













- [28] D. Kolantla, S. Mikkili, S. R. Pendem, and A. Desai, "Critical review on various inverter topologies for PV system architectures," *IET Renew. Power Gener.*, 2020.
- [29] M. R. Maghami, H. Hizam, C. Gomes, M. A. Radzi, M. I. Rezadad, and S. Hajighorbani, "Power loss due to soiling on solar panel: A review," *Renew. Sustain. Energy Rev.*, vol. 59, pp. 1307–1316, 2016.
- [30] A. A. Abbood, M. A. Salih, and A. Y. Mohammed, "Modeling and simulation of 1mw grid connected photovoltaic system in Karbala city," *Int. J. Energy Environ.*, vol. 9, no. 2, pp. 153–168, 2018.
- [31] G. Cipriani, V. Di Dio, A. Marcotulli, and R. Miceli, "Manufacturing tolerances effects on PV array energy production," in *2014 International Conference on Renewable Energy Research and Application (ICRERA)*, 2014, pp. 952–957.
- [32] F. A. Ali, "Optimum Tilt Angle of Photovoltaic Panels for Some Iraq Cities," *J. Univ. Babylon Eng. Sci.*, vol. 26, no. 1, pp. 155–163, 2018.