

البحث الخامس

بيانات البحث رقم (5)

بحث مشترك

نوع البحث :

(مشترك مع آخرين فى نفس التخصص)

1- بيانات البحث رقم (5):

Installing new additional blades arrangement for improving Savonius rotor performance	عنوان البحث باللغة الانجليزية
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3- ملخص البحث باللغة الانجليزية:

Installing new additional blades arrangement for improving Savonius rotor performance

Savonius rotor is a vertical axis wind rotor that has a good attention due to its lower fabrication cost and receives air from any direction. In the present computational work, various arrangements will be introduced for the blades of Savonius rotor with the aim of improving the performance. Two-dimensional simulations are performed using ANSYS with the presence of the SST k-v as a suitable turbulence model to analyze the flow around the rotor. The

computational results include 12 different arrangements namely rotor 1 to rotor 12. The difference between all the studied rotors is the arrangement of an additional shape to the original blade of Savonius rotor. The addition of a flipper with a radius of curvature equivalent to 1.73 of the radius of the blade generates the best performance with an improvement of 38.5% in the power coefficient compared to the traditional rotor. The best design (known as case 1) has a pair of blades with a distance of 15% of the blade radius, which improves the performance by 28.3% compared to the traditional rotor.

4-بيانات نشر البحث رقم (5):

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Wind Engineering	اسم المجلة العلمية
https://doi.org/10.1177/0309524X241258 https://journals.sagepub.com/doi/10.1177/0309524X241258478	الموقع الالكتروني
2024	وسنة النشر