

ABSTRACT:

This paper presents an application of the imperialist competitive algorithm (ICA) in optimization of composite structures design. The recently introduced algorithm has proven its excellent capabilities, such as faster convergence and better global optimum achievement. In this paper, imperialist competitive algorithm (ICA) is used to demonstrate its application in finding the optimal design of laminated composite structures due to the various failure criteria. The proposed method can be used in various multi-objective optimization problems. The effectiveness of the proposed method, in comparison to Genetic Algorithm (GA), is proven through solving several examples of composite structure problems.