A New Design to Manufacture Spaceships That Could Travel at a Speed Close to the Speed of Light

According to the **law of conservation of energy**, in which all forms of energies could be changed into other forms and are not lost, the following relations can be written :

Energy = magnetic energy = electrical energy = kinetic energy = potential energy= radiant energy

$$E = E_B = E_E = E_K = E_U = E_R$$

$$E = q(\vec{v} \times \vec{B}).\vec{d} = RI^2 t = \frac{1}{2}mv^2 = mgd = nh\vartheta$$

The Electron-tank is an abundant, huge, clean and high source of energy, in which a large amount of electrons are placed in a very small space and could produce a lot of energy.

One kilogram Electron-tank has 10^{16}j of energy, which is equal to the consumed electricity of a city for several months.

In order to propel a spaceship, it is enough to design engines that have the ability to emit particles such as photons, electrons, etc. As a result of the reaction of the emission of particles, a reaction force will create that moves the spaceship.

It should be noted that in vacuum space, by using the impulse of particles that have a speed close to the speed of light, it is possible to produce energy by which a spaceship could reach the speed close to the speed of light.

$$E_{Tot} = N \times n(\frac{1}{2}mc^2) \times t$$

Where E_{Tot} is the total produced energy in terms of t, N is the number of engines, n is the number of particles per second and t is the time.

In which the total energy is equal to multiply of the energy of each particle, the number of particles per second, the number of engines of the spaceship and the time. In vacuum space, the energy entered into the spaceship increases by the time and in fact increases its speed.

In fact, it can be said that at the proper time, the speed of spaceship can reach to a fraction of the speed of light. Assuming that it can reach 0.01 of light speed, the round trip from Earth to Mars can be completed within 24 hours.

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Notice:

Considering that the spaceship wants to travel at a speed close to the speed of light, its safety is so important, since small objects have many destructive effects at high speeds.

For the safety of spaceship and its crew, anti-gravity plates must be manufactured as a protector.

For example, we calculate the speed of a spaceship with the following specifications:

M (Mass of the spaceship): 10,000 tons

n (number of electrons per second): 10^{30}

N (number of engines): 10 and

t (time): 3600 s

So we have:

$$E_{Tot} = N \times n(\frac{1}{2}mc^2) \times t$$

$$E_{Tot} = 10 \times 10^{30}(\frac{1}{2} \times 10^{-30} \times (3 \times 10^8)^2) \times 3600 \Rightarrow E_{Tot} = 1.62 \times 10^{21} j$$

$$E_{Tot} = \frac{1}{2}Mv^2 \Rightarrow 1.62 \times 10^{21} = \frac{1}{2} \times 10^7 \times v^2 \Rightarrow v = 1.78 \times 10^7 \, m/s$$

According to the above calculations, it is possible to design a spaceship with a mass of 10,000 tons, which could travel from Earth to Mars with 10% of its fuel, return with the same amounts, and reserve 80% of fuel in a very short time, with a successful displacement.