

Highlights

Estimation of parameters for solar cells with S-shaped current–voltage characteristics using meta-heuristic algorithms

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- 14 meta-heuristic algorithms are applied to parameter estimation from S-shaped IV curves.
- The algorithms' efficiencies are compared by using nonparametric statistic methods.
- The relevance of using the square error fitness function has been demonstrated.
- STLBO and ADELI feature the superior performance in identifying parameters of opposed two-diode model.