World Academy of Science, Engineering and Technology
International Journal of Environmental and Ecological Engineering
Vol:11, No:08, 2017

Aerodynamics of Nature Inspired Turbine Blade Using Computational Simulation

Authors : Seung Ki Lee, Richard Kyung

Abstract : In the airfoil analysis, as the camber is greater, the minimal angle of attack causing the stall and maximum lift force increases. The shape of the turbine blades is similar to the shape of the wings of planes. After major wars, many remarkable blade shapes are made through researches about optimal blade shape. The blade shapes developed by National Advisory Committee for Aeronautics, NACA, is well known. In this paper, using computational and numerical analysis, the NACA airfoils are analyzed. This research shows that the blades vary with their thickness, which thinner blades are expected to be better. There is no significant difference of coefficient of lift due to the difference in thickness, but the coefficient of drag increases as the thickness increases.

Keywords : blades, drag force, national advisory committee for aeronautics airfoils, turbine
Conference Title : ICEEET 2017 : International Conference on Ecological Engineering and Environmental Technology
Conference Location : New York, United States
Conference Dates : August 07-08, 2017