

عنوان مقاله:

Particle Image Velocimetry Investigation of the Flow for the Curved Type Wind Turbine Shroud

محل انتشار:

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خلاصه مقاله:

Determining the flow structure in the flanged diffuser shrouding designed to be used for a wind turbine, plays a vital role in improving efficiency in small-scale wind turbine technology. In this study, the flow structure in the curved type flanged diffuser was investigated in terms of water flow velocity increase, by using particle image velocimetry (PIV) measurements. The dimensionless magnitude of the resultant velocity determined at downstream and up radial regions as well as at the flange downstream of the curved type wind turbine shroud, revealed that resultant velocity was increased by a factor of ۱.۵. This increase of the wind velocity will result the wind energy interacting with the rotor blades to be enhanced by ۳.۳۸ times more. By the designed shrouding component to be used in micro wind turbines, it is also aimed to start the power generations in these types at a lower value of cut-in wind speed value

کلمات کلیدی:

Flow velocity enhancement, Particle image velocimetry, Wind power generation

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