

Does a hybrid wind energy generator have a bidirectional acceleration structure?

However, the prevalent wind power generation technologies have different problems, such as small output and low conversion efficiency. Hence, in this study, we propose a high-performance hybrid wind energy generator with a bidirectional acceleration structure.

What is a bionic dolphin blade triboelectric-electromagnetic hybrid generator?

A bionic dolphin blade triboelectric-electromagnetic hybrid generator (BDB-TEHG) enhances wind energy harvesting. The BDB-TEHG generates 0.712 mW of charging power at 2 m/s wind speed, 34 times more than a conventional wind turbine.

Can a double-blade triboelectric-electromagnetic hybrid generator efficiently harvest wind energy?

However, low-speed wind energy has not been effectively explored and utilized. To this end, a double-blade structured triboelectric-electromagnetic hybrid generator (DB-TEHG) is designed in this paper, which can efficiently harvest breeze energy by using double-blade structured design to improve the aerodynamic performance of the device.

What is a triboelectric-electromagnetic hybrid generator?

Conclusions This study introduces the BDB-TEHG, a triboelectric-electromagnetic hybrid generator designed for the efficient capture of low-speed wind energy. The BDB-TEHG consists of a wind turbine, TENG, and EMG.

Vertical-axis wind driven generator with straight blades | PolyU Institutional Research Archive

Can multiphase generators meet emerging requirements of wind power generation? requirements of the modern wind power generation. Different types of the multiphase converter technologies in wind power ...

Given the intensifying scarcity of non-renewable energy sources, wind power is garnering importance across various fields. However, the prevalent wind power generation technologies have ...

Consequently, there exists a compelling need to develop efficient TENGs for capturing breeze wind energy. In this study, we present a novel blade-type triboelectric-electromagnetic hybrid generator ...

Variable cross-sectional effect on bi-directional blades-tower-soil-structure dynamic interaction on offshore wind turbine subject to wind-wave loads

The wind energy in cities cannot be exploited effectively because natural wind is unstable and complex. Therefore, a triboelectric-electromagnetic hybrid generator with swing-blade structures ...

To overcome these challenges, inspired by the dolphin's dorsal fin and tail movement, this study introduces a bionic dolphin blade triboelectric-electromagnetic hybrid generator (BDB ...

Abstract In this work, new cm-scale wind turbines for powering sensor nodes devoted to monitoring/diagnostic of railway vehicles are designed, built and tested in a wind tunnel. Two rotors, ...

In this study, we present a novel blade-type triboelectric-electromagnetic hybrid generator (BT-TEHG) constructed from blade-type TENG units and a rotating disk electro-magnetic ...

However, low-speed wind energy has not been effectively explored and utilized. To this end, a double-blade structured triboelectric-electromagnetic hybrid generator (DB-TEHG) is ...

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