

TITLE: ELECTROMAGNETIC ENERGY-FLUX REACTOR

BACKGROUND OF THE INVENTION

Field of invention

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The present invention relates to a regenerative **electromagnetic energy-flux reactor (EER)** of high energy efficiency output utilizing alternating current source as excitation to create electromagnetic interaction into the reactor assembly to regenerate electromagnetic energy induced by the reactive coil to the regenerative coils, tuned by an electrical loads directly connected to the output of the collector coils. Maximum loading of the collector coils shall be with reference to the ratio of reactive to regenerative coils. The collector coils can be automatically tuned by a separate and distinct reactive reactor coil assembly (connected to one of the output of the reactive coils of the main assembly) for stable performance and maximum energy regeneration at the regenerative coils.

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Description of the Prior Art

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The above listed patent describes and pertains to a technology where efficiency of the system are being enhanced or corrected to attain the desire maximization or energy conservation which totally differentiate this present technology which is the subject of this patent application. This EER (Electromagnetic Energy-flux Reactor) pertains to a technology that utilizes magnetism (permanent or electromagnetism) and varying magnetic fields to harness and harvest electromagnetic waves from the ambient sources to develop magnetic and electric fields which is responsible for the generation of “Electricity.”

15 Definition of Electricity

To begin with, it will be useful to define and explain electricity and how it is being produced and harnessed.

“Electricity is defined as the electrical reaction of Atoms under heat or pressure and the resulting flow of electrical energy thru pathways of electrical resistance.”

Electricity is not a substance and cannot be depleted nor can
5 man create or destroyed it. However, it can be harnessed in
several ways. AC electricity maybe of low or high voltage
depending on the electrical systems or whatever network
configurations may require. It can be a combination of both high
and low voltage systems as in a system of generation,
10 transmission and distribution. This complex set-up employs a
transformer to step up voltage from the generation to the
transmission side; step down the voltage from the transmission
to the distribution side and finally step down from the
distribution to the end user side. These transformation cycles of
15 voltages and currents reduce the efficiency of the generation
system due to the losses incurred during the process caused by
the inherent impedances of various components in the system.

Objectives

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The **primary objective** of this invention is to deliver higher
energy output efficiency in conjunction with an alternating
current source.

The **second objective** is to deliver energy conservation
25 measures to all alternating current loads in nature and maximize
the efficiency of the source.

The **third objective** is to make feasible the use of renewable
energy which as of today are not being fully utilized due to

reason of too costly to implement, a limitation on location and a limitation of space.

The fourth objective is to enhance the performance power delivery system.

- 5 The fifth objective is to help the reduction of emission of ozone depleting substance in the atmosphere.

SUMMARY OF THE INVENTION

As explained earlier, EER is an assembly of one or more
10 microprocessor-based power module (MPM), a single, two stage
or more reactor system (RS) comprising of three (3) or more
coils, a microprocessor-based control board (MCB) and a Hall
Effect current sensors (HECS). The increase efficiency of the
output is governed by the electrical load that is connected to
15 the reactive coil assembly directly coupled or via a
compensating reactor which regulates the voltage output of the
EER. The emf and current that flows on the reactive coils
inducts **electromagnetic energy** on the regenerative coil that
produces magnetic fields on the reactor core opposite to the
20 magnetic fields developed by the regenerative coil itself, (when
excited by an excitation source). The opposing magnetic fields
in the regenerative circuits exerted pressure on the atoms in the
system to be in coherent state with one another. The coherent
state of the atoms results in the continuous exchange of
25 electrons flow between atoms by way of magnetic induction in
the reactor system. Since electrons can hardly flow in the
atmosphere due to high resistance of different kind of gases,
they will be attracted to flow on the surface of conductors of

less resistance.

In EER the conductor of least resistance is the regenerative and reactive coils that will cause the electron to be attracted to this conductor giving rise to higher power output efficiency. As the
5 electrical loads on the reactive circuits are increased, the magnitude of the **electromagnetic energy** in the regenerative circuits increases proportionally and the efficiency of the output delivered to electrical loads also increase.

A resultant increase in the electrical load capacity of the
10 collector coil is also attained. The collector coils shall be loaded separately but shall be tuned according to the transformation ratio of reactive and regenerative coils. Further, the collector coils can be also excited by a **distinct reactive reactor independent of the main reactor** and connected in one of the
15 output reactive coils of the main reactor assembly for auto tuning.

The HECS monitors the operating parameters of the reactor and activate and deactivate the system when it is within or beyond preset operating parameters. During the deactivation process
20 the system will shift automatically to bypass mode. It has to be noted that the maximum loading capacity of the reactive, regenerative and collector circuit is limited by the design ratio and ampacity rating of the conductor coils.

To maximize design output ratio efficiency, a second stage
25 reactor is integrated to regulate the desired voltage output for the electrical load. A minimum of two reactive coils maybe used to provide high intensity electromagnetic energy induction to the regenerative coils. The magnetic core of the EER shall be

made of thin film materials. Preferably the reactor system magnetic core shall be made of high grade silicon steel sheets grain oriented. The thickness of the plate of the grain oriented silicon steel sheets shall be of the thinnest available production size for better performance and efficiency. The stacking depth of the core area shall be of the maximum, based on design calculation to maximize the Casimir effect on the silicon laminated thin sheets. Copper conductor shall be 99.99% oxygen free and wound on the core for reactive, regenerative and collector coil. The reactive, regenerative and collector coil shall be wound separately with each other and altogether per leg of each reactor core. **Reactive, regenerative and collector** coil shall be of rectangular or round cross section copper magnet wire 99.9% oxygen free. The MPM and the MCM shall able to withstand a temperature rise of 65 degrees C. The construction of the reactor core shall be of the two legged R type core. The three legged shall be R type core also.

BRIEF DESCRIPTION OF THE DRAWING

Fig. 1 is the block diagram of an **Electromagnetic Energy-Flux Reactor** assembly embodying the present invention; Fig. 2 is the
5 circuit diagram of the integrated Microprocessor-based power Module (MPM 1 & 2), first and second stage reactor (R1 & R2), with independent tuning reactive reactor and Microprocessor-based Control Module (MCM), single phase, two stage Reactor assembly. Fig. 3 is the circuit diagram of the integrated
10 Microprocessor-based power Module (MPM 1), first stage reactor (R1) and Microprocessor-based Control Module (MCM), independent tuning reactive reactor single phase, single stage reactor assembly.

Fig. 4 is the circuit diagram of the integrated Microprocessor-based Module (MPM 1& 2), first and second stage reactor
15 based Module (MPM 1& 2), first and second stage reactor compose of three sets per Stage (R1, R2, R3, R4, R5&R6) and a Microprocessor-based Control Module (MCM) three phase, three phase independent reactive reactor, two stage reactor assembly. Fig. 5 is the circuit diagram of the integrated
20 Microprocessor-based Module (MPM 1), first stage reactor compose of three sets per Stage (R1, R2&R3) and a Microprocessor-based Control Module (MCM) three phase, single phase independent reactive reactor, single stage reactor assembly. Fig. 6 is an assembly of reactor showing how the
25 reactive, regenerative, and collector coil are wound on a R type of core. The direction of the magnetic fields are also shown with respect both to their current develop in the regenerative coils. Fig. 7 is an alternative method of rewinding the reactive,

regenerative and collector coils.

Fig. 8 is an alternative method of rewinding the reactive, regenerative, and collector coil on a toroidal core assembly.

5 DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

Fig. 1 is a block diagram embodying the present invention comprising an exciter source 1, which excites the reactor 32 and 33 that serve as the source of power for the microprocessor-based power module 2 and 18, microprocessor- base control module 6 and at bypass mode. The microprocessor-base power module 2 and 18 drive the control circuit of the auxiliary switching module 24 and 23 as indicated in Fig. 4. These microprocessor-based power module 2 and 18 are controlled and actuated by the microprocessor-based control module 6 receiving signal from the Hall Effect current sensor 11. Fig.2, the exciter source 1 supplies the power requirement of the microprocessor- based power module 2 and 18 and the microprocessor-based control module 6. At zero electrical load at terminal 15, the Hall Effect current sensor 11 senses zero current and send a signal to the microprocessor- based control module 6. The microprocessor-base control module 6 will process the signal and actuate, relay the process signal to microprocessor-base power module 2 & 18 via control cable 8 and 10 as in Fig. 2. The microprocessor-based power module 2 and 18 will deactivate the reactor 32 and 33. In Fig.4, the exciter source 1 supplies power to the microprocessor-based power module 2 and 18 and the microprocessor-base control

module 6. At zero electrical load at the terminal 15, 16, and 19 the Hall Effect current sensor 11 senses zero current and sends a signal to the microprocessor-based control module 6. The microprocessor-based control module 6 will process the signal and actuate, relay the process signal to the microprocessor-based power module 2 and 18. The microprocessor-base power module 2 and 18 will process the receive signal and activate the auxiliary switching module 24 and 23. The auxiliary switching module 24 and 23 will deactivate reactors 32 and 33. Upon switching a load on terminal 15 as in the case of Fig. 2 and terminal 15, 16 and 19 as in the case of Fig.4, the Hall Effect current sensor 11 will send the signal to the microprocessor-base control module 6. The microprocessor-base control module 6 will receive and process the signal sent by Hall Effect current sensor 11. If the signal sent by the Hall Effect current sensor 11 is equal or above the preset minimum current triggering signal, the microprocessor-based control module 6 will relay the process signal to the microprocessor-based power module 2 and 18. In Fig. 2 the microprocessor-based power module will activate reactors 32 and 33. In Fig. 4 the microprocessor-based power module 2 and 18 will relay the processed signal to the auxiliary switching modules 24 and 23. The auxiliary switching module 24 and 23 will deactivate the bypass mode and at the same time activate reactors 32 & 33. When reactors 32 and 33 are energized, an electromagnetic energy and magnetic fields of opposite direction and an exciting current 27 that creates the counter opposing fields 28 are developed at the regenerative circuit 4 (as in Fig. 2) 4A, 4B and 4C (as in Fig.

4). Almost at the same time a current flow at regenerative coil 3 (as in Fig. 2) and 3A, 3B and 3C (as in Fig. 4) develop a feedback current 29 and a counter opposing magnetic field 30 (as shown in Fig. 6) to the regenerative coil 4 (as in Fig. 2) and 4A, 4B and 4C (as in Fig. 4) directly in opposition to the magnetic fields 28. Both the exciting current 27 and feedback current 29 (as shown in Figure 6), in Fig. 2 and Fig. 4 are in collision thus pressuring the atoms in the system to be cohesive with one another. The cohesion state of the atoms gives rise to the exchange of electron between atoms resulting in the continuous flow of electrons in the regenerative circuit and dissipated to the electrical loads. Since electrons can hardly flow in space due to the high resistance of the gases in the atmosphere, it will be attracted to a path of less resistance. In the **Electromagnetic Energy-flux Reactor** the reactive coil 3 and the regenerative coil 4 (as in Fig. 2), and the reactive coil 3A, 3B and 3C and the regenerative coil 4A, 4B and 4C (as in Fig. 4) is the electrical path of less resistance and electrons will be attracted to their conductor coils. As long as the exciter source 1 continuously supplies the needed excitation voltage and current, the cohesion of atoms through magnetic induction will continue. The collector coil 5 (as in Fig.2) and 5A, 5B and 5C (as in Fig. 4) will be electrically loaded to increase the intensity of the counter opposing magnetic fields 28 in the regenerative coil 4 (as in Fig. 2) and 4A, 4B and 4C (as in Fig.4) as the regenerative coil 3 (as in Fig. 2) and 3A, 3B and 3C (as in Fig. 4). This is to maintain or increase the atom cohesive strength developed in the reactor system.

The microprocessor-based power module 18, control and adjusts the ratio of reactor 33 with respect to regenerative coil 12 with 13 (as in Fig. 2) and regenerative coil 12A, 12B, 12C with 13A, 13B, 13C (as in Fig. 4) via the auxiliary switching module 23, to regulate the voltage output at terminal 15, 16 and 17 (as in Fig. 2) and 15, 16, 19, 20, 21 and 22 (as in Fig. 4). The single phase output for Fig. 2 line to line are terminals 15 and 16, line to ground are terminals 15 and 35, 16 and 35 and 17 and 35. The three phased output terminals for Fig. 4 are 15, 16, 19 respectively and 20, 21, 22 respectively. The collector coil 14 (as in Fig. 2) and the 14A, 14B, and 14C as (in Fig. 4) are utilized to maximize the output load of the magnetic induction atoms cohesion reactor system. A separate and distinct reactive reactor coil assembly can be introduced to excite the collector coils for self tuning instead of loading it with electrical loads. This reactive reactor coil assembly is connected at one of the output of the main reactor reactive coil.

CLAIMS

1. A system for providing power to a load, comprising:

a first reactor comprising a first coil configured to generate a first magnetic field and
 5 at least one second coil configured to generate a plurality of second magnetic fields that vary
 an intensity of the first magnetic field; and

a second reactor comprising at least one second reactor coil configured to tune the
 first reactor to the load;

wherein the first reactor is configured to provide the power to the load, and wherein
 10 the second reactor is configured to increase the power provided to the load by the first
 reactor by increasing an intensity of the plurality of second magnetic fields generated by the
 at least one second coil and tuning the first reactor to the load.

2. The system of claim 1, further comprising an input inverter configured to receive power
 from a DC power source and convert the power into AC power for use as an excitation
 15 energy for the system.

3. The system of claim 2, wherein the input inverter is configured to receive power from a
 utility grid.

4. The system of claim 1, further comprising a rectifier assembly configured to receive AC
 output power at an output of at least one of the first reactor and the second reactor and
 20 convert the AC output power into DC output power.

5. The system of claim 1, further comprising one or more sensors configured to sense an
 output current associated with the load.

6. The system of claim 5, wherein the one or more sensors comprise one or more Hall
 Effect current sensors.

7. The system of claim 5, further comprising a processor configured to receive a signal
 from the one or more sensors and determine whether to activate or deactivate one or both of
 the first reactor or the second reactor based on the signal from the one or more sensors.

8. A system for providing power to a load, comprising:

a first plurality of coils, wherein a first coil of the first plurality of coils is configured to
 30 generate a first magnetic field, and wherein a plurality of second coils of the first plurality of
 coils are configured to generate a plurality of second magnetic fields that vary an intensity of
 the first magnetic field; and

a second plurality of coils, wherein the second plurality of coils are configured to tune at least one tuned coil of the first plurality of coils to the load;

wherein the first plurality of coils is configured to provide the power to the load, and wherein the second plurality of coils is configured to increase the power provided to the load by the first plurality of coils by increasing an intensity of the plurality of second magnetic fields generated by the plurality of second coils and tuning the tuned coil to the load.

9. The system of claim 8, further comprising an input inverter configured to receive power from a DC power source and convert the power into AC power for use as an excitation energy for the system.

10. The system of claim 9, wherein the input inverter is configured to receive power from a utility grid.

11. The system of claim 8, further comprising a rectifier assembly configured to receive AC output power at an output of at least one of the first plurality of coils and the second plurality of coils and convert the AC output power into DC output power.

12. The system of claim 9, further comprising one or more sensors configured to sense an output current associated with the load.

13. The system of claim 12, wherein the one or more sensors comprise one or more Hall Effect current sensors.

14. The system of claim 12, further comprising a processor configured to receive a signal from the one or more sensors and determine whether to activate or deactivate one or more of the first plurality of coils or the second plurality of coils based on the signal from the one or more sensors.

15. A method of providing power to a load, comprising:

generating, using a first coil of a first plurality of coils, a first magnetic field;

generating, using a plurality of second coils of the first plurality of coils, one or more second magnetic fields configured to vary an intensity of the first magnetic field;

tuning, using a second plurality of coils, at least one tuned coil of the first plurality of coils to the load; and

providing, using the first plurality of coils, power to the load, wherein the second plurality of coils is configured to increase the power provided to the load by the first plurality of coils by increasing an intensity of the plurality of second magnetic fields generated by the plurality of second coils and tuning the tuned coil to the load.

16. The method of claim 15, further comprising receiving excitation energy from an input inverter configured to receive power from a DC power source and convert the power into AC power for use as the excitation energy.

5 17. The method of claim 16, wherein the input inverter is configured to receive power from a utility grid.

18. The method of claim 15, further comprising transmitting AC output power from at least one of the first plurality of coils or the second plurality of coils to a rectifier assembly configured to convert the AC output power into DC output power.

19. The method of claim 15, further comprising:

10 sensing, using one or more sensors, an output current associated with the load; and
 determining, using a processor, whether to activate or deactivate one or more of the first plurality of coils or the second plurality of coils based on the signal from the one or more sensors.

15 20. The method of claim 15, wherein the one or more sensors comprise one or more Hall Effect current sensors.