

Profiles of blades and paddles for turbines with geometric design inspired by nature

Abstract

Exploitation of the main renewable energy sources (hydraulic, wind and solar radiation) in different installations involves the use of considerable surfaces, whether they are located on land or on water, having a negative impact on the environment. With the aim to dispose this deficiency, an installation that captures and integrates the three renewable resources has been proposed and patented. Therefore, their simultaneous exploitation in order to obtain electricity has the highest efficiency per unit area. In the laboratory, an installation was built and tested that integrates all three sources of renewable energy: The movement of water currents from flowing waters, the movement of air currents and solar radiation. Improvements that have been made to this pilot installation regarding the efficiency increasing of blades will be presented in the present communication, being analyzed the performance of using the profile blades with geometry inspired by nature.