

- f) **J.H. Shazly, A.Z. Hafez, E.T. El Shenawy, M.B. Eteiba, “Simulation, design and thermal analysis of a solar Stirling engine using MATLAB”, ELSEVIER, Energy Conversion and Management 79 (2014) 626-639.**

This paper presents the modeling and simulation for a prototype of the solar-powered Stirling engine working at the low temperature range. A mathematical model for the thermal analysis of the solarpowered low temperature Stirling engine with heat transfer is developed using Matlab program. The model takes into consideration the effect of the absorber temperature on the thermal analysis like as radiation and convection heat transfer between the absorber and the working fluid as well as radiation and convection heat transfer between the lower temperature plate and the working fluid. Hence, the present analysis provides a theoretical guidance for designing and operating of the solar-powered low temperature Stirling engine system, as well as estimating output power from the solar Stirling engine using Matlab program. This study attempts to demonstrate the potential of the low temperature Stirling engine as an option for the prime movers for Photovoltaic tracking systems. The heat source temperature is 40–60 °C as the temperature available from the sun directly.