

[SS 1] energy and generator

Results in EPODOC 103.349

[SS 2] converter and inverter

Results in EPODOC 22.778

[SS 3] 1 and 2

Results in EPODOC 582

[SS 4] 3 and inductor

Results in EPODOC 18

[SS 5] 4 and renewable

Results in EPODOC 0

[SS 6] 4 and AC

Results in EPODOC 5

[SS 7] ..li



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PN	- CN203761056U U 20140806
PR	- CN20132516180U 20130822
AP	- CN20132516180U 20130822
DT	- I
CCA	- Y02E70/30 ; Y02E10/766
PA	- STATE GRID CORP CHINA; JINING POWER SUPPLY CO OF SHANDONG ELECTRIC POWER GROUP CO
TI	- Cell energy storage-based wind driven electric generator electric energy quality controller
AB	- The utility model discloses an cell energy storage-based wind driven electric generator electric energy quality controller. The electric energy quality controller comprises an inverter I and an inverter II that are connected in parallel, wherein the inverter I and the three-phase AC (alternating current) side of the inverter I are connected to the three-phase line inlet end of a power network in parallel through a filtering electric inductor and a contactor in sequence, and the inverter I and the DC side of the inverter II are connected to a DC bus; the electric energy quality controller further comprises energy storage battery groups connected at the two sides of the inverter II in parallel, a bidirectional DC/DC converter and a control circuit. A control method is also disclosed. The electric energy quality controller and the control method are characterized in that output power fluctuation and harmonic waves of a wind driven generator are independently compensated, and the quality of electric energy output by the wind driven generator is accurately controlled; through adoption of the DC (direct current) bus, energy storage batteries are shared to reduce battery capacity redundancy, and the energy output fluctuation of the wind driven generator is controlled and stabilized and suppressed through PI; meanwhile, the charge and discharge of the battery groups are controlled, and the response speed is high.

PN - [CN103475014](#) A 20131225

PNFP - CN103475014B B 20150401

PR - CN20131370117 20130822

AP - CN20131370117 20130822

DT - I

CT - || STSE (A)
[CN102709945](#) A 20121003 [A] (KAI HU)
[A] 1-9
* 全文 *;
[CN202616801U](#) U 20121219 [A] (UNIV SOUTHEAST)
[A] 1-9
* 全文 *;
[CN102355008](#) A 20120215 [A] (AUTO CONTROL TECHNOLOGY INST OF SHENYANG UNIVERSITY OF TECHNOLOGY)
[A] 1-9
* 全文 *;
[US2010023174](#) A1 20100128 [A] (NAGATA SATOSHI [JP], et al)
[A] 1-9
* 全文 *;
[EP2381554](#) A1 20111026 [A] (JAPAN WIND DEV CORP LTD [JP], et al)
[A] 1-9
* 全文 *;
[CN203761056U](#) U 20140806 [R] (STATE GRID CORP CHINA, et al)
[R] 5
* 权利要求1 *;
[CN102231527](#) A 20111102 [A] (UNIV CHONGQING)
[A] 1-9
* 全文 *;
[CN102624030](#) A 20120801 [A] (UNIV SOUTHEAST)
[A] 1-9
* 全文 *

CTNP - || STSE (A)
[A] - 邱培春等, "基于蓄电池储能的光伏并网发电功率平抑控制研究", 《电力系统保护与控制》, no. 03
[A] 1-9
* 第29-33页 *

CCA - [Y02E70/30](#) ; [Y02E10/766](#)

PA - (A)
STATE GRID CORP CHINA; JINING POWER SUPPLY CO OF SHANDONG ELECTRIC POWER GROUP CO
(B)
STATE GRID CORP CHINA; JINING POWER SUPPLY CO OF SHANDONG ELECTRIC POWER

TI - (A B)
Electric **energy** quality controller of wind driven **generator** based on battery **energy** storage and control method

AB - (A)
The invention discloses an electric **energy** quality controller of a wind driven **generator** based on battery **energy** storage. The electric **energy** quality controller comprises an **inverter** I and an **inverter** II, which are connected in parallel, wherein the **inverter** I and the three-phase **AC** (alternating current) side of the **inverter** I are connected to the three-phase line end of a power network in parallel through a filter **inductor** and a contactor in sequence, and the **inverter** I and the DC side of the **inverter** II are connected to a DC bus; the electric **energy** quality controller further comprises **energy** storage batteries connected at the two sides of the **inverter** II in parallel, a bidirectional DC/DC **converter** and a control circuit, the invention further discloses a control method, and the output power fluctuation and harmonic wave of the wind driven **generator** are independently compensated to accurately control the electric **energy** quality output by the wind driven **generator**; and by adopting the DC

(direct current) bus, the **energy** storage batteries are shared to reduce the battery capacity redundancy, the **energy** output fluctuation of the wind driven **generator** is controlled and stabilized through PI, and meanwhile, the charge and discharge of the battery pack are controlled and the response speed is high.

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PN	- GB2511490 A 20140910
PNFP	- GB2511490 B 20160203
PR	- GB20130002092 20130206
AP	- GB20130002092 20130206
DT	- **
CT	- STSE (A) WO2009150464 A1 20091217 [] (MCMAHON RICHARD ANTHONY [GB], et al) US2010292852 A1 20101118 [] (GERTMAR LARS [SE], et al) - STSE (B) WO2009150464 A1 20091217 [] (WIND TECHNOLOGIES LTD [GB], et al) US2013155731 A1 20130620 [] (REICHARD JEFFREY A [US], et al) US2012218789 A1 20120830 [] (LANGHORST PHILLIP GERARD [US]) US2010292852 A1 20101118 [] (GERTMAR LARS [SE], et al)
CCI	- H02J3/1885 ; H02P9/08
CUI	- H02M7/42
CNOI	- (A B) H02J3/1821 ; H02J3/40
CCA	- Y02E40/32
PA	- (A B) CONTROL TECH LTD [GB]
TI	- (A B) Electrical Generator
AB	- (A) An inverter (DC-AC converter) 12 draws power from an electrical energy network 14 to run a motor/ generator machine 10 as a motor, and when the machine 10 is run as a generator , provides reactive power to the network 14 in parallel with the generated power. A filter 30, which may include an inductor 32, may connect between the inverter 12 and the network 14. The motor/ generator 10 can connect directly to the network 14 via a bypass 22, without passing through the inverter 12. The machine 10 may be an asynchronous machine. Also provided is an inverter 12 with a control means 38 and first and second voltage sensing means 24, 26 which monitor the input voltage and the output voltage of the inverter 12 respectively, and a switch 16 connecting the output of the inverter 12 according to the measured voltages. The inverter 12 may be bypassed, which may occur when the sensed voltages are substantially the same. The voltage sensing means 24, 26 may be voltage to digital converters.

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PN	- JPS5666195 A 19810604
PR	- JP19790141679 19791031
AP	- JP19790141679 19791031
DT	- I
FI	- H02P103/10; H02P21/05; H02P23/00; H02P23/04; H02P23/07; H02P27/05; H02P7/635&A; H02P9/00&C
FT	- 5H505/BB02; 5H505/BB04; 5H505/BB05; 5H505/DD03; 5H505/DD05; 5H505/DD20; 5H505/EE27; 5H505/FF08; 5H505/GG07; 5H505/HA03; 5H505/HA11; 5H505/HA16; 5H505/HA20; 5H505/PP02; 5H575/BB02; 5H575/BB04; 5H575/BB05; 5H575/DD03; 5H575/DD05; 5H575/DD10; 5H575/FF08; 5H575/GG07; 5H575/HA03; 5H575/HA11; 5H575/HA16; 5H575/HA20; 5H575/HB07; 5H575/PP02; 5H590/AA02; 5H590/AA17; 5H590/CC10; 5H590/CC34; 5H590/CC40; 5H590/CD03; 5H590/CE01; 5H590/DD41;

	5H590/FA08; 5H590/FB05; 5H590/FC15
PA	- SHINKO ELECTRIC CO LTD
TI	- CONTROLLER FOR SECONDARY COIL MULTIPLEX INDUCTION GENERATOR
AB	- PURPOSE:To reduce torque pulsation factor and raise efficiency by improving secondary current waveform with a converter and a DC reactor connected to the multiplexed secondary coils of a a coil type inductor . CONSTITUTION:On two secondary windings being wound on the same rotor and are insulated with a shifting by $\pi/6$ in an electric angle, converters 7, 8 and DC reactors 9, 10 are connected, while the ouput side of each DC reactors are connected collectively to a separately excited inverter 11, and the AC side of the separately excited inverter is connected to the primary side of an induction machine 12. Accordingly, for a thyristor Scherbius motor mode operation, the rotational frequency f_n of a rotor is lower than power supply frequency f_0 , secondary generation energy corresponding to slip frequency is fed back to power supply side, said controller comes to have a correspondingly higher efficiency than a conventional control type systems, feedback current waveform is improved and the pulsation torque of the motor is reduced.

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PN	- JPH11313490 A 19991109
PNFP	- JP3678582B B2 20050803
PR	- JP19980118706 19980428
AP	- JP19980118706 19980428
DT	- I
FI	- H02M7/797
FT	- 5H007/AA02; 5H007/AA06; 5H007/BB01; 5H007/BB06; 5H007/CA01; 5H007/CB05; 5H007/CC01; 5H007/CD06; 5H007/DA06; 5H007/EA13; 5H007/FA01; 5H007/FA12; 5H770/AA05; 5H770/BA01; 5H770/CA02; 5H770/CA06; 5H770/DA01; 5H770/DA03; 5H770/DA10; 5H770/DA41; 5H770/EA15; 5H770/GA19; 5H770/HA03W; 5H770/JA17W; 5H770/KA01W; 5H770/LA01W; 5H770/LA08W
PA	- (A) SHIZUKI ELECTRIC CO INC
TI	- (A) POWER CONVERTER AND ITS ADDITIONAL DEVICE FOR REGENERATION
AB	- (A) PROBLEM TO BE SOLVED: To provide a power converter which has such high versatility that the converter can control the variable speed drive of an induction motor by using AC power, and at the same time, is able to regenerate and utilize the energy of the rotational inertia of the induction motor without taking such a complicated expensive countermeasures as that taken against inductive interference waves, etc. SOLUTION: When a power converter makes power running, a switch 10 selects a contact 1 and an inverter circuit 6 rotationally drives an induction motor 7 by converting the summed voltage of the voltage from a bridge rectifier 2 and that from a capacitor 8 into an DC voltage as a DC input voltage. Consequently, the charge stored in the capacitor 8 are discharged. At the regeneration, the switch 10 selects another contact 2 and the inverter circuit 6 charges the capacitor 8 by converting the alternating current from the inductor motor 7, which operates as a generator into a direct current.