عنوان مقاله:

A New Approach in Genetic Algorithm for Shape Optimization ofWind Turbine Blade in Inverse Design Mode

محل انتشار:

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خلاصه مقاله:

A new method was proposed to optimize the NACA four digit series thin airfoils for use in wind turbine rotors. It is a common practice in the classic methods based on the genetic algorithms for airfoil shape optimizations, to use the computational fluid dynamics solvers. The main disadvantage of this method is the considerable running time for these algorithms. This disadvantage was significantly reduced using the new technique. Comparing the results of the proposed algorithm with the classic ones approves its higher performance and lower computation time. Another advantage of this method is the reduced number of the design variables needed for optimization by inverse design method. The proposed modifications on the genetic algorithm offer a higher performance wind turbine blade sections faster than classic genetic algorithms

کلمات کلیدی:

Intelligent Genetic Algorithm Thin airfoil Theory airfoil Optimization Inverse Design Method