

- [4] Deshpande, Rashmi. (2021). Advances in Solar Cell Technology: An Overview. *Journal of Scientific Research*. 65. 72-75. 10.37398/JSR.2021.650214.
- [5] Bhuwan Pratap Singh, Sunil Kumar Goyal, Prakash Kumar, Solar PV cell materials and technologies: Analyzing the recent developments, *Materials Today: Proceedings*, Volume 43, Part 5, 2021, Pages 2843-2849, ISSN 2214-7853, <https://doi.org/10.1016/j.matpr.2021.01.003>.
- [6] Nguyen, X.H., Nguyen, M.P. Mathematical modeling of photovoltaic cell/module/arrays with tags in Matlab/Simulink. *Environ Syst Res* 4, 24 (2015). <https://doi.org/10.1186/s40068-015-0047-9>
- [7] Banu, Ioan & Istrate, Marcel. (2012). Modeling and simulation of photovoltaic arrays. *Buletinul AGIR, World Energy Systems. Towards Sustainable and Integrated Energy Systems - Proceedings of the 9th International World Energy System Conference (WESC2012)*, June 28-30, 2012, Suceava, Romania. 161-166.
- [8] Mohammed S. Benghanem, Saleh N. Alamri, Modeling of photovoltaic module and experimental determination of serial resistance, *Journal of Taibah University for Science*, Volume 2, 2009, Pages 94-105, ISSN 1658-3655, [https://doi.org/10.1016/S1658-3655\(12\)60012-0](https://doi.org/10.1016/S1658-3655(12)60012-0).
- [9] M. G. Villalva, J. R. Gazoli and E. R. Filho, "Comprehensive Approach to Modeling and Simulation of Photovoltaic Arrays," in *IEEE Transactions on Power Electronics*, vol. 24, no. 5, pp. 1198-1208, May 2009, doi: 10.1109/TPEL.2009.2013862.
- [10] D. Revati, E. Natarajan, I-V and P-V characteristics analysis of a photovoltaic module by different methods using Matlab software, *Materials Today: Proceedings*, Volume 33, Part 1, 2020, Pages 261-269, ISSN 2214-7853, <https://doi.org/10.1016/j.matpr.2020.04.043>.
- [11] A. Zegaoui, P. Petit, M. Aillerie, J.P. Sawicki, A.W. Belarbi, M.D. Krachai, J.P. Charles, "Photovoltaic Cell/Panel/Array Characterizations and Modeling Considering Both Reverse and Direct Modes", *Energy Procedia*, Volume 6, 2011, Pages 695-703, ISSN 1876-6102, <https://doi.org/10.1016/j.egypro.2011.05.079>.
- [12] R. Chenni, M. Makhoulouf, T. Kerbache, A. Bouzid, A detailed modeling method for photovoltaic cells, *Energy*, Volume 32, Issue 9, 2007, Pages 1724-1730, ISSN 0360-5442, <https://doi.org/10.1016/j.energy.2006.12.006>.
- [13] N. M. A. Alrahim Shannan, N. Z. Yahaya and B. Singh, "Single-diode model and two-diode model of PV modules: A comparison," 2013 IEEE International Conference on Control System, Computing and Engineering, Penang, Malaysia, 2013, pp. 210-214, doi: 10.1109/ICCSCCE.2013.6719960.
- [14] Habbati Bellia, Ramdani Youcef, Moulay Fatima, A detailed modeling of photovoltaic module using MATLAB, *NRIAG Journal of Astronomy and Geophysics*, Volume 3, Issue 1, 2014, Pages 53-61, ISSN 2090-9977, <https://doi.org/10.1016/j.nrjag.2014.04.001>.
- [15] <https://www.nrel.gov/research>
- [16] <https://www.energy.gov>