

REFERENCES

- Aktar, M. A., Alam, M. M., & Al-Amin, A. Q. (2021). Global economic crisis, energy use, CO₂ emissions, and policy roadmap amid COVID-19. *Sustainable Production and Consumption*, 26, 770–781. <https://doi.org/10.1016/j.spc.2020.12.029>
- Al-Maliki, W. A. K., Alsaedi, S. S., Khafaji, H. Q. A., Alobaid, F., & Epple, B. (2023). A novel dual feedwater circuit for a parabolic trough solar power plant. *Scientific Reports*, 13(1), 1–22. <https://doi.org/10.1038/s41598-023-33829-1>
- Alhaj, M., & Al-Ghamdi, S. G. (2018). Reducing electric energy consumption in linear Fresnel collector solar fields coupled to thermal desalination plants by optimal mirror defocusing. *Heliyon*, 4(9), e00813. <https://doi.org/10.1016/j.heliyon.2018.e00813>
- Almohammadi, K. M., Ingham, D. B., Ma, L., & Pourkashan, M. (2013). Computational fluid dynamics (CFD) mesh independency techniques for a straight blade vertical axis wind turbine. *Energy*, 58, 483–493. <https://doi.org/10.1016/j.energy.2013.06.012>
- Apaolaza-Pagoaga, X., Carrillo-Andrés, A., & Rodrigues Ruivo, C. (2022). Experimental thermal performance evaluation of different configurations of Copenhagen solar cooker. *Renewable Energy*, 184, 604–618. <https://doi.org/https://doi.org/10.1016/j.renene.2021.11.105>
- Apaolaza-Pagoaga, X., Carrillo-Andrés, A., & Ruivo, C. R. (2021). New approach for analysing the effect of minor and major solar cooker design changes: Influence of height trivet on the power of a funnel cooker. *Renewable Energy*, 179, 2071–2085. <https://doi.org/https://doi.org/10.1016/j.renene.2021.08.025>
- Apaolaza-Pagoaga, X., Carrillo-Andrés, A., Ruivo, C. R., & Fernández-Hernández, F. (2023). The effect of partial loads on the performance of a funnel solar cooker. *Applied Thermal Engineering*, 219(November). <https://doi.org/10.1016/j.applthermaleng.2022.119643>
- Aragaw, Y. T., & Adem, K. D. (2022). Development and performance evaluation of tube-type direct solar oven for baking bread. *Heliyon*, 8(11), e11502. <https://doi.org/10.1016/j.heliyon.2022.e11502>
- Baccoli, R., Mastino, C. C., Innamorati, R., Serra, L., Curreli, S., Ghiani, E., Ricciu, R., & Marini, M. (2015). A mathematical model of a solar collector augmented by a flat plate above reflector:

- Optimum inclination of collector and reflector. *Energy Procedia*, 81, 205–214. <https://doi.org/10.1016/j.egypro.2015.12.085>
- Bellos, E. (2019). Progress in the design and the applications of linear Fresnel reflectors – A critical review. *Thermal Science and Engineering Progress*, 10, 112–137. <https://doi.org/10.1016/j.tsep.2019.01.014>
- Bellos, E., & Tzivanidis, C. (2018a). Development of analytical expressions for the incident angle modifiers of a linear Fresnel reflector. *Solar Energy*, 173(August), 769–779. <https://doi.org/10.1016/j.solener.2018.08.019>
- Bellos, E., & Tzivanidis, C. (2018b). Multi-criteria evaluation of a nanofluid-based linear Fresnel solar collector. *Solar Energy*, 163(February), 200–214. <https://doi.org/10.1016/j.solener.2018.02.007>
- Bellos, E., & Tzivanidis, C. (2019a). A review of concentrating solar thermal collectors with and without nanofluids. *Journal of Thermal Analysis and Calorimetry*, 135(1), 763–786. <https://doi.org/10.1007/s10973-018-7183-1>
- Bellos, E., & Tzivanidis, C. (2019b). A review of concentrating solar thermal collectors with and without nanofluids. *Journal of Thermal Analysis and Calorimetry*, 135(1), 763–786. <https://doi.org/10.1007/s10973-018-7183-1>
- Bellos, E., Tzivanidis, C., & Said, Z. (2020). A systematic parametric thermal analysis of nanofluid-based parabolic trough solar collectors. *Sustainable Energy Technologies and Assessments*, 39(April), 100714. <https://doi.org/10.1016/j.seta.2020.100714>
- Bhowmik, H., & Amin, R. (2017). Efficiency improvement of flat plate solar collector using reflector. *Energy Reports*, 3, 119–123. <https://doi.org/10.1016/j.egypro.2017.08.002>
- Burrage, K., Burrage, P. M., & Lythe, G. (2022). Effective numerical methods for simulating diffusion on a spherical surface in three dimensions. *Numerical Algorithms, Springer Nature*, 1577–1596. <https://doi.org/10.1007/s11075-022-01315-w>
- Cant, R. S., Ahmed, U., Fang, J., & Chakarborty, N. (2022). An unstructured adaptive mesh refinement approach for computational fluid dynamics of reacting flows. *Journal of Computational Physics*, 468, 111480. <https://doi.org/10.1016/j.jcp.2022.111480>
- Carrillo-Andrés, A., Apaolaza-Pagoaga, X., Ruivo, C. R., Rodríguez-García, E., & Fernández-

- Hernández, F. (2022). Optical characterization of a funnel solar cooker with azimuthal sun tracking through ray-tracing simulation. *Solar Energy*, 233(August 2021), 84–95. <https://doi.org/10.1016/j.solener.2021.12.027>
- Cascón, J. M., Ferragut, L., & Asensio, M. I. (2006). Space-time adaptive algorithm for the mixed parabolic problem. In *Numerische Mathematik* (Vol. 103, Issue 3). <https://doi.org/10.1007/s00211-006-0677-y>
- Chaithra, P., Ramesh Krishna, B., & Kamsali, N. (2023). Influence of solar radiation on ionosphere over India. *Physics Open*, 17(September), 100183. <https://doi.org/10.1016/j.physo.2023.100183>
- Chauhan, K., Daniel, J., Manavalla, S., & Jayaraju, P. (2022). Design and Experimental Studies of a Funnel Solar Cooker with Phase Change Material. *Energies*, 15(23). <https://doi.org/10.3390/en15239182>
- Chen, C. F., Lin, C. H., & Jan, H. T. (2010). A solar concentrator with two reflection mirrors designed by using a ray tracing method. *Optik*, 121(11), 1042–1051. <https://doi.org/10.1016/j.ijleo.2008.12.010>
- Chen, K., Lin, Y., Wang, Z., & Ying, Z. (2016). Least product relative error estimation. *Journal of Multivariate Analysis*, 144, 91–98. <https://doi.org/10.1016/j.jmva.2015.10.017>
- Chen, Q., & Srebric, J. (2002). A Procedure for Verification, Validation, and Reporting of Indoor Environment CFD Analyses. *HVAC&R Research*, 8(2), 201–216. <https://doi.org/10.1080/10789669.2002.10391437>
- Cheng, Z. D., He, Y. L., Cui, F. Q., Du, B. C., Zheng, Z. J., & Xu, Y. (2014). Comparative and sensitive analysis for parabolic trough solar collectors with a detailed Monte Carlo ray-tracing optical model. *Applied Energy*, 115, 559–572. <https://doi.org/10.1016/j.apenergy.2013.11.001>
- Choi, J. S., Kim, J. H., & Rim, C. T. (2017). Incidence solar power analysis of PV panels with curved reflectors. *2017 IEEE 18th Workshop on Control and Modeling for Power Electronics, COMPEL 2017*. <https://doi.org/10.1109/COMPEL.2017.8013320>
- Chong, K. K., & Tan, M. H. (2012). Comparison study of two different sun-tracking methods in optical efficiency of heliostat field. *International Journal of Photoenergy*, 2012. <https://doi.org/10.1155/2012/908364>
- Ciulla, G., Amico, A. D., Brano, V. Lo, & Buscemi, A. (2020). Regression analysis to design a solar

- thermal collector for occasional use. *Sustainable Energy Technologies and Assessments*, 37(September 2019), 100638. <https://doi.org/10.1016/j.seta.2020.100638>
- Coelho, P. J., & Argain, J. (1997). A local grid refinement technique based upon Richardson extrapolation. *Applied Mathematical Modelling*, 21(7), 427–436. [https://doi.org/10.1016/S0307-904X\(97\)00037-1](https://doi.org/10.1016/S0307-904X(97)00037-1)
- Console, P., & Hairer, E. (2014). Reducing round-off errors in symmetric multistep methods. *Journal of Computational and Applied Mathematics*, 262, 217–222. <https://doi.org/10.1016/j.cam.2013.07.025>
- Cui, Z., Bai, F., Wang, Z., & Wang, F. (2019). Influences of optical factors on the performance of the solar furnace. *Energies*, 12(20). <https://doi.org/10.3390/en12203933>
- Dincer, I. (1998). Energy and environmental impacts: Present and future perspectives. *Energy Sources*, 20(4–5), 427–453. <https://doi.org/10.1080/00908319808970070>
- Dincer, I. (2000). Renewable energy and sustainable development: A crucial review. *Renewable & Sustainable Energy Reviews*, 4(2), 157–175. [https://doi.org/10.1016/S1364-0321\(99\)00011-8](https://doi.org/10.1016/S1364-0321(99)00011-8)
- Diwania, S., Agrawal, S., Siddiqui, A. S., & Singh, S. (2020). Photovoltaic–thermal (PV/T) technology: a comprehensive review on applications and its advancement. *International Journal of Energy and Environmental Engineering*, 11(1), 33–54. <https://doi.org/10.1007/s40095-019-00327-y>
- Duan, X., He, C., Lin, X., Zhao, Y., & Feng, J. (2020). Quasi-Monte Carlo ray tracing algorithm for radiative flux distribution simulation. *Solar Energy*, 211(September), 167–182. <https://doi.org/10.1016/j.solener.2020.09.061>
- Duffie, J. A., Beckman, W. A., & Blair, N. (1985). Solar engineering of thermal processes, photovoltaics and wind. In *American Journal of Physics* (Vol. 53, Issue 4).
- ElCheikh, A., & ElKhoury, M. (2019). Effect of local grid refinement on performance of scale-resolving models for simulation of complex external flows. *Aerospace*, 6(8). <https://doi.org/10.3390/aerospace6080086>
- Emamjome Kashan, M., Fung, A. S., & Hossein Eisapour, A. (2023). Insulated concrete form foundation wall as solar thermal energy storage for Cold-Climate building heating system. *Energy Conversion and Management: X*, 19(March), 100391.

<https://doi.org/10.1016/j.ecmx.2023.100391>

Erickson, J., Guoy, D., Sullivan, J. M., & Üngör, A. (2005). Building spacetime meshes over arbitrary spatial domains. *Engineering with Computers*, 20(4), 342–353. <https://doi.org/10.1007/s00366-005-0303-0>

Fernandes, C. S., Dias, R. P., Nóbrega, J. M., & Maia, J. M. (2007). Laminar flow in chevron-type plate heat exchangers: CFD analysis of tortuosity, shape factor and friction factor. *Chemical Engineering and Processing: Process Intensification*, 46(9), 825–833. <https://doi.org/10.1016/j.cep.2007.05.011>

Fernández-González, D., Ruiz-Bustanza, Í., González-Gasca, C., Piñuela Noval, J., Mochón-Castaños, J., Sancho-Gorostiaga, J., & Verdeja, L. F. (2018). Concentrated solar energy applications in materials science and metallurgy. *Solar Energy*, 170(May), 520–540. <https://doi.org/10.1016/j.solener.2018.05.065>

Fossa, M., Boccalatte, A., & Memme, S. (2021). Solar Fresnel modelling , geometry enhancement and 3D ray tracing analysis devoted to different energy efficiency definitions and applied to a real facility. *Solar Energy*, 216(October 2020), 75–89. <https://doi.org/10.1016/j.solener.2020.12.047>

Garanzha, V., Kamenski, L., & Si, H. (2019). *Numerical Geometry, Grid Generation and Scientific Computing* (T. J. B. M. G. D. E. K. R. M. N. D. R. T. Schlick (ed.); Vol. 131). Springer International Publishing. <https://doi.org/10.1007/978-3-030-23436-2>

Georgiou, M. D., Bonanos, A. M., & Georgiadis, J. G. (2013). Caustics as an Alternate of Ray Tracing to Evaluate Heliostat Mirrors. *Conference Papers in Energy*, 2013, 1–7. <https://doi.org/10.1155/2013/395659>

Getnet, M. Y., Gunjo, D. G., & Sinha, D. K. (2023). Experimental investigation of thermal storage integrated indirect solar cooker with and without reflectors. *Results in Engineering*, 18(March), 101022. <https://doi.org/10.1016/j.rineng.2023.101022>

Ghodbane, M., Bellos, E., Said, Z., Boumeddane, B., Hussein, A. K., & Kolsi, L. (2021). Evaluating energy efficiency and economic effect of heat transfer in copper tube for small solar linear Fresnel reflector. *Journal of Thermal Analysis and Calorimetry*, 143(6), 4197–4215. <https://doi.org/10.1007/s10973-020-09384-6>

Giraldo, F. X. (2020). *An Introduction to Element-Based Galerkin Methods on Tensor-Product Bases*

(T. J. B. M. G. D. E. K. R. M. N. D. R. T. Schlick (ed.); Vol. 24). Springer International Publishing. <https://doi.org/10.1007/978-3-030-55069-1>

Glassner, A. (2019). *An Introduction to Ray Tracing*.

Gnedin, N. Y., Semenov, V. A., & Kravtsov, A. V. (2018). Enforcing the Courant–Friedrichs–Lewy condition in explicitly conservative local time stepping schemes. *Journal of Computational Physics*, 359, 93–105. <https://doi.org/10.1016/j.jcp.2018.01.008>

Grodsky, S. M., & Hernandez, R. R. (2020). Reduced ecosystem services of desert plants from ground-mounted solar energy development. *Nature Sustainability*, 3(12), 1036–1043. <https://doi.org/10.1038/s41893-020-0574-x>

Guidara, Z., Souissi, M., Morgenstern, A., & Maalej, A. (2017). Thermal performance of a solar box cooker with outer reflectors: Numerical study and experimental investigation. *Solar Energy*, 158(June), 347–359. <https://doi.org/10.1016/j.solener.2017.09.054>

Harmim, A., Merzouk, M., Boukar, M., & Amar, M. (2013). Design and experimental testing of an innovative building-integrated box type solar cooker. *Solar Energy*, 98(PC), 422–433. <https://doi.org/10.1016/j.solener.2013.09.019>

Hatami, S., & Walsh, S. D. C. (2023). Using Adaptive Mesh Refinement strategies to investigate immiscible fluid flow in fractures. *International Journal of Multiphase Flow*, 158(May 2022), 104274. <https://doi.org/10.1016/j.ijmultiphaseflow.2022.104274>

Herrando, M., Wang, K., Huang, G., Otanicar, T., Mousa, O. B., Agathokleous, R. A., Ding, Y., Kalogirou, S., Ekins-Daukes, N., Taylor, R. A., & Markides, C. N. (2023). A review of solar hybrid photovoltaic-thermal (PV-T) collectors and systems. *Progress in Energy and Combustion Science*, 97(November 2022), 101072. <https://doi.org/10.1016/j.pecs.2023.101072>

Himanshu, T. (2009). *Himanshu Tyagi*. <http://www.asme.org/about-asme/terms-of-use>

Hong, S., Bradshaw, C. J. A., & Brook, B. W. (2013). Evaluating options for the future energy mix of Japan after the Fukushima nuclear crisis. *Energy Policy*, 56(March 2011), 418–424. <https://doi.org/10.1016/j.enpol.2013.01.002>

Hottel, H. C. (196 C.E.). *Some problem in radiation transport*. Massachusetts Institute of Technology.

Huang, F., Li, L., & Huang, W. (2014). Optical performance of an azimuth tracking linear Fresnel

- solar concentrator. *Solar Energy*, 108, 1–12. <https://doi.org/10.1016/j.solener.2014.06.028>
- Ibrahim, S. M. A., & El-Reidy, M. K. (1995). The performance of a solar cooker in Egypt. *Renewable Energy*, 6(8), 1041–1050. [https://doi.org/10.1016/0960-1481\(95\)00088-7](https://doi.org/10.1016/0960-1481(95)00088-7)
- India Energy Outlook. (2021). *India Energy Outlook 2021*. <https://doi.org/10.1787/ec2fd78d-en>
- Jafrancesco, D., Sansoni, P., Francini, F., Contento, G., Cancro, C., Privato, C., Graditi, G., Ferruzzi, D., Mercatelli, L., Sani, E., & Fontani, D. (2014). Mirrors array for a solar furnace: Optical analysis and simulation results. *Renewable Energy*, 63, 263–271. <https://doi.org/10.1016/j.renene.2013.09.006>
- Jathar, L. D., Ganesan, S., Shahapurkar, K., Soudagar, M. E. M., Mujtaba, M. A., Anqi, A. E., Farooq, M., Khidmatgar, A., Goodarzi, M., & Safaei, M. R. (2022). Effect of various factors and diverse approaches to enhance the performance of solar stills: a comprehensive review. In *Journal of Thermal Analysis and Calorimetry* (Vol. 147, Issue 7). Springer International Publishing. <https://doi.org/10.1007/s10973-021-10826-y>
- Jevasingh, V. K., & Herbert, G. M. J. (2016). A review of solar parabolic trough collector. In *Renewable and Sustainable Energy Reviews* (Vol. 54, pp. 1085–1091). Elsevier. <https://doi.org/10.1016/j.rser.2015.10.043>
- Jignesh, P., Pujak, S., Aejaj, S., Jha, V., & Patel, J. (2018). Investigation on Thermal Performance of Solar Air Heater by Using Artificial Roughness – A Review. *International Journal of Scientific Research in Science, Engineering and Technology*, 4(5), 12574–12579.
- John A. Duffi, W. A. B. (1989). Solar Engineering of Thermal Processes. In *Clinics in Laboratory Medicine* (Vol. 9, Issue 2). Jhon wiley. [https://doi.org/10.1016/s0272-2712\(18\)30627-9](https://doi.org/10.1016/s0272-2712(18)30627-9)
- Kapusta, K., Wiatowski, M., Thomas, H. R., Zagorščak, R., Sadasivam, S., Masum, S., Kempka, T., Otto, C., Basa, W., Szyja, M., & Stańczyk, K. (2023). Experimental simulations of methane-oriented underground coal gasification using hydrogen - The effect of coal rank and gasification pressure on the hydrogasification process. *International Journal of Hydrogen Energy*, 48(3), 921–932. <https://doi.org/10.1016/j.ijhydene.2022.10.012>
- Ketabchi, F., Gorjian, S., Sabzehparvar, S., Shadram, Z., Ghoreishi, M. S., & Rahimzadeh, H. (2019). Experimental performance evaluation of a modified solar still integrated with a cooling system and external flat-plate reflectors. *Solar Energy*, 187(June 2018), 137–146. <https://doi.org/10.1016/j.solener.2019.05.032>

- Khallaf, A. M., Tawfik, M. A., El-Sebaei, A. A., & Sagade, A. A. (2020). Mathematical modeling and experimental validation of the thermal performance of a novel design solar cooker. *Solar Energy*, 207(June), 40–50. <https://doi.org/10.1016/j.solener.2020.06.069>
- Khan, K. S., Latif, Y., Munir, A., & Hensel, O. (2022). Comparative thermal analyses of solar milk pasteurizers integrated with solar concentrator and evacuated tube collector. *Energy Reports*, 8, 7917–7930. <https://doi.org/10.1016/j.egy.2022.06.001>
- Khatibi, A., Ghasempour, R., Shirmohammadi, R., Farahmand, A., Alizadeh, H., & Bellos, E. (2019). Optimization of multi-layer absorbing systems in solar flat-plate collectors using cluster analysis. *Sustainable Energy Technologies and Assessments*, 36(July), 100538. <https://doi.org/10.1016/j.seta.2019.100538>
- Khullar, V., Tyagi, H., Otanicar, T. P., Hewakuruppu, Y. L., & Taylor, R. A. (2018). Solar selective volumetric receivers for harnessing solar thermal energy. *Journal of Heat Transfer*, 140(6), 1–15. <https://doi.org/10.1115/1.4039214>
- Kline, S. J. (1985). The purposes of uncertainty analysis. *Journal of Fluids Engineering, Transactions of the ASME*, 107(2), 153–160. <https://doi.org/10.1115/1.3242449>
- Kostić, L. T., & Pavlović, Z. T. (2012). Optimal position of flat plate reflectors of solar thermal collector. *Energy and Buildings*, 45, 161–168. <https://doi.org/10.1016/j.enbuild.2011.10.059>
- Kourakos, G., & Harter, T. (2021). Simulation of Unconfined Aquifer Flow Based on Parallel Adaptive Mesh Refinement. *Water Resources Research*, 57(12). <https://doi.org/10.1029/2020WR029354>
- Kowalczyk, Z., & Tatara, M. S. (2021). Analytical ‘steady-state’-based derivation and clarification of the Courant-Friedrichs-Lewy condition for pipe flow. *Journal of Natural Gas Science and Engineering*, 91(December 2020). <https://doi.org/10.1016/j.jngse.2021.103953>
- Kumar, N., Chavda, T., & Mistry, H. N. (2010). A Truncated pyramid non-tracking type multipurpose domestic solar cooker/hot water system. *Applied Energy*, 87(2), 471–477. <https://doi.org/10.1016/j.apenergy.2009.06.031>
- Langer, U., & Schafelner, A. (2022). Adaptive space-time finite element methods for parabolic optimal control problems. *Journal of Numerical Mathematics*, 30(4), 247–266. <https://doi.org/10.1515/jnma-2021-0059>

- Laser Light* (Smars ®). (n.d.). Retrieved December 23, 2021, from https://www.amazon.in/Smars_laser_light (Accessed on 15 April 2023)
- Lee, M., Park, G., Park, C., & Kim, C. (2020a). Improvement of Grid Independence Test for Computational Fluid Dynamics Model of Building Based on Grid Resolution. *Advances in Civil Engineering*, 2020. <https://doi.org/10.1155/2020/8827936>
- Lee, M., Park, G., Park, C., & Kim, C. (2020b). Improvement of Grid Independence Test for Computational Fluid Dynamics Model of Building Based on Grid Resolution. *Advances in Civil Engineering*, 2020. <https://doi.org/10.1155/2020/8827936>
- Li, J., & Just, R. E. (2018). Modeling household energy consumption and adoption of energy efficient technology. *Energy Economics*, 72, 404–415. <https://doi.org/10.1016/j.eneco.2018.04.019>
- Li, L., Li, H., Xu, Q., & Huang, W. (2015). Performance analysis of Azimuth Tracking Fixed Mirror Solar Concentrator. *Renewable Energy*, 75, 722–732. <https://doi.org/10.1016/j.renene.2014.10.062>
- Li, X., Sun, B., Sui, C., Nandi, A., Fang, H., Peng, Y., Tan, G., & Hsu, P. C. (2020). Integration of daytime radiative cooling and solar heating for year-round energy saving in buildings. *Nature Communications*, 11(1), 1–9. <https://doi.org/10.1038/s41467-020-19790-x>
- Lin, M., Sumathy, K., Dai, Y. J., Wang, R. Z., & Chen, Y. (2013). Experimental and theoretical analysis on a linear Fresnel reflector solar collector prototype with V-shaped cavity receiver. *Applied Thermal Engineering*, 51(1–2), 963–972. <https://doi.org/10.1016/j.applthermaleng.2012.10.050>
- Liu, J., Möller, M., & Schuttelaars, H. M. (2021). Balancing truncation and round-off errors in FEM: One-dimensional analysis. *Journal of Computational and Applied Mathematics*, 386, 113219. <https://doi.org/10.1016/j.cam.2020.113219>
- Lv, S., Zhu, J., & Wang, R. (2023). Experimental Research on a Solar Energy Phase Change Heat Storage Heating System Applied in the Rural Area. *Sustainability (Switzerland)*, 15(3), 1–20. <https://doi.org/10.3390/su15032575>
- Madadi Avargani, V., Rahimi, A., & Divband, M. (2020). Coupled optical and thermal analyses of a new type of solar water heaters using parabolic trough reflectors. *Sustainable Energy Technologies and Assessments*, 40(December 2019), 100780. <https://doi.org/10.1016/j.seta.2020.100780>

- Manieniyar, V., Thambidurai, M., & Selvakumar, R. (2009). Study on Energy Crisis and the Future of Fossil. *Proceedings of SHEE, October*, 7–12. <https://doi.org/10.13140/2.1.2234.3689>
- Mannhardt, J., Gabrielli, P., & Sansavini, G. (2023). Collaborative and selfish mitigation strategies to tackle energy scarcity: The case of the European gas crisis. *ISCIENCE*, 26(5), 106750. <https://doi.org/10.1016/j.isci.2023.106750>
- Mansoor O, M., Simon, S. P., Kumar, K. A., Sundareswaran, K., Nayak, P. S. R., & Padhy, N. P. (2020). Impact and economic assessment on solar PV mirroring system – A feasibility report. *Energy Conversion and Management*, 203(October), 112222. <https://doi.org/10.1016/j.enconman.2019.112222>
- Masters, I., Malki, R., Williams, A. J., & Croft, T. N. (2013). The influence of flow acceleration on tidal stream turbine wake dynamics: A numerical study using a coupled BEM–CFD model. *Applied Mathematical Modelling*, 37(16–17), 7905–7918. <https://doi.org/10.1016/j.apm.2013.06.004>
- Memme, S., & Fossa, M. (2022). Maximum energy yield of PV surfaces in France and Italy from climate based equations for optimum tilt at different azimuth angles. *Renewable Energy*, 200, 845–866. <https://doi.org/10.1016/j.renene.2022.10.019>
- Merrouni, A. A., Wolfertstetter, F., Mezrhab, A., Wilbert, S., & Pitz-Paal, R. (2015). Investigation of Soiling Effect on Different Solar Mirror Materials under Moroccan Climate. *Energy Procedia*, 69(May), 1948–1957. <https://doi.org/10.1016/j.egypro.2015.03.194>
- Miyashita, H., & Yamada, Y. (2005). Practical improvements of multi-grid iteration for adaptive mesh refinement method. *Fluid Dynamics Research*, 36(3), 137–152. <https://doi.org/10.1016/j.fluiddyn.2005.02.001>
- Momeni, S., Menbari, A., Alemrajabi, A. A., & Mohammadi, P. (2019). Theoretical performance analysis of new class of Fresnel concentrated solar thermal collector based on parabolic reflectors. *Sustainable Energy Technologies and Assessments*, 31(August 2017), 25–33. <https://doi.org/10.1016/j.seta.2018.11.004>
- Moravej, M., Bozorg, M. V., Guan, Y., Li, L. K. B., Doranehgard, M. H., Hong, K., & Xiong, Q. (2020). Enhancing the efficiency of a symmetric flat-plate solar collector via the use of rutile TiO₂-water nanofluids. *Sustainable Energy Technologies and Assessments*, 40(June). <https://doi.org/10.1016/j.seta.2020.100783>

- More, S. S., Ravindranath, G., More, S. E., & Thipase, S. S. (2018). Mathematical modeling and analysis of compound parabolic concentrator using soltrace. *International Journal of Mechanical Engineering and Technology*, 9(6), 113–121.
- Naik, B. K., Bhowmik, M., & Muthukumar, P. (2019). Experimental investigation and numerical modelling on the performance assessments of evacuated U – Tube solar collector systems. *Renewable Energy*, 134, 1344–1361. <https://doi.org/10.1016/j.renene.2018.09.066>
- Nakano, T., & Liu, X. (2023). Guaranteed local error estimation for finite element solutions of boundary value problems. *Journal of Computational and Applied Mathematics*, 425, 115061. <https://doi.org/10.1016/j.cam.2023.115061>
- Nandwani, S. S. (1988). Experimental and theoretical analysis of a simple solar oven in the climate of Costa Rica - I. *Solar and Wind Technology*, 5(2), 159–170. [https://doi.org/10.1016/0741-983X\(88\)90075-6](https://doi.org/10.1016/0741-983X(88)90075-6)
- Nydal, O. J. (2014). Ray tracing for optimization of a double reflector system for direct illumination of a heat storage. *Energy Procedia*, 57, 2211–2220. <https://doi.org/10.1016/j.egypro.2014.10.188>
- Okonkwo, E. C., Wole-Osho, I., Kavaz, D., Abid, M., & Al-Ansari, T. (2020). Thermodynamic evaluation and optimization of a flat plate collector operating with alumina and iron mono and hybrid nanofluids. *Sustainable Energy Technologies and Assessments*, 37(November 2019), 100636. <https://doi.org/10.1016/j.seta.2020.100636>
- Olczak, P., & Olek, M. (2016). The Influence of Evacuated-tube Collector Assembly on Heat Loss in Tracking Solar System with Parabolic Mirror Reflectors. *Procedia Engineering*, 157, 317–324. <https://doi.org/10.1016/j.proeng.2016.08.372>
- P. R. Vittal. (2013). ANALYTICAL GEOMETRY 2D and 3D. *Pearson India*, 4(1), 1–890.
- Pan, J., Wan, Q., Zhang, Y., & Ren, Y. (2018). High-order compact finite volume methods on unstructured grids with adaptive mesh refinement for solving inviscid and viscous flows. *Chinese Journal of Aeronautics*, 31(9), 1829–1841. <https://doi.org/10.1016/j.cja.2018.06.018>
- Panchal, A., Dave, N., Parmar, B., Patel, J. H., & Patel, J. I. (2021). *An Assessment of Phase Change Materials for Domestic Applications International Journal of Advance Engineering and Research Development An Assessment of Phase Change Materials for Domestic Applicatons. July.*

- Pang, C., Yang, H., Gao, Z., & Chen, S. (2021). Enhanced adaptive mesh refinement method using advanced vortex identification sensors in wake flow. *Aerospace Science and Technology*, *115*, 106796. <https://doi.org/10.1016/j.ast.2021.106796>
- Patel, Jay, A. patel. (2023). Effect of octagonal shaped aperture area on optical performance of the simple flat plate solar reflecting system. *2023 IEEE Renewable Energy and Sustainable E-Mobility Conference (RESEM)*, 1–6. <https://doi.org/10.1109/RESEM57584.2023.10236285>
- Patel, A., Sarkar, P., Tyagi, H., & Singh, H. (2016). Time value of emission and technology discounting rate for off-grid electricity generation in India using intermediate pyrolysis. *Environmental Impact Assessment Review*, *59*(March 2020), 10–26. <https://doi.org/10.1016/j.eiar.2016.03.001>
- Patel, J., & Patel, A. R. (2023). Effect of reflector height to base ratio on the optical performance of square shaped aperture area based flat plat solar reflecting system. *Proceeding of International Conference on Recent Advances in (Applied) Sciences & Engineering (Raise) : Vol. IV . ISBN: 978-81-962938-1-9*, 9–16.
- Patel, J., Patel, A. R., & Mulasiya, C. (2023). Determination of optical and thermal performance of a large - sized flat plate solar reflector unit under azimuthal sun alignment. *Journal of Thermal Analysis and Calorimetry*, 1–21. <https://doi.org/10.1007/s10973-023-12282-2>
- Patel, J., & Singh, V. (2015). *Energy storage system for cooling and heating application*.
- Pauletta, S. (2016). A Solar Fresnel Collector Based on an Evacuated Flat Receiver. *Energy Procedia*, *101*(September), 480–487. <https://doi.org/10.1016/j.egypro.2016.11.061>
- Pereira, J. C. G., Fernandes, J. C., & Guerra Rosa, L. (2019). Mathematical Models for Simulation and Optimization of High-Flux Solar Furnaces. *Mathematical and Computational Applications*, *24*(2), 65. <https://doi.org/10.3390/mca24020065>
- Pereira, J. C. G., Rodríguez, J., Fernandes, J. C., & Rosa, L. G. (2020). Homogeneous flux distribution in high-flux solar furnaces. *Energies*, *13*(2). <https://doi.org/10.3390/en13020433>
- Petrash, J. (2014). A Free and open source monte carlo ray tracing program for concentrating solar enrgy research. *ASME 2010 4th International Conference on Energy Sustainability*, 1–8.
- Porta, G. M., Perotto, S., & Ballio, F. (2012). A space-time adaptation scheme for unsteady shallow water problems. *Mathematics and Computers in Simulation*, *82*(12), 2929–2950.

<https://doi.org/10.1016/j.matcom.2011.06.004>

- Pranesh, V., Velraj, R., Christopher, S., & Kumaresan, V. (2019). A 50 year review of basic and applied research in compound parabolic concentrating solar thermal collector for domestic and industrial applications. *Solar Energy*, 187(April 2018), 293–340. <https://doi.org/10.1016/j.solener.2019.04.056>
- Priyanshu, S., Abhishek, S., Akshay, T., Vijay, T., & Patel, J. (2018). Development of Multipurpose Commercial Solar Furnace - A Review. *International Journal of Scientific Research in Science, Engineering and Technology*, 4, 579–585.
- Pujol-Nadal, R., Martínez-Moll, V., Moià-Pol, A., Cardona, G., Hertel, D. J., & Bonnin, F. (2017). *OTSun Project: Development of a Computational Tool for High-Resolution Optical Analysis of Solar Collectors*. October, 1–11. <https://doi.org/10.18086/eurosun.2016.06.04>
- Qiu, G., Ma, Y., Song, W., & Cai, W. (2021). Comparative study on solar flat-plate collectors coupled with three types of reflectors not requiring solar tracking for space heating. *Renewable Energy*, 169, 104–116. <https://doi.org/10.1016/j.renene.2020.12.134>
- Quecedo, M., Pastor, M., Herreros, M. I., & Merodo, J. A. F. (2004). Numerical modelling of the propagation of fast landslides using the finite element method. *International Journal for Numerical Methods in Engineering*, 59(6), 755–794. <https://doi.org/10.1002/nme.841>
- Rachedi, M. Y., Bechki, D., Marif, Y., Boughali, S., & Bouguettaia, H. (2022). A novel model for optimizing tilts of four reflectors on a flat plate thermal collector: Case study in Ouargla region. *Case Studies in Thermal Engineering*, 32(November 2021), 101872. <https://doi.org/10.1016/j.csite.2022.101872>
- Rehman, N. ur. (2019). Optical-irradiance ray-tracing model for the performance analysis and optimization of a single slope solar still. *Desalination*, 457(January), 22–31. <https://doi.org/10.1016/j.desal.2019.01.026>
- Riveros-Rosas, D., Herrera-Vázquez, J., Pérez-Rábago, C. A., Arancibia-Bulnes, C. A., Vázquez-Montiel, S., Sánchez-González, M., Granados-Agustín, F., Jaramillo, O. A., & Estrada, C. A. (2010). Optical design of a high radiative flux solar furnace for Mexico. *Solar Energy*, 84(5), 792–800. <https://doi.org/10.1016/j.solener.2010.02.002>
- Roache, P. J. (1997). Quantification of uncertainty in computational fluid dynamics. *Annual Review of Fluid Mechanics*, 29(1), 123–160. <https://doi.org/10.1146/annurev.fluid.29.1.123>

- Rocha, P. A. C., Rocha, H. H. B., Carneiro, F. O. M., Vieira da Silva, M. E., & Bueno, A. V. (2014). $k-\omega$ SST (shear stress transport) turbulence model calibration: A case study on a small scale horizontal axis wind turbine. *Energy*, *65*, 412–418. <https://doi.org/10.1016/j.energy.2013.11.050>
- Roelandts, R. (2007). Solar radiation. In *Annales de Dermatologie et de Venereologie* (Vol. 134, Issue 5 C2). [https://doi.org/10.1016/S0151-9638\(07\)89237-4](https://doi.org/10.1016/S0151-9638(07)89237-4)
- Ruivo, C. R., Apaolaza-Pagoaga, X., Carrillo-Andrés, A., & Coccia, G. (2022). Influence of the aperture area on the performance of a solar funnel cooker operating at high sun elevations using glycerine as load. *Sustainable Energy Technologies and Assessments*, *53*(October). <https://doi.org/10.1016/j.seta.2022.102600>
- Ruivo, C. R., Carrillo-Andrés, A., & Apaolaza-Pagoaga, X. (2021). Experimental determination of the standardised power of a solar funnel cooker for low sun elevations. *Renewable Energy*, *170*, 364–374. <https://doi.org/10.1016/j.renene.2021.01.146>
- Saberi, Z., Jarimi, H., Hj Jumali, M. H., Suhendri, S., Riffat, S., Fudholi, A., Razali, H. H., & Sopian, K. (2023). Performance assessment of double pass photovoltaic/thermal solar air collector using bifacial PV with CPC and mirror reflector under Malaysian climate. *Case Studies in Thermal Engineering*, *44*(January), 102811. <https://doi.org/10.1016/j.csite.2023.102811>
- Samat, K. F., Jaafar, R., Idris, M. I., Maidin, S., V. O., Kasim, M. S., & Abdullah, Z. (2017). Grid independent study on tetrahedral and hexahedral dominant elements types in finite element analysis of integrated circuit package. *Jurnal Teknologi*, *79*(5–2), 45–49. <https://doi.org/10.11113/jt.v79.11282>
- Sareriya, K. J., Andharia, J. K., Vanzara, P. B., & Maiti, S. (2022). A comprehensive review of design parameters, thermal performance assessment, and medium temperature solar thermal applications of Scheffler concentrator. *Cleaner Engineering and Technology*, *6*, 100366. <https://doi.org/10.1016/j.clet.2021.100366>
- Sattler, J. C., Röger, M., Schwarzbözl, P., Buck, R., Macke, A., Raeder, C., & Göttsche, J. (2020). Review of heliostat calibration and tracking control methods. *Solar Energy*, *207*(May), 110–132. <https://doi.org/10.1016/j.solener.2020.06.030>
- Saura, J. M., Rodrigo, P. M., Almonacid, F. M., Chemisana, D., & Fernández, E. F. (2021). Experimental characterisation of irradiance and spectral non-uniformity and its impact on multi-junction solar cells: Refractive vs. reflective optics. *Solar Energy Materials and Solar Cells*, *225*(June 2020). <https://doi.org/10.1016/j.solmat.2021.111061>

- Saxena, A., Norton, B., Goel, V., & Singh, D. B. (2022). Solar cooking innovations, their appropriateness, and viability. *Environmental Science and Pollution Research*, 29(39), 58537–58560. <https://doi.org/10.1007/s11356-022-21670-4>
- Schüler, A., Kostro, A., Galande, C., Valle Del Olmo, M., De Chambrier, E., & Huriet, B. (2007). Principles of Monte-Carlo ray-tracing simulations of quantum dot solar concentrators. *ISES Solar World Congress 2007, ISES 2007*, 2, 1033–1037. https://doi.org/10.1007/978-3-540-75997-3_200
- Serani, A., Pellegrini, R., Wackers, J., Jeanson, C.-E., Queutey, P., Visonneau, M., & Diez, M. (2019). Adaptive multi-fidelity sampling for CFD-based optimisation via radial basis function metamodels. *International Journal of Computational Fluid Dynamics*, 33(6–7), 237–255. <https://doi.org/10.1080/10618562.2019.1683164>
- Shakeriaski, F., Ghodrati, M., & Salehi, F. (2021). Integrated photovoltaic thermal systems, their applications and recent advance on performance improvement: a review. *International Journal of Environmental Studies*, 78(5), 838–864. <https://doi.org/10.1080/00207233.2021.1893488>
- Sharma Naresh Kumar, R Savithri, A. K. (2021). *Energy Statistics India 2021*. www.mospi.gov.in
- Shi, H., Qiao, H., Li, T., & Shen, H. (2021). Adaptive Mesh Refinement Method for Speeding Up Numerical Simulation of Electroslag Remelting Process. *Steel Research International*, 92(5), 2000583. <https://doi.org/10.1002/srin.202000583>
- Siddharth, S., Craig, C., & Hanifa, S. (2016). Computational Fluid Dynamics (CFD) Mesh Independency Study of A Straight Blade Horizontal Axis Tidal Turbine. *Preprint, August*, 1–11. <https://doi.org/10.20944/preprints201608.0008.v1>
- Smith, A. W., & Rohatgi, A. (1993). *Ray tracing analysis of the inverted pyramid texturing geometry for high efficiency silicon solar cells*. 29.
- Solcast. (2020). <https://solcast.com/>
- Suharta, H., Parangtopo, & Sayigh, A. M. (1996). Solar Oven, design, and its field testing in West Lombok regency, Indonesia. *Renewable Energy*, 9(1-4 SPEC. ISS.), 749–753. [https://doi.org/10.1016/0960-1481\(96\)88392-3](https://doi.org/10.1016/0960-1481(96)88392-3)
- SunShot, E. E. & R. E. (EERE). (2012). SunShot Vision Study. *US Department of Energy, February*, 320.

<http://www1.eere.energy.gov/solar/pdfs/47927.pdf%5Cnhttp://scholar.google.com/scholar?hl=en&btnG=Search&q=intitle:SunShot+Vision+Study#0>

- Taki, M., Rohani, A., & Rahmati-Joneidabad, M. (2018). Solar thermal simulation and applications in greenhouse. *Information Processing in Agriculture*, 5(1), 83–113. <https://doi.org/10.1016/j.inpa.2017.10.003>
- Tanaka, H. (2011). Solar thermal collector augmented by flat plate booster reflector: Optimum inclination of collector and reflector. *Applied Energy*, 88(4), 1395–1404. <https://doi.org/10.1016/j.apenergy.2010.10.032>
- Tanaka, H. (2015a). Theoretical analysis of solar thermal collector and flat plate bottom reflector with a gap between them. *Energy Reports*, 1(April), 80–88. <https://doi.org/10.1016/j.egyr.2014.10.004>
- Tanaka, H. (2015b). Tilted Wick Solar Still with Flat Plate Bottom Reflector: Numerical Analysis for a Case with a Gap Between Them. *Journal of Fundamentals of Renewable Energy and Applications*, 05(04). <https://doi.org/10.4172/2090-4541.1000175>
- Tawfik, M. A., Sagade, A. A., Palma-Behnke, R., El-Shal, H. M., & Abd Allah, W. E. (2021). Solar cooker with tracking-type bottom reflector: An experimental thermal performance evaluation of a new design. *Solar Energy*, 220(March), 295–315. <https://doi.org/10.1016/j.solener.2021.03.063>
- Terrón-Hernández, M., Peña-Cruz, M. I., Carrillo, J. G., Diego-Ayala, U., & Flores, V. (2018). Solar ray tracing analysis to determine energy availability in a CPC designed for use as a residential water heater. *Energies*, 11(2). <https://doi.org/10.3390/en11020291>
- Tsvetkov, N. A., Krivoshein, U. O., Tolstykh, A. V. yevich, Khutornoi, A. N., & Boldyryev, S. (2020). The calculation of solar energy used by hot water systems in permafrost region: An experimental case study for Yakutia. *Energy*, 210, 118577. <https://doi.org/10.1016/j.energy.2020.118577>
- Tyagi, H., Chakraborty, P. R., Powar, S., & Agarwal, A. K. (2021). New Research Directions in Solar Energy Technologies. In *Energy, Environment, and Sustainability* (pp. 3–10). https://doi.org/10.1007/978-981-16-0594-9_1
- Villa, A. R. de, Casas, J., Breen, M., & Perarnau, J. (2014). Static OD Estimation Minimizing the Relative Error and the GEH Index. *Procedia - Social and Behavioral Sciences*, 111, 810–818.

<https://doi.org/10.1016/j.sbspro.2014.01.115>

- Wang, C.-H., Padmanabhan, P., & Huang, C.-H. (2022). The impacts of the 1997 Asian financial crisis and the 2008 global financial crisis on renewable energy consumption and carbon dioxide emissions for developed and developing countries. *Heliyon*, 8(2), e08931. <https://doi.org/10.1016/j.heliyon.2022.e08931>
- Wang, H., & Zhai, Z. J. (2012). Analyzing grid independency and numerical viscosity of computational fluid dynamics for indoor environment applications. *Building and Environment*, 52, 107–118. <https://doi.org/10.1016/j.buildenv.2011.12.019>
- Wang, S., Li, M., Che, Z., Wang, S., Gu, Y., & Zhang, W. (2023). Balance interlaminar improvement and in-plane adverse impact of hexagonal semi-embedded fine Z-pin reinforced polymer composite. *Journal of Materials Research and Technology*, 22(37), 1297–1306. <https://doi.org/10.1016/j.jmrt.2022.12.009>
- Wang, Y., Kang, Z., & He, Q. (2014). Adaptive topology optimization with independent error control for separated displacement and density fields. *Computers and Structures*, 135, 50–61. <https://doi.org/10.1016/j.compstruc.2014.01.008>
- Wassie, H. M., Getie, M. Z., Alem, M. S., Kotu, T. B., & Salehdress, Z. M. (2022). Experimental investigation of the effect of reflectors on thermal performance of box type solar cooker. *Heliyon*, 8(12), e12324. <https://doi.org/10.1016/j.heliyon.2022.e12324>
- Weihing, P., Letzgus, J., Lutz, T., & Krämer, E. (2020). Progress in Hybrid RANS-LES Modelling. In Y. Hoarau, S.-H. Peng, D. Schwaborn, A. Revell, & C. Mockett (Eds.), *Notes on Numerical Fluid Mechanics and Multidisciplinary Design* (Vol. 143). Springer International Publishing. <https://doi.org/10.1007/978-3-030-27607-2>
- Yadav, D., & Banerjee, R. (2016). A review of solar thermochemical processes. *Renewable and Sustainable Energy Reviews*, 54, 497–532. <https://doi.org/10.1016/j.rser.2015.10.026>
- Yılmaz, İ. H., Mwesigye, A., & Göksu, T. T. (2020). Enhancing the overall thermal performance of a large aperture parabolic trough solar collector using wire coil inserts. *Sustainable Energy Technologies and Assessments*, 39(March). <https://doi.org/10.1016/j.seta.2020.100696>
- Yurcheko, V., Yurcheko, E., Çiydem, M., & Totuk, O. (2015). Ray tracing for optimization of compound parabolic concentrators for solar collectors of enclosed design. *Turkish Journal of Electrical Engineering & Computer Sciences*, 23, 1761–1768. <https://doi.org/10.3906/elk-1404->

- Zainulabdeen, F. S., Al-Hamdani, A. H., Karam, G. S., & Ali, J. H. (2019). Improving the performance efficiency of solar panel by using flat mirror concentrator. *AIP Conference Proceedings*, 2190(December). <https://doi.org/10.1063/1.5138540>
- Zamani, H., Moghiman, M., & Kianifar, A. (2015). Optimization of the parabolic mirror position in a solar cooker using the response surface method (RSM). *Renewable Energy*, 81, 753–759. <https://doi.org/10.1016/j.renene.2015.03.064>
- Zhang, S., Ding, A., Zou, X., Feng, B., Qiu, X., Wang, S., Zhang, S., Qian, Y., Yao, H., & Wei, Y. (2019). Simulation Analysis of a Ventilation System in a Smart Broiler Chamber Based on Computational Fluid Dynamics. *Atmosphere*, 10(6), 315. <https://doi.org/10.3390/atmos10060315>
- Zhao, X., Cao, Y., Lin, M., Zhang, H., & Yang, Y. (2018). Adaptive mesh method applied to the thermal hydraulic program of system code with a judging criterion based on the matrix error. *Annals of Nuclear Energy*, 120, 723–734. <https://doi.org/10.1016/j.anucene.2018.06.040>
- Zhu, G., Wendelin, T., Wagner, M. J., & Kutscher, C. (2014). History, current state, and future of linear Fresnel concentrating solar collectors. *Solar Energy*, 103, 639–652. <https://doi.org/10.1016/j.solener.2013.05.021>
- Zhu, J., & Huang, H. (2014). Design and thermal performances of Semi-Parabolic Linear Fresnel Reflector solar concentration collector. *Energy Conversion and Management*, 77, 733–737. <https://doi.org/10.1016/j.enconman.2013.10.015>
- Zhu, Y., Shi, J., Li, Y., Wang, L., Huang, Q., & Xu, G. (2017). Design and thermal performances of a scalable linear Fresnel reflector solar system. *Energy Conversion and Management*, 146, 174–181. <https://doi.org/10.1016/j.enconman.2017.05.031>