Generation of Electrical Power from Absolute Vacuum by High Speed Rotation of Conducting Magnetic Cylinder

By,
Paramahamea Tewari
Department of Atomic Energy
Nuclear Power Board
Bombay, India

Abstract — Recent experiments performed for generation of electric power through a machine operating on new basic principles have shown that an output power greater than input can be generated. It is shown in this paper that the origin of additional power is from absolute vacuum which can be rotated to produce electric charge. The computation of energy in the rotating vacuum has been done with the use of new fundamental relationships on electron's charge and electron's rest-mass derived from electron structure in author's works [1] that discuss dynamics of vacuum and show interrelationships of space (absolute vacuum), energy and electron.

INTRODUCTION

It has been recently reported by Bruce De Palma [2] that in a new machine (electrical generator) measured output exceeds input by a factor of 4.92. As described in Fig. 1A, De Palma Trombly [3] machine is essentially a conducting cylindrical magnet rotated at high speed around the axis with magnetic field parallel to the axis. Since there is no relative motion between the magnetic field and the conducting cylinder, the appearance of dc voltage between the shaft and the periphery, and consequent generation of power cannot be due to Faraday's law of electro-magnetic induction.

In order to have an independent check on the above results, experiments have been carried out on a similar machine constructed by the author at Tarapore Atomic Power Station. The test results have shown an efficiency of the machine above 250%. The experimental results in which the output is larger than the input by a factor more than unity are in violation of the 'law of conservation of energy' unless it is shown theoretically that the additional power is generated in the interatomic space of the rotating cylinder and without the requirement of an equivalent input to the drive motor. A theoretical proof of generation of power from space in the above experiments is obtained in this paper with the use of new fundamental equations on electron's charge and electron's rest-mass derived in [1].

MACHINE INTERNAL
RESISTANCE: 6-10 MICRO-OHMS
VOLTS: 2.9 VOLTS D.C.
AMPS: 15000
B = 15000 GAUSS
OUTPUT
ALTERNATIVE POSITION OF BRUSH
-VE
V_{OUT}
+VE
SURFACE A
ELECTRON FLOW SURFACE A
ELECTRON FLOW
$l = 7''$
N = 120 rps
ROTOR
$r_1 = 3''$
COIL FIXED WITH THE ROTOR
$L = 9.25''$
$2''$
D.C. INPUT TO COIL : 150 WATTS
DRIVE MOTOR

SPACE POWER GENERATOR
(FIG. - 1A)

NO LOAD: 1340-1670 WATTS WINDAGE & FRICTION
LOADED: 10.8KW (9.3KW IS DRAG DUE TO CURRENT WITHDRAWAL)
OUTPUT: 43.7KW, (45.8KW MAX.)
POWER GAIN: 45.8KW/9.3KW = 4.92

FORMULATION

The central concept introduced in [1] is that space, rather than being an empty extension, is a nonmaterial and mobile entity which generates, with its irrotational vortex motion, 'velocity field' (VF), defined as the most fundamental universal field from which charge, mass and the associated electromagnetic and gravitational fields are produced. In Fig. 2A, an irrotational vortex of space and VF vector are shown. The non-material properties of space are continuity, incompressibility, nonviscosity and zero-mass.

The other postulate [1] is the limiting spin of space, defined as the ratio of the limiting speed of light (c) in absolute vacuum and the radius (r_e) of a spherial void created due to the breakdown of space (Fig. 2B) when spin reaches the limiting value [2]. The spherical void is a 'fieldless hole in space at the centre of electron. The electron structure, rather than being a point-charge, is an irrotational vortex of space around a central void.

Fundamental Equations on Electron's Charge and Mass.

Following fundamental equations derived from void-vortex structure of electron are relevant to the computation of rotational charge energy produced in the new machine.

REST-MASS OF ELEMENTAL DISC OF VOID,

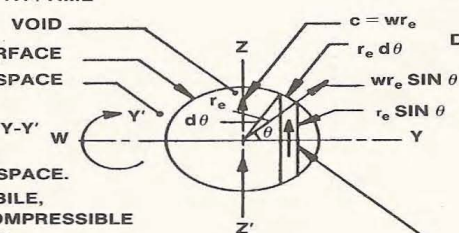DM = dvX SPEED OF CIRCULATING SPACE AT THE INTERFACE OF THE ELEMENT.

$dm = (\pi_e^2 \, SIN^2\theta \, r_e \, d\theta) \, wr_e \, SIN \, \theta$

ELECTRONIC REST-MASS,

$m_e = {}_0\pi n c r_e^3 \, SIN^3 \, \theta \, d\theta = (4\pi/3) r_e^3 \, e$

DIMENSIONS OF m_e = LENGTH^4/TIME

VOID
SPACE-VOID INTERFACE
SPACE
W: ANGULAR VELOCITY OF INTERFACE ALONG, Y-Y'
VOID: FIELDLESS SPHERICAL HOLE IN SPACE.
SPACE: NON-VISCOUS, MOBILE, CONTINUOUS, INCOMPRESSIBLE
VOID-RADIUS $r_e \, \nabla \, 10^{-n}$ CM
$c = wr_e$
$r_e \, d\theta$
$wr_e \, SIN \, \theta$
$r_e \, SIN \, \theta$

Refer Fig. 2B which shows spin of space at void-space interface. At the elemental surface, tangential velocity of space is $wr_e \sin \theta$, which increases to its limiting value c at the dimetrical section of the interface. The basic definitions for electron's charge, rest-mass and dilectric constant for vacuum are:

$$q_e = (\pi/4)(4\pi r_e^2 \quad c) \tag{1}$$

where

q_e is the electron's charge
r_e is the radius of spherical void
c is the light speed in vacuum

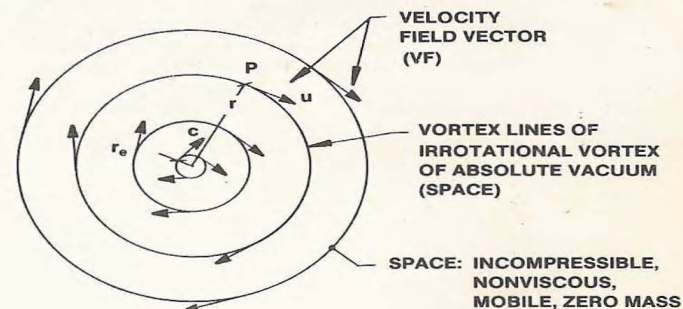Hence, it follows that the dimensions of q_e are:

$$q_e = L^3/T \tag{2}$$

$$m_e = (4\pi/3) r_e^3 \quad c \tag{3}$$

where

m_e is the electron's rest-mass.

Hence, it follows that the dimensions for mass m_e are:

$$m_e = L^4/T \tag{4}$$

VELOCITY FIELD VECTOR (VF)
P
r
u
r_e
c
VORTEX LINES OF IRROTATIONAL VORTEX OF ABSOLUTE VACUUM (SPACE)
SPACE: INCOMPRESSIBLE, NONVISCOUS, MOBILE, ZERO MASS CONTINUOUS

AT ANY POINT P OF A VORTEX LINE, ur = CONSTANT
WHEN $r = r_e$, $u = c$.
THEREFORE, cr_e = CONSTANT,
AND $u = r_e/r$

IRROTATIONAL VORTEX OF ABSOLUTE VACUUM (SPACE)
(TWO DIMENSIONAL)
FIG. - 2A

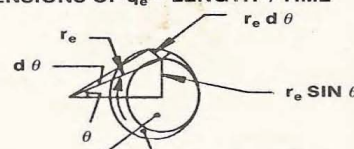CHARGE ON ELEMENTAL RING SURFACE, dq = RING AREA x SPEED OF CIRCULATING SPACE ON RING SURFACE

$dq = dA \, (Wr_e \, SIN \, \theta)$

ELECTRONIC CHARGE,

$q_e = {}_0\pi \, (2\pi r_e \, SIN \, \theta \, r_e \, d\theta) \, (Wr_e \, SIN \, \theta)$

$q_e = (\pi/4) \, (4\pi r_e^2 \, c)$

DIMENSIONS OF q_e = LENGTH^3/TIME

$r_e \, d\theta$
VOID CENTRE OF ELECTRON
FIG. 2B
r_e
$d\theta$
$r_e \, SIN \, \theta$
ELEMENTAL SURFACE, $dA = (2\pi r_e \, SIN\theta) \, r_e \, d\theta$
$dv = (\pi r_e^2 \, \theta \, SIN^2\theta) \, r_e \, d\theta$

17

In CGS system, dilectric constant for vacuum e_o taking q_o as the unit of electric charge (in place of CGSE Unit) is given by:

$$e_o = \pi/2c \tag{5}$$

Substituting in (1) experimentally determined value, $q_e = 4.8 \times 10^{-10}$ CGSE units, and supposing [4] the value of void radius $r_e = 1.5 \times 10^{-11}$ cm.

$$cm^3/s = (7.2) \text{ CGSE} \tag{6}$$

The above supposition on the radius of electron is based on the following extract [4]. "If we proceed from modern theoretical electrodynamics, which has been established better than any other field theory, the conclusion seems to be that the electron has enormous dimensions, not 10^{-13} cm, as expected from classical physics, but 10^{-11} cm is the size of the region in which the vacuum about the electron is polarized".

GENERATION OF SPACE POWER

As shown in Fig. 2B, for computation of electron's charge on interface, the product of speed of spinning space at the elemental surface and its area dA is taken. This indicates that for all values of VF varying from zero to c, charge is produced. Therefore, rotation of cylindrical surface at A will generate in its interatomic space rotational charge (q_{ro}) given by similar relationship as for electronic charge. Neglecting the area occupied by atomic nuclei and orbital electrons at surface A.

$$q_{ro} = \text{space surface} \times \text{rotational speed}$$
$$= (2\pi rL) \quad (2\pi rN) \tag{7}$$

where
- r   is the outer radius of rotor
- L   is the rotor length
- N   is revolution per sec.

Rotational charge generated at the cylindrical surface A′ is:

$$q_{ri} = (2\pi r_i L) \quad (2\pi r_i N) \tag{8}$$

where
- r_i is the radius of the inner rotor.

Since the direction of the magnetic field in the outer rotor at surface A is opposite to that in the inner rotor surface A′, the net rotational charge (q_r) generated in the rotor is:

$$q_r = q_{ro} = q_{ri} = 4\pi^2 LN(r^2 - r_i^2) \tag{9}$$

In CGS system, substituting the values in (9), L = 23.495 cm, N = 120 r/s, r = 17.78 cm, r_i = 7.62 cm,

$$q_r = 287 \times 10^5 \text{ cm}^3/s.$$

Converting cm^3/s to CGSE units from (6),

$$q_r = 2066.4 \times 10^5 \text{ CGSE units} \tag{10}$$

Since $q_e = 4.8 \times 10^{-10}$ CGSE unit, numbers of electrons (N_e) equivalent to charge q_r will be:

$$N_e = 2066.4 \times 10^5/4.8 \times 10^{-10} \tag{11}$$
$$= 4.30 \times 10^{17}$$

Energy in the electrostatic field of N_e electrons is computed as below:

Electrostatic energy (U) of a point-charge as per conventional physics is given by:

$$U = \frac{1}{\theta} \quad q_e^2 \quad \underline{\quad\quad} \quad \frac{}{r} \quad 2(4\pi E_o) \quad [\quad] \tag{12}$$

where r, the radial distance from the charge centre, varies from zero to infinity. With void-centre of electron, the minimum value of r is taken as r_e (and not zero) since void is fieldless zone. (The present difficulty in physics of infinite quantity of energy in the field of a point-charge is avoided with void-centre structure of electron.)

In electron structure (Fig. 2B), the VF distribution is axi-symmetric, and consequently the charge distribution on the interface is also axi-symmetric rather than being spherically symmetrical as in case of a point-charge. The co-efficient, $\pi/4$, appears in (1) because of axi-symmetric charge distribution, and will be dropped for a spherically symmetric charge distribution. Equation (1) for spherically symmetric charge will therefore become:

$$q_e = 4\pi r_e^2 c \tag{13}$$

Substituting the value of e_o from (5) in (12) and from (13) expressing q_e in terms of r_e and c,

$$U = (4\pi r_e^2 c)^2/2 \quad (4\pi^2/2c) \, r_e$$
$$= (3/\pi) \quad (4\pi r_e^3 c) /3.$$

which from (3) becomes:

$$U = (3/\pi) m_e c^2 = (3/\pi) 10^{-6} \text{ ergs.} \tag{14}$$

Net energy produced from rotational charge from (11) and (14),

$$E = (4.30 \times 10^{17}) \, (3/\pi) \, 10^{-6} \text{ ergs.}$$
$$= 41 \text{ kWs} \tag{15}$$

which is close to the maximum 45.8 kW power drawn from the machine.

Generation of Free Electrons

Rotational charge is added to the neutral system of atoms at surface A and A′, thus causing release of orbital electrons from the atoms. The free electrons are oriented by the magnetic field B such that the angular momentum of the electron is parallel to 3 vector (Fig. 3A). The VF produced due to rotation of cylinder interacts with the VF in the vortex structure of electron (Fig. 3B) pushing electrons to one side, thus creating positive and negative polarities (Fig. 1A) between the shaft and the surface A′. Opposite polarities develop between the shaft and the surface A, due to opposite direction of B and consequently opposite orientation of free electrons.

Constancy of Space Power Generation

The property of nonviscosity of space maintains the rotational charge energy in the rotor without any dissipation. The energy from VF is taken for the release of orbital electrons from the atoms. When the load circuit is closed, the electrons return through the load circuit to the positive pole, unite with positively charged atoms and give off energy to VF which again releases orbital electrons, thus completing the cycle. The VF in the rotor is superposed with opposite VF when the machine is brought to rest due to retardation of the rotor and space power generation reduces to zero.

Output to Input Ratio Higher than Unity

In conventional generators, the direction of the load current through the armature (Fig. 4A) is such that the interaction of its magnetic field with the main exciter field results in the generator rotor being rotated against the magnetic force, and for 100% efficiency, output equals input. As shown in Fig. 3B, the electron drifts 'sideways' in the rotor of the Space Power Generator (SPG) such that the plane of its magnetic field is at right angles to B, thus causing no interaction with B. The flow of electrons in the rotor of SPG due to external load current, thus, does not cause any drag on the rotor. The conventional principle of equality of electrical output with input will not be violated if the generation of continuous power due to the rotation of interatomic space is taken into account. (Further tests on SPG that are being conducted by the author at Tarapore Atomic Power Station will provide additional information for fuller understanding of this unique power generating system.)
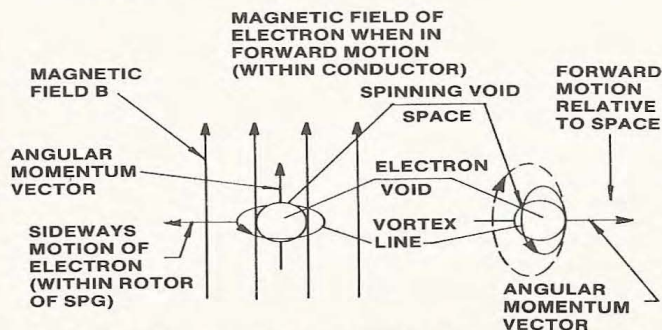
Space-Energy Relation

Consider the case when power is tapped from Surface A, and magnetic field is supposed to be, in the whole volume of the rotor, in the same direction. From (9) and further calculations for power generation as per (15), it can be shown that,

$$P = (1.8) \, \pi \, L \, N \, r^2 \, 10^{-5} \, kW, \tag{16}$$

where, P is power in kW.

It is seen from (16) that power produced is independent of magnetic field strength. The magnetic field B, however determines the voltage developed, as shown below. The force developed on electrons due to equivalent charge, q_r, is given by Lorentz' force.

$$F = q_r \, B(2 \, \pi \, N \, r).$$

MAGNETIC FIELD B
ANGULAR MOMENTUM VECTOR
SIDEWAYS MOTION OF ELECTRON (WITHIN ROTOR OF SPG)
MAGNETIC FIELD OF ELECTRON WHEN IN FORWARD MOTION (WITHIN CONDUCTOR)
SPINNING VOID SPACE
ELECTRON VOID
VORTEX LINE
FORWARD MOTION RELATIVE TO SPACE
ANGULAR MOMENTUM VECTOR

INTERACTION OF ELECTRON WITH EXTERNAL MAGNETIC FIELD
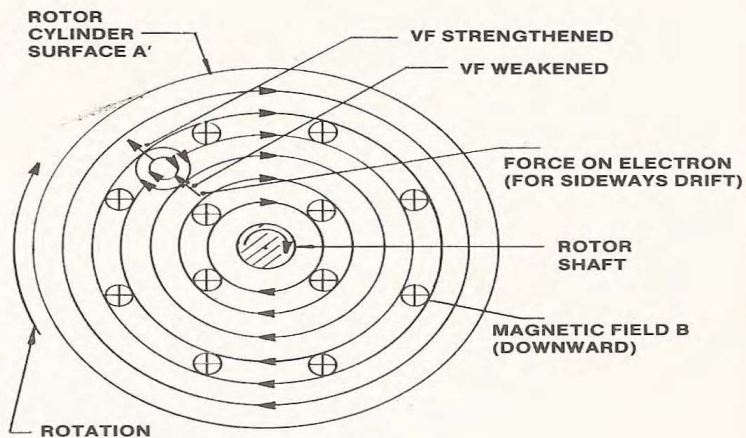### (FIG. 3A)

Energy required to create electric potential between the shaft and surface A will be,

$$Energy = q_r \, B(2 \, \pi N \, r) \quad r/2, \tag{17}$$

and voltage, V, which is, Energy/q_r, is given by

$$V = B(2 \, \pi N) \quad r^2/2 \tag{18}$$

ROTOR CYLINDER SURFACE A'
VF STRENGTHENED
VF WEAKENED
FORCE ON ELECTRON (FOR SIDEWAYS DRIFT)
ROTOR SHAFT
MAGNETIC FIELD B (DOWNWARD)
ROTATION

STRENGTHENING VF ATTRACTS ELECTRON TO OUTER PERIPHERY; WEAKENED VF PUSHES ELECTRON AWAY FROM SHAFT. OPPOSITE POLARITIES APPEAR ON SHAFT AND PERIPHERY.
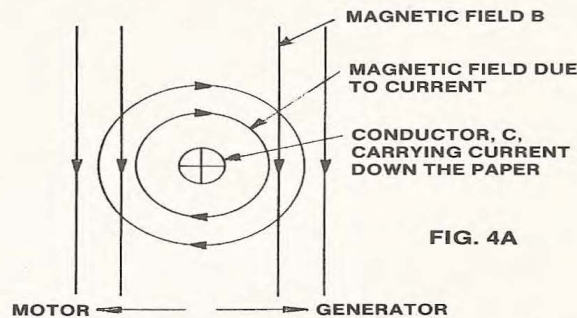
FIG. 3B

MAGNETIC FIELD B
MAGNETIC FIELD DUE TO CURRENT
CONDUCTOR, C, CARRYING CURRENT DOWN THE PAPER

FIG. 4A

MOTOR ◄ ──── ──── ► GENERATOR

FOR GENERATOR ACTION, CONDUCTOR C HAS TO MOVE AGAINST HIGHER MAGNETIC FIELD.

CONCLUSIONS

The generation of electric charge by high speed rotation of absolute vacuum, in a magnetic conducting cylinder and sustaining the charge without any appreciable loss, provides a viable means of power production from the limitless source of space substratum. The higher output of space power generator over the input to its drive-motor pinpoints the fact that the absolute vacuum in a dynamic state, is the basic source of power. The new fundamental equations on electron's rest-mass and charge, which enable computation of rotational charge generated from the absolute vacuum, the non-material properties of vacuum, and void-centre structure of electron (rather than point-charge) are vindicated. The sphere of void at electron's centre should have a radius of about 1.5×10^{-11} cm. is the prediction that follows from the experimental test discussed in this paper.

The numerous experiments carried out by Bruce De Palma since 1978, as given in his ·· reports sent regularly to author and author's own more recent experiments confirm the fact that electric power can be generated from space at efficiency greater than unity.