Solar power generation permanent magnet coupling

Why are permanent magnet couplings used in extreme environmental conditions?
1. Introduction Permanent magnet couplings (PMC) are used extensively in extreme environmental conditions because of their capability of transmitting torque from a primary device to a secondary follower without any physical contact. This noncontact property produces less mechanical friction with auto-alignment and over-torque protection ability.

What types of magnetic couplings are used?
The types of the magnetic couplings used for this study are a radial flux-CPMC (RF-CPMC) with magnet retaining rings and a flux concentrating-CPMC (FC-CPMC) with inner and outer rotor yoke changed by retaining rings. The main criterion of the whole analysis was to find a model that is capable of ensuring a torque above 1kNm.

Can high torque coaxial permanent magnet couplings be used in tidal current generation?
The electromagnetic and electromechanical characteristics are used for comparison. Based on the installation environment and the magnet use, RF-CPMC is prototyped and tested. This paper presents design and comparative study of high torque coaxial permanent magnet couplings (CPMC) for the use in a tidal current generation (TCG) system.

Can magnetic coupling be used for tidal current generation?
Considering the effectiveness of the prototype in generating high torque,the contactless feature of the magnetic coupling provides a very promising advantageof using it for the tidal current generation system with very little maintenance.

Does a permanent magnet rotor reduce eddy current loss?
In this paper,under the background of the increasing development of rare earth resources,the energy-saving design of a permanent magnet rotor for a high-power HSPMSM of 225 kW/34000rmp is carried out,and the control mode of HSPMSM transmission is improved,which is not only reduces the eddy current lossof the rotor.

What is vector control technology of permanent magnet synchronous motors?
At present,for the vector control technology of permanent magnet synchronous motors,current controlin the rotating coordinate system can accelerate the dynamic adjustment process of the system,and the stator current of the motor can approximate the given current vector .

replace mechanical gears, which takes magnetic coupling technol-ogy one step further. Furthermore, inspired by magnetic gears, a magnetic gear-integrated permanent ...

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This paper presents a novel PID dual loop controller for a solar photovoltaic (PV) powered industrial type permanent magnet DC (PMDC) motor drive, which is modeled to ...

1 INTRODUCTION. Double rotor (DR) motors offer the potential advantages of high power density, large torque, diverse forms of power flow, and so on, which have attracted ...

Among many renewable energy sources, photovoltaic (PV) based solar plant and permanent magnetic synchronous generator (PMSG) based wind power generation ...

This makes magnetic couplings widely applicable in transmission systems, such as wind power generation units. | Solving Leakage Issues: The development of magnetic ...

Yan and Meng et al. [2, 3] established a model of wind-solar complementary power generation system, a wind-solar complementary coordinated control and grid-connected strategy is proposed, and the ...

Multiple requests from the same IP address are counted as one view. Permanent magnet eddy current couplers (PMECCs) have the characteristics of contactless torque transmission, removal of torque ripple, ...

Abstract. A modified brushed permanent magnet DC (PMDC) motor has been developed and fabricated for a photovoltaic (PV)-operated solar systems. The conventional ...

The Variable Speed Wind Generator (VSWG) with permanent magnet synchronous generator (PMSG) has become more famous in recent days due to its" ...

Based on the background hereinbefore, a novel flux-adjustable permanent magnet eddy current coupling (FA-PMECC) has been proposed in this article, and the ...

The invention and development of magnetic couplings are inseparable from the technological progress of permanent magnet materials. The first generation magnetic coupling ...

Note: Couplings are delivered with an integrated stainless steel cover to protect magnets and allow for clean operation and easy maintenance. The above images show exposed magnets ...

This study underscores the potential of axial flux PM couplings in applications requiring reliable, maintenance-free power transmission, providing a foundation for further exploration and design refinement of magnetic coupling systems. ...

Permanent magnet eddy-current coupling has the advantages of energy-saving, overload protection, allowing the larger misalignment, simple structure, long service life and so ...

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In this paper, the permanent magnet direct-drive wind turbine, photovoltaic power generation unit, battery pack, and electrolyzer are assembled in the AC bus, and the ...

Temperature rise of the tubular permanent magnet linear generator (TPMLG) might lead to insulation failure and demagnetization of permanent magnets, affecting the safe ...

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