC for the future purposes in the study of low-grade thermal to power conversion. *Energy* 2023;285:129422. <https://doi.org/10.1016/J.ENERGY.2023.129422>.
- [69] Corigliano O, Algieri A, Fragiaco P. Turning Data Center Waste Heat into Energy: A Guide to Organic Rankine Cycle System Design and Performance Evaluation. *Applied Sciences* 2024, Vol 14, Page 6046 2024;14:6046. <https://doi.org/10.3390/APP14146046>.
- [70] Liu L, Zhu T, Wang T, Gao N. Experimental investigation on the effect of working fluid charge in a small-scale Organic Rankine Cycle under off-design conditions. *Energy* 2019;174:664–77. <https://doi.org/10.1016/J.ENERGY.2019.03.013>.

- [71] Ayachi F, Ksayer EB, Neveu P, Zoughaib A. Experimental investigation and modeling of a hermetic scroll expander. *Appl Energy* 2016;181:256–67. <https://doi.org/10.1016/J.APENERGY.2016.08.030>.
- [72] Badr O, O’Callaghan PW, Hussein M, Probert SD. Multi-vane expanders as prime movers for low-grade energy organic Rankine-cycle engines. *Appl Energy* 1984;16:129–46. [https://doi.org/10.1016/0306-2619\(84\)90060-6](https://doi.org/10.1016/0306-2619(84)90060-6).
- [73] Giuffrida A. Improving the semi-empirical modelling of a single-screw expander for small organic Rankine cycles. *Appl Energy* 2017;193:356–68. <https://doi.org/10.1016/J.APENERGY.2017.02.015>.
- [74] Zheng N, Zhao L, Wang XD, Tan YT. Experimental verification of a rolling-piston expander that applied for low-temperature Organic Rankine Cycle. *Appl Energy* 2013;112:1265–74. <https://doi.org/10.1016/J.APENERGY.2012.12.030>.
- [75] Dumont O, Parthoens A, Dickes R, Lemort V. Experimental investigation and optimal performance assessment of four volumetric expanders (scroll, screw, piston and roots) tested in a small-scale organic Rankine cycle system. *Energy* 2018;165:1119–27. <https://doi.org/10.1016/J.ENERGY.2018.06.182>.
- [76] Wang T, Liu L, Zhu T, Gao N. Experimental investigation of a small-scale Organic Rankine Cycle under off-design conditions: From the perspective of data fluctuation. *Energy Convers Manag* 2019;198:111826. <https://doi.org/10.1016/J.ENCONMAN.2019.111826>.
- [77] Liang Y, Yu Z. Experimental investigation of an Organic Rankine cycle system using an oil-free scroll expander for low grade heat recovery. *Int J Green Energy* 2021;18:812–21. <https://doi.org/10.1080/15435075.2021.1880915>.
- [78] Zou N, Zhang YP, Wang L, Ma S, Diop MA. Dimensional Variation and Parametrical Feasibility for Utilizing Aluminum Cast-House Flue Gases to Supplement Heat for the Organic Rankine Cycle (ORC). *JOM* 2024;76:1516–30. <https://doi.org/10.1007/S11837-023-06357-6/FIGURES/6>.
- [79] Li YM, Hung TC, Wu CJ, Su TY, Xi H, Wang CC. Experimental investigation of 3-kW organic Rankine cycle (ORC) system subject to heat source conditions: A new appraisal for assessment. *Energy* 2021;217:119342. <https://doi.org/10.1016/J.ENERGY.2020.119342>.
- [80] Zhou N, Wang X, Chen Z, Wang Z. Experimental study on Organic Rankine Cycle for waste heat recovery from low-temperature flue gas. *Energy* 2013;55:216–25. <https://doi.org/10.1016/J.ENERGY.2013.03.047>.

- [81] Feng Y qiang, Xu K jing, Zhang Q, Hung TC, He Z xia, Xi H, et al. Experimental investigation and machine learning optimization of a small-scale organic Rankine cycle. *Appl Therm Eng* 2023;224:120120. <https://doi.org/10.1016/J.APPLTHERMALENG.2023.120120>.
- [82] Wronski J, Imran M, Skovrup MJ, Haglind F. Experimental and numerical analysis of a reciprocating piston expander with variable valve timing for small-scale organic Rankine cycle power systems. *Appl Energy* 2019;247:403–16. <https://doi.org/10.1016/J.APENERGY.2019.04.028>.
- [83] Bademlioglu AH, Canbolat AS, Yamankaradeniz N, Kaynakli O. Investigation of parameters affecting Organic Rankine Cycle efficiency by using Taguchi and ANOVA methods. *Appl Therm Eng* 2018;145:221–8. <https://doi.org/10.1016/J.APPLTHERMALENG.2018.09.032>.
- [84] Tauveron N, Lhermet G, Payebien B, Caney N, Morin F. An Experimental Study of an Autonomous Heat Removal System Based on an Organic Rankine Cycle for an Advanced Nuclear Power Plant. *Energies* 2024, Vol 17, Page 5069 2024;17:5069. <https://doi.org/10.3390/EN17205069>.
- [85] Kallis G, Roumpedakis TC, Pallis P, Koutantzi Z, Charalampidis A, Karellas S. Life cycle analysis of a waste heat recovery for marine engines Organic Rankine Cycle. *Energy* 2022;257:124698. <https://doi.org/10.1016/J.ENERGY.2022.124698>.
- [86] Usman M, Imran M, Haglind F, Pesyridis A, Park BS. Experimental analysis of a micro-scale organic Rankine cycle system retrofitted to operate in grid-connected mode. *Appl Therm Eng* 2020;180:115889. <https://doi.org/10.1016/J.APPLTHERMALENG.2020.115889>.
- [87] Hijriawan M, Pambudi NA, Wijayanto DS, Biddinika MK, Saw LH. Experimental analysis of R134a working fluid on Organic Rankine Cycle (ORC) systems with scroll-expander. *Engineering Science and Technology, an International Journal* 2022;29:101036. <https://doi.org/10.1016/J.JESTCH.2021.06.016>.
- [88] Zhao YK, Lei B, Wu YT, Zhi RP, Wang W, Guo H, et al. Experimental study on the net efficiency of an Organic Rankine Cycle with single screw expander in different seasons. *Energy* 2018;165:769–75. <https://doi.org/10.1016/J.ENERGY.2018.09.013>.
- [89] Wronski J, Imran M, Skovrup MJ, Haglind F. Experimental and numerical analysis of a reciprocating piston expander with variable valve timing for small-scale organic Rankine cycle power systems. *Appl Energy* 2019;247:403–16. <https://doi.org/10.1016/J.APENERGY.2019.04.028>.

- [90] Li YM, Hung TC, Wu CJ, Su TY, Xi H, Wang CC. Experimental investigation of 3-kW organic Rankine cycle (ORC) system subject to heat source conditions: A new appraisal for assessment. *Energy* 2021;217:119342. <https://doi.org/10.1016/J.ENERGY.2020.119342>.
- [91] Obara S, Tanaka R. Waste heat recovery system for nuclear power plants using the gas hydrate heat cycle. *Appl Energy* 2021;292:116667. <https://doi.org/10.1016/J.APENERGY.2021.116667>.
- [92] Almomani B, Alkhalidi A, Olabi AG, Jouhara H. Expert opinions on strengths, weaknesses, opportunities, and threats of utilizing nuclear reactor waste heat for water desalination. *Desalination* 2023;564:116777. <https://doi.org/10.1016/J.DESAL.2023.116777>.
- [93] Adak AK, Rao IS, Srivastava VK, Tewari PK. Nuclear desalination by waste heat utilisation in an advanced heavy water reactor. *International Journal of Nuclear Desalination* 2007;2:234–43. <https://doi.org/10.1504/IJND.2007.013547>.
- [94] Adak AK, Tewari PK. Technical feasibility study for coupling a desalination plant to an Advanced Heavy Water Reactor. *Desalination* 2014;337:76–82. <https://doi.org/10.1016/J.DESAL.2013.11.004>.
- [95] Landelle A, Tauveron N, Haberschill P, Revellin R, Colasson S. Organic Rankine cycle design and performance comparison based on experimental database. *Appl Energy* 2017;204:1172–87. <https://doi.org/10.1016/J.APENERGY.2017.04.012>.
- [96] Nguyen VN, Pham NDK, Duong XQ, Tran VD, Pham MT, Rajamohan S, et al. Combination of solar with organic Rankine cycle as a potential solution for clean energy production. *Sustainable Energy Technologies and Assessments* 2023;57:103161. <https://doi.org/10.1016/J.SETA.2023.103161>.
- [97] Escalante ESR, Balestieri JAP, de Carvalho JA. The organic Rankine cycle: A promising technology for electricity generation and thermal pollution mitigation. *Energy* 2022;247:123405. <https://doi.org/10.1016/J.ENERGY.2022.123405>.
- [98] Olabi AG, Elsaid K, Sayed ET, Mahmoud MS, Wilberforce T, Hassiba RJ, et al. Application of nanofluids for enhanced waste heat recovery: A review. *Nano Energy* 2021;84:105871. <https://doi.org/10.1016/J.NANOEN.2021.105871>.
- [99] Bhattad A, Sarkar J, Ghosh P. Energetic and Exergetic Performances of Plate Heat Exchanger Using Brine-Based Hybrid Nanofluid for Milk Chilling Application. *Heat Transfer Engineering* 2020;41:522–35. <https://doi.org/10.1080/01457632.2018.1546770>.

- [100] Papapetrou M, Kosmadakis G. Resource, environmental, and economic aspects of SGHE. *Salinity Gradient Heat Engines* 2022;319–53. <https://doi.org/10.1016/B978-0-08-102847-6.00006-1>.
- [101] Muley A, Manglik RM. Enhanced Heat Transfer Characteristics of Single-Phase Flows in a Plate Heat Exchanger with Mixed Chevron Plates. *Journal of Enhanced Heat Transfer* 1997;4:187–201. <https://doi.org/10.1615/JEnhHeatTransf.v4.i3.30>.
- [102] García-Cascales JR, Vera-García F, Corberán-Salvador JM, González-Maciá J. Assessment of boiling and condensation heat transfer correlations in the modelling of plate heat exchangers. *International Journal of Refrigeration* 2007;30:1029–41. <https://doi.org/10.1016/J.IJREFRIG.2007.01.004>.
- [103] Parikhani T, Azariyan H, Behrad R, Ghaebi H, Jannatkhah J. Thermodynamic and thermoeconomic analysis of a novel ammonia-water mixture combined cooling, heating, and power (CCHP) cycle. *Renew Energy* 2020;145:1158–75. <https://doi.org/10.1016/J.RENENE.2019.06.100>.
- [104] Saini P, Singh J, Sarkar J. Thermodynamic, economic and environmental analyses of a novel solar energy driven small-scale combined cooling, heating and power system. *Energy Convers Manag* 2020;226:113542. <https://doi.org/10.1016/J.ENCONMAN.2020.113542>.
- [105] DERC. Annexure-ELECTRICITY TARIFF SCHEDULE FOR FY 2021-22-BRPL, BYPL, TPDDL & NDMC Ensuring Quality, Accessibility and Availability (24X7) of Power at Affordable Price. BSES Delhi 2021. https://www.bsedelhi.com/documents/55701/92678/Tariff_Schedule_for_FY_2021_22.pdf/e862f0b1-cbfe-2f63-84b1-e478c5021a0e?t=1633426006962 (accessed July 26, 2022).
- [106] Times of India. Average power price on Indian Energy Exchange hits 13-year high in March - Times of India. *The Times of India* 2022. <https://timesofindia.indiatimes.com/business/india-business/average-power-price-on-indian-energy-exchange-hits-13-year-high-in-march/articleshow/90692923.cms> (accessed July 26, 2022).
- [107] Hodge T, Fasching E. U.S. Energy Information Administration - EIA - Independent Statistics and Analysis. US Energy Information Administration 2022. <https://www.eia.gov/todayinenergy/detail.php?id=51438> (accessed July 26, 2022).
- [108] Roy J, Sarkar P, Biswas S, Choudhury A. Predictive equations for CO₂ emission factors for coal combustion, their applicability in a thermal power plant and subsequent

- assessment of uncertainty in CO₂ estimation. *Fuel* 2009;88:792–8. <https://doi.org/10.1016/J.FUEL.2008.11.023>.
- [109] Schlömer S, Bruckner T, Fulton L, Hertwich Austria E, McKinnon AU, Perczyk D, et al. III ANNEX Technology-specific Cost and Performance Parameters Editor: Lead Authors: Contributing Authors: to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change [Edenhofer Technology-specific Cost and Performance Parameters Annex III AIII Contents 2014.
- [110] Carbon Dioxide Emissions From Electricity - World Nuclear Association n.d. <https://www.world-nuclear.org/information-library/energy-and-the-environment/carbon-dioxide-emissions-from-electricity.aspx> (accessed July 15, 2023).
- [111] Campos Rodríguez CE, Escobar Palacio JC, Venturini OJ, Silva Lora EE, Cobas VM, Marques Dos Santos D, et al. Exergetic and economic comparison of ORC and Kalina cycle for low temperature enhanced geothermal system in Brazil. *Appl Therm Eng* 2013;52:109–19. <https://doi.org/10.1016/J.APPLTHERMALENG.2012.11.012>.
- [112] Hai T, Ashraf Ali M, Chaturvedi R, Fahad Almojil S, Ibrahim Almohana A, Fahmi Alali A, et al. A low-temperature driven organic Rankine cycle for waste heat recovery from a geothermal driven Kalina cycle: 4E analysis and optimization based on artificial intelligence. *Sustainable Energy Technologies and Assessments* 2023;55:102895. <https://doi.org/10.1016/J.SETA.2022.102895>.
- [113] Chen LX, Hu P, Sheng CC, Zhang N, Xie MN, Wang FX. Thermodynamic analysis of three ejector based organic flash cycles for low grade waste heat recovery. *Energy Convers Manag* 2019;185:384–95. <https://doi.org/10.1016/j.enconman.2019.02.016>.
- [114] Sarkar J. Generalized pinch point design method of subcritical-supercritical organic Rankine cycle for maximum heat recovery. *Energy* 2018;143:141–50. <https://doi.org/10.1016/J.ENERGY.2017.10.057>.
- [115] Yari M. Performance analysis of the different organic Rankine cycles (ORCs) using dry fluids. *International Journal of Exergy* 2009;6:323–42. <https://doi.org/10.1504/IJEX.2009.025324>.
- [116] Sim JB, Yook SJ, Kim YW. Performance Analysis of Organic Rankine Cycle with the Turbine Embedded in a Generator (TEG). *Energies* 2022, Vol 15, Page 309 2022;15:309. <https://doi.org/10.3390/EN15010309>.
- [117] Renewable Industrial Process Heat | Renewable Heating and Cooling: The Thermal Energy Advantage | US EPA n.d.

- https://19january2017snapshot.epa.gov/rhc/renewable-industrial-process-heat_.html
(accessed July 8, 2024).
- [118] Sonker VK, Chakraborty JP, Sarkar A. Development of a frugal solar still using phase change material and nanoparticles integrated with commercialization through a novel economic model. *J Energy Storage* 2022;51:104569. <https://doi.org/10.1016/J.EST.2022.104569>.
- [119] Liu C, Wang S, Zhang C, Li Q, Xu X, Huo E. Experimental study of micro-scale organic Rankine cycle system based on scroll expander. *Energy* 2019;188:115930. <https://doi.org/10.1016/J.ENERGY.2019.115930>.
- [120] Rayegan R, Tao YX. A procedure to select working fluids for Solar Organic Rankine Cycles (ORCs). *Renew Energy* 2011;36:659–70. <https://doi.org/10.1016/J.RENENE.2010.07.010>.
- [121] Luo J, Chen G, Wang Q, Zhang S. Analysis on the optimal mixing pressure and efficiency limit of an ideal ejector. *Energy Reports* 2021;7:4335–47. <https://doi.org/10.1016/J.EGYR.2021.07.024>.
- [122] Besagni G, Cristiani N, Croci L, Guédon GR, Inzoli F. Computational fluid-dynamics modelling of supersonic ejectors: Screening of modelling approaches, comprehensive validation and assessment of ejector component efficiencies. *Appl Therm Eng* 2021;186:116431. <https://doi.org/10.1016/J.APPLTHERMALENG.2020.116431>.
- [123] Liu X, Zhang Y, Shen J. System performance optimization of ORC-based geo-plant with R245fa under different geothermal water inlet temperatures. *Geothermics* 2017;66:134–42. <https://doi.org/10.1016/J.GEOTHERMICS.2016.12.004>.
- [124] Du Y, Pekris M, Tian G. Influence of sealing cavity geometries on flank clearance leakage and pressure imbalance of micro-scale transcritical CO₂ scroll expander by CFD modelling. *Energy* 2023;282:128775. <https://doi.org/10.1016/J.ENERGY.2023.128775>.
- [125] TRUING UP OF TARIFF FOR FY 2021-22, ANNUAL PERFORMANCE REVIEW (APR) FOR FY 2022-23 AND APPROVAL OF AGGREGATE REVENUE REQUIREMENT AND TARIFF FOR FY 2023-24 FOR Dakshinanchal Vidyut Vitran Nigam Ltd 2023.
- [126] India electricity prices, June 2023 | GlobalPetrolPrices.com n.d. https://www.globalpetrolprices.com/India/electricity_prices/ (accessed February 19, 2024).
- [127] EES: Engineering Equation Solver | F-Chart Software : Engineering Software n.d. <https://fchartsoftware.com/ees/> (accessed July 15, 2023).

- [128] Singh SK, Sarkar J. Energy, exergy and economic assessments of shell and tube condenser using hybrid nanofluid as coolant. *International Communications in Heat and Mass Transfer* 2018;98:41–8.
<https://doi.org/10.1016/J.ICHEATMASSTRANSFER.2018.08.005>.

List of Publications

Research Journal Paper:

- 1) Srivastava M, Sarkar J, Sarkar A, Maheshwari NK, Antony A. 4E analysis and optimization of novel ejector-enhanced organic Rankine cycles by introducing new economic models. *Thermal Science and Engineering Progress* 2023;41:101855. <https://doi.org/10.1016/J.TSEP.2023.101855>.
- 2) M. Srivastava, J. Sarkar, A. Sarkar, N.K. Maheshwari, A. Antony, Techno-economic and 4E comparisons of various thermodynamic power cycles for low-medium grade heat recovery, *Process Safety and Environmental Protection*. 178 (2023) 528–539. <https://doi.org/10.1016/J.PSEP.2023.08.041>.
- 3) Srivastava M, Sarkar J, Sarkar A, Maheshwari NK, Antony A. Thermo-economic feasibility study to utilize ORC technology for waste heat recovery from Indian nuclear power plants. *Energy* 2024:131338. <https://doi.org/10.1016/J.ENERGY.2024.131338>.
- 4) Fabrication and experimental investigation of a laboratory-scale organic Rankine cycle and data-driven optimization. (Accepted in “Energy”)
- 5) Experimental data-based optimisation and prediction of ORC technology by RSM method. (under preparation)

Conference paper:

- 1) Comparative energy-exergy analysis of ejector integration in ORC by optimization method for ultra-low to medium temperature heat sources. <https://doi.org/10.1615/IHMTC-2023.2010>.
- 2) Optimization and energy-exergy comparison of conventional modifications in ORC (organic Rankine cycle) technology for electricity generation. (FMFP Library)
- 3) Distributed renewable power generation using thermodynamic cycles: options and challenges. (ASTFE Library)

Book Chapter:

- 1) Thermodynamic cycle-based distributed renewable power generation: options and challenges. (ISEES Book Chapter)
- 2) Enhanced Waste Heat Recovery Using Nanofluid. (Elsevier Book Chapter)