Variable flux motor solar container

What is a variable flux memory motor (vfmm)?
Variable flux (VF) motor: variable flux memory motor (VFMM). Multiphase VF motor: combination of DTP winding and VFMM rotor. On the one hand, the DTP motor was selected among the MP motors, as it has the benefits of multiphase and three-phase motors and it is a potential candidate for EVs, as mentioned in the literature review.

What is a solarfold photovoltaic container?
The Solarfold photovoltaic container can be used anywhere and is characterized by its flexible and lightweight substructure. The semi-automatic electric drive brings the mobile photovoltaic system over a length of almost 130 meters quickly and without effort into operation in a very short time.

How can a variable flux motor be made?
Adjusting the flux linkage mechanicallyis the remaining option to obtain a variable flux motor. One way is to use externally controlled mechanical actuators,and the other is to take advantage of the centrifugal force at high speed to somehow change the flux. Different flux-weakening mechanisms are proposed in the literature.

What are the different electric motor designs implementing multiphase and variable flux technologies?
In this section, different electric motors designs implementing multiphase and variable flux technologies are compared by using FEM simulations. The considered motor designs are the following: Three-phase motor. Multiphase motor: dual three-phase motor (DTP). Variable flux (VF) motor: variable flux memory motor (VFMM).

What is a solarcontainer?
The Solarcontainer is a photovoltaic power plantthat was specially developed as a mobile power generator with collapsible PV modules as a mobile solar system,a grid-independent solution represents. Solar panels lay flat on the ground. This position ensures maximum energy harvest Panels lays flat on the ground.

What is the difference between a variable flux motor and a constant flux motor?
In the variable flux motors,this flux-weakening current requirementwas lower than in the constant flux motors,reducing copper losses to around 50%. Stator iron losses did not vary significantly,although the VF motors exhibit around 9% lower loss,probably due to the weaker magnetic fields.

This is a survey paper focusing on permanent magnet motors with variable field capability. The synchronous motors, which have been applied to ...

In this paper, a novel variable-leakage-flux interior permanent magnet (VLF-IPM) motor is proposed, which is a kind of mechanical flux ...

A new structure and control method for a variable magnetic flux motor (VMFM) is proposed to achieve a high-efficiency electric vehicle (EV) ...

This paper suggests design of variable flux motor for variable speed operation. The calculation method of electrical parameters to meet variable speed condition is suggested, and the ...

A finite element analysis is done on the two current motors of the Nuna solar car, a radial flux Mitsuba motor and an axial flux Marand motor, with the intend to find the fundamental motor parameters, the ...

In this paper, a new hybrid permanent magnet variable leakage flux (VLF-HPM) motor is proposed. In order to enhance motor speed range, ...

Abstract-- This paper presents a variable flux motor (VFM) with an adjustable rotor-stator mechanism that is designed for electromobility applications. The built-in mechanism allows for the position of the ...

This paper investigates the incorporation of multiphase (MP) and variable flux (VF) permanent magnet motors to electric vehicles (EVs). A ...

Comparison between a Series-Hybrid Variable-Flux Memory Motor and a Rare-earth Interior Permanent Magnet Synchronous Motor 2023 IEEE Energy Conversion Congress and Exposition, ECCE 2023

In this study, a novel mechanical-variable-flux interior permanent magnet motor (MVF-IPMM) is presented, which employs rotatable magnetic ...

In order to address the challenging issues of complex multilayer rotor structure, unsatisfactory flux regulation (FR) capability, and relatively limited global efficiency enhancement of ...

In one aspect, embodiments of the invention are directed to a multi-pole rotor of a variable-flux memory motor (VFMM) that includes: a rotor core; and a plurality of poles.

Compared with conventional permanent magnet synchronous motor, variable flux memory motor (VFMM) possesses the advantage of adjusting the magnetization state online.

An experimental vector controlled permanent magnet motor drive including the on-line torque compensation controller is implemented based on a TMS320C31 DSP to evaluate the method. ...

The proposed motor demonstrates a variable flux effect, allowing not only the PM flux but also the dq-axis inductance to be adjusted. This capability enables the motor to extend its speed range and shift ...

This paper proposes a variable leakage-flux intensifying-flux IPM motor (VLIF-IPMM), which improves the

efficiency and reduces the core loss in the flux weakening region, especially the ...

This presentation analyzes the electromagnetic simulation of a 27 slot 6 pole variable flux machine (VFM) using the JMAG software. The VFM uses AlNiCo9 magnets in which the magnetization level can ...

This paper presents a novel variable flux motor with separately excited field winding. To reduce the copper loss caused by weakening current especially in high speed condition, field winding is included ...

Disclosed therein is variable magnetic flux motor, which includes a rotor and a stator located inside the rotor. The rotor includes a rotor housing, a plurality of unit rotor cores and magnets which are ...

This article proposes a novel variable-flux spoke-type permanent magnet synchronous motor (VFS-PMSM), whose air gap flux density can be adjusted by "swiveling" magnetic pole ...

Among some motors having permanent magnets in consideration of such a problem, a so-called variable flux motor having a fixed magnet in which magnetic flux of a permanent magnet of a rotor ...

The Solarfold photovoltaic container can be used anywhere and is characterized by its flexible and lightweight substructure. The semi-automatic electric drive brings ...

The finite-element method incorporating with a hysteresis model has been used to analyze the variation characteristics of flux density of permanent magnets (PM) in the variable flux memory motor ...

Variable-flux interior permanent magnet synchronous motors (VFIPMSMs) find growing attention for electrified transportation applications, especially in the area of electric vehicles.

Permanent magnet motors are widely utilized in various industries due to their high efficiency and superior torque characteristics. However, these motors exhibi

Variable flux motors with adjustable magnetic flux have been gaining attention because of their capability to simultaneously achieve a high torque density and high efficiency. In addition, the ...

Variable flux memory motors (VFMMs) are a relatively new class of machine that affords one the ability to actively change a motor from a high torque/low speed device into a low ...

I. Introduction Variable flux memory machines (VFMMs) [1]-[2] employ the low-coercive-force (LCF) PMs to achieve precise adjustment of air ...

Variable flux motor energy storage What are variable flux memory Motors (vfmms)? Abstract: Variable flux memory motors (VFMMs) are a relatively new class of machine that affords one the ability to ...

The use of several modules to increase the solar yield offers flexible scaling of the system,which can also be combined with battery systems and other energy storage systems.

Variable flux memory motors (VFMMs) are a relatively new class of machine that affords one the ability to actively change a motor from a high torque/low speed device into a low torque/high ...

Solar PV (Photovoltaic) powered pumping has increased in popularity around the world thanks to the capabilities of variable frequency drives (VFDs). Typical ...

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