NEW FACTORS FOR GREATER EFFICIENCY OF THE TWO-STAGE OSCILLATOR

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ABSTRACT

The goal of this paper is to publish new observations for a system which uses the two-stage mechanical oscillator as a drive for a set of several manual electric flashlights with dynamo. This system was displayed at the movie published in 2011 on the internet video-sharing platform *YouTube*: http://www.youtube.com/watch?v=5ho0_obiakM

There has been noticed greater output energy in comparison with input energy.

Key words: induction, flashlight, friction, pendulum, gravity, oscillator, efficiency.

INTRODUCTION

Several papers were published on internet site *veljkomilkovic.com* concerning the efficiency of the two-stage mechanical oscillator. These papers were written by a dozen of researchers who studied the work of the oscillator as a hammer or as a system with a load mounted on the output side like winged or cylindrical water pump. One of the most interesting loads was a set of several electric flashlights with dynamo which utilized the principle of voltage induction by a permanent magnet. Many people are interested in the possibility of the usage of the oscillator for the generation of electric energy. That's why the test of the oscillator with this set was one on the most important tests. In the appendix of this paper there are the results of an official measuring of the work of the oscillator which had two induction flashlights on the output side and one induction flashlight trough which the mechanical energy was pumped into the system, *figure 1*. Testing was performed at the Faculty of Technical Sciences of University of Novi Sad, Serbia on December 14, 2005. It was done by Dr. Slobodan Milovancev, Ph.D. in Electrical Engineering (chairman of the institute was Professor Dr. Veljko Malbasa). Testing was observed by Veljko Milkovic with his associates, Bojan Petkovic, B.Sc. and Alen Panjkovic.

PRINCIPLE OF WORK

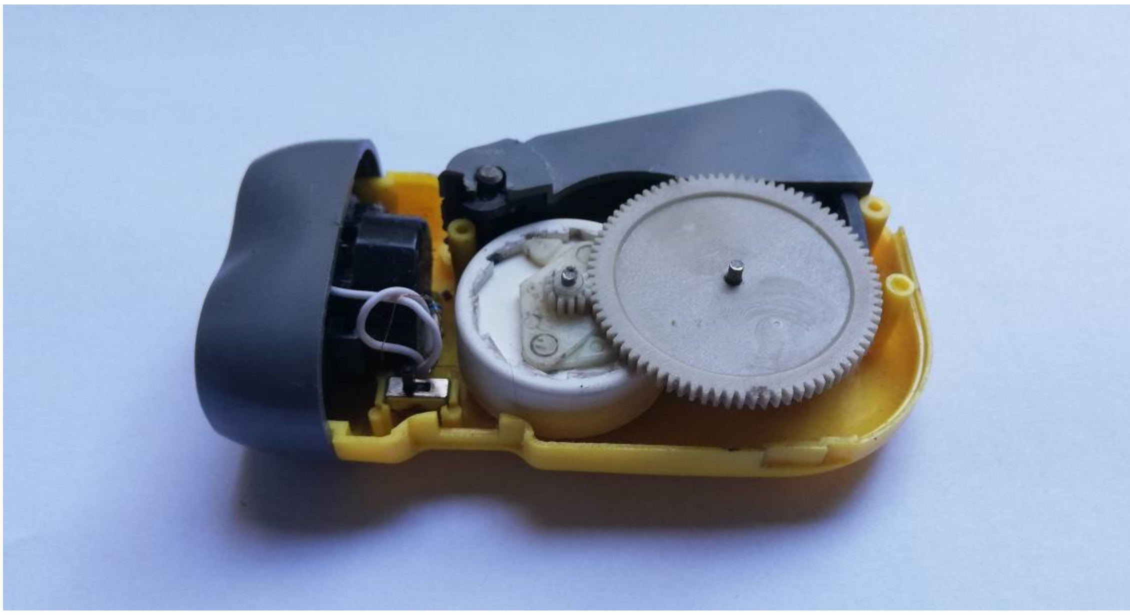
On the output side of the oscillator were mounted two electric flashlights, one on each side of the lever, *figure 1*. The lever will keep pressing the spring of one of the flashlights regardless if it was moving upwards or downwards. This pressure will cause the movement of corresponding permanent magnet which will induce the voltage in that flashlight. The voltage will create some electric current which will cause the light in the active flashlight.

Figure 1

The output of the system displayed at *figure 1* consists not only of two electric flashlights fixed for the lever. Into the output is also necessary to include energy spent for the work of electric flashlight by which the hand of operator keeps pushing the pendulum bob. The question now is how energy is going into the input side of the system if energy spent by the flashlight in the hand is calculated as part of the output of the system?

An opened electric flashlight with two LED bulbs along with its working diagram can be seen at *figure 2* (which was used for the system displayed at *figure 3*). It can be seen that it has a spring connected to the dynamo. In order to compress the spring it is necessary to apply some force upon it. The force multiplied by the path it passed represents the work committed by the hand of the operator. That is the energy pumped into the input side of the system. The path passed by the compressed spring is small, as much as the path necessary to compress the spring itself. It is necessary to distinguish the empty path of the hand from the path when the spring kept compressing. It can be seen on the movie that the hand of the operator kept tapping the pendulum bob with the flashlight which means that the active path of the hand was short since short impulse of the force was applied. The force also was not great since the pendulum bob kept running away from the hand of the operator. This is proved by the official measurements given in the appendix where can be seen that the power of input flashlight was about 20 times smaller than the power produced on one electric flashlight on the output side.

The principle of work of an induction electric flashlight can be seen at *figure 2.* When the outside lever is pressed it will also press the spring which will by salient transmission wheel causes the rotation of the permanent magnet and this way induced the voltage in a coil placed into the stator. This voltage will push the electric current trough the flashlights which will produce the light.



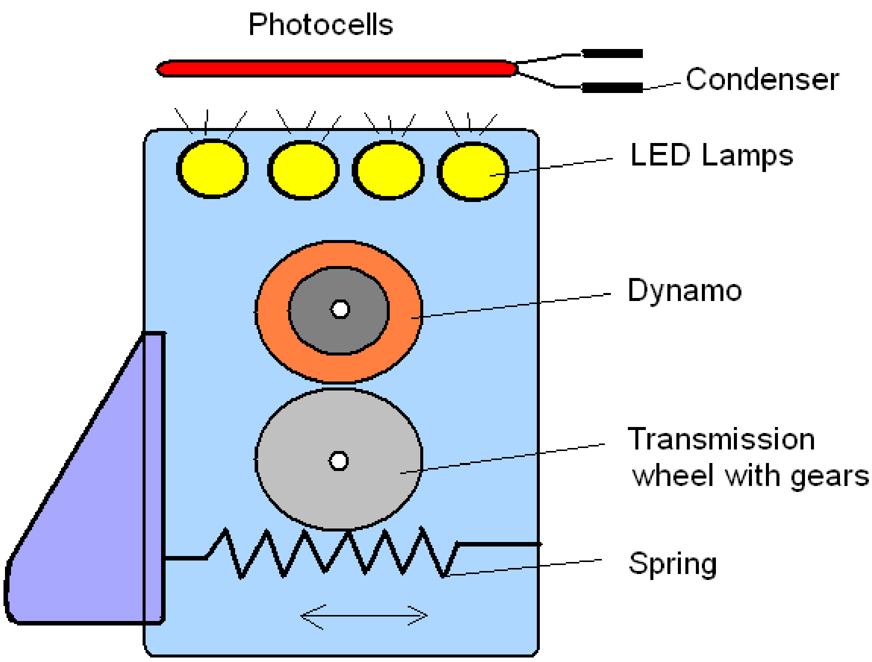


Figure 2

A set of photocells which transform the light into the electricity can be seen at the top of diagram at *figure 2.* This electric energy is next collected into a condenser and can be used latter. This way the light energy which exited out of the flashlights can be measured and included into the equations.

The energy lost as a sound made by the salient transmission wheel can also be captured by a microphone and also collected into the condenser.

It is also necessary to note that the friction exists in the salient transmission wheel which will be transformed into the heat. This heat should be also included into the calculation of total output of the system.

A system with 9 electric flashlights with two LED bulbs inside each can be seen displayed at *figure 3*. This system can be also seen in the movie (mentioned before) which can be found on video platform *YouTube*.

Figure 3

CONCLUSION

Taking into the account of everything said before it can be concluded that into the output of the system should be included energy spent by input flashlight too. This way overall efficiency of this system will be increased.

During the construction of new system the flashlight should not be used at the input side of the system. This way there would be no loses caused by the light neither loses caused by the friction and the noise of the transmission gears. The usage of an electromagnet as the drive would save the input energy.

Besides this, greater efficiency could also be achieved by the usage of ceramic bearings or already improved elastic pendulum (*know-how*).

* This text is the translation of the original document (see http://www.veljkomilkovic.com/Images/Rezultati_zvanicnog_elektro_%20merenja.pdf)

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Our number: _______________
Date: 14th December 2005

RESEARCH REPORT

On request of Mr. Veljko Milković from Novi Sad, voltage, current and power provided by single-phase generator of alternating voltage (unmarked) have been measured, in the work mode for which it has been designed.

During the first measurement, the generator was run by the lever that could be moved in a vertical plane. The generator was fixed (immobilized) and the force was applied in a straight line, from upwards towards down.

During the second measurement, the generator was held in a hand, and the force was transferred by hand through the generator on the weight hanging on a lever and moving in a vertical plane. This experiment measured only a fraction of the power turned into electrical power.

Measurement took place in a room at the temperature of 12+3 °C with a voltmeter and ampermeter with 0.5 accuracy class and 1 accuracy class. Voltmeter and ampermeter measure real effective value of the input signal (2 seconds interval) and a wattmeter calculates the samples of current values of the voltage and current multiplied together, also in a period of two seconds. The strength factor of the consumer is also measured.

Successively measured values for the voltage, current and strength factor have been recorded automatically.

A bulb for the flashlight has been used as a consumer. It has been established that the consumer has a negligible influence.

Generator provided voltage with a sine curve, with frequency of 200Hz, and an amplitude that changes with time.

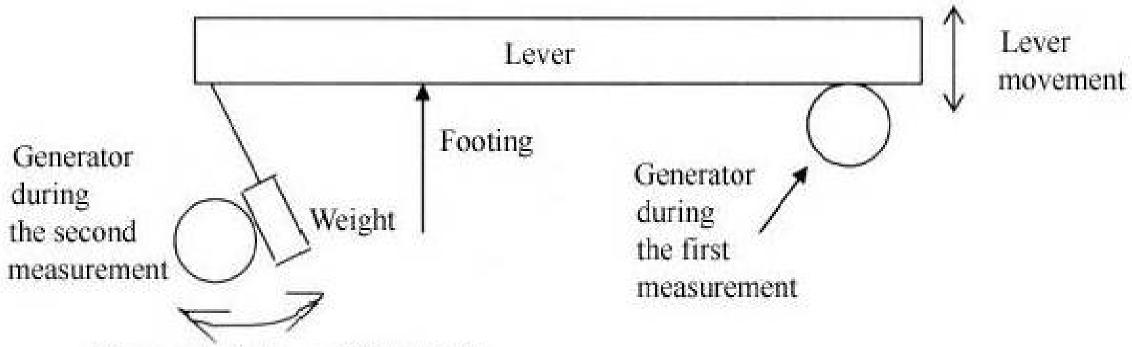
Research performed by: Dr. Slobodan Milovančev

Institute director: Prof. Dr. Veljko Malbaša

Appendix 1: Sketch of the mechanism
Appendix 2: Diagrams of the voltage, current and strength factor changes for the first measurement
Appendix 3: Diagrams of the voltage, current and strength factor changes for the second measurement

APPENDIX 1

Sketch of the mechanism



First measurement: the lever is moving the generator

The values of the measured voltage varied between 1.439 V and 2.547 V.
The values of the measured current varied between 65 mA and 89 mA.
The values of the measured electrical current varied between 91 mW and 228 mW.
The values of the measured strength factor varied between 0.973 and 0.999.

Second measurement: the hand is moving the generator

The values of the measured voltage varied between 164 mV and 375 mV.
The values of the measured current varied between 13 mA and 26 mA.
The values of the measured electrical current varied between 2 mW and 9 mW.
The values of the measured strength factor varied between 0.820 and 0.957.

APPENDIX 2

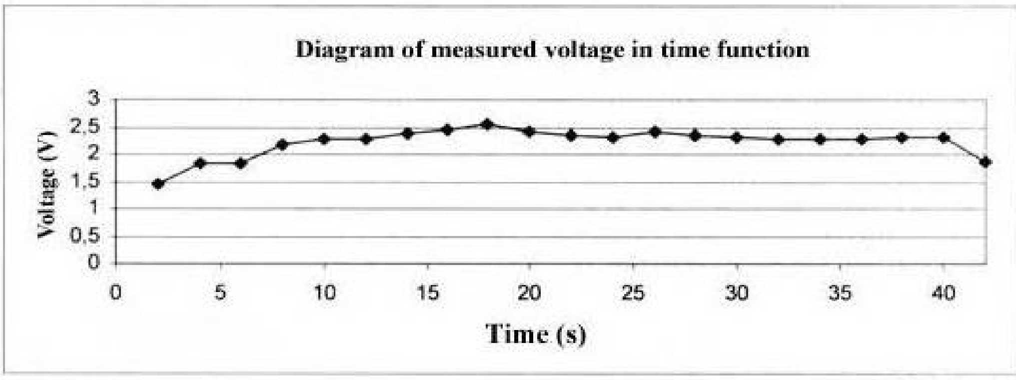


Diagram of measured voltage in time function
Voltage (V)
Time (s)

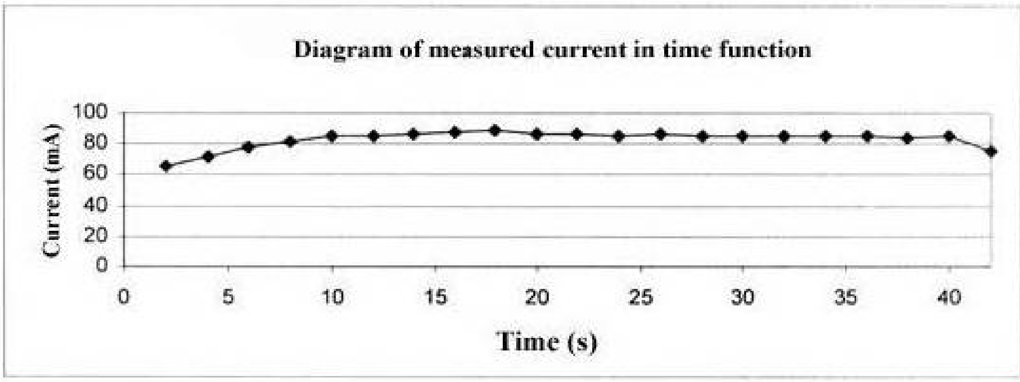


Diagram of measured current in time function
Current (mA)
Time (s)

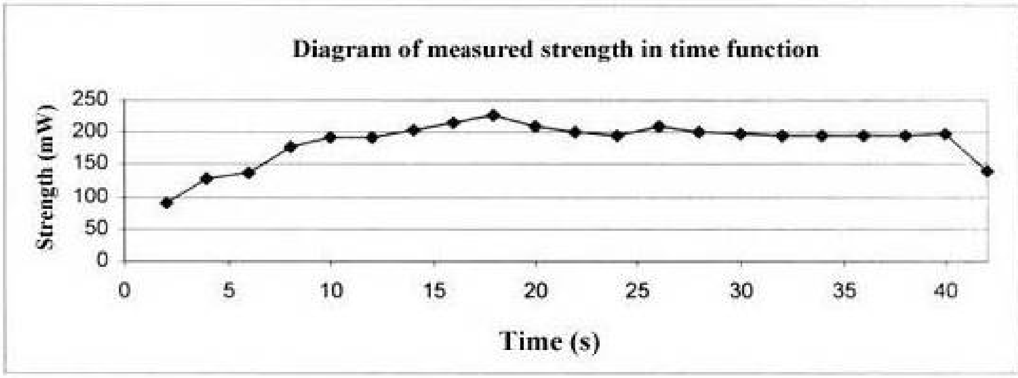


Diagram of measured strength in time function
Strength (mW)
Time (s)

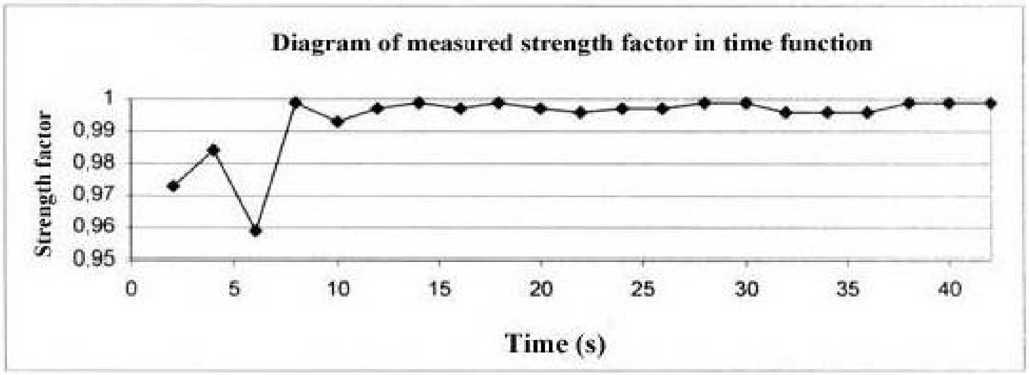


Diagram of measured strength factor in time function
Strength factor
Time (s)

APPENDIX 3

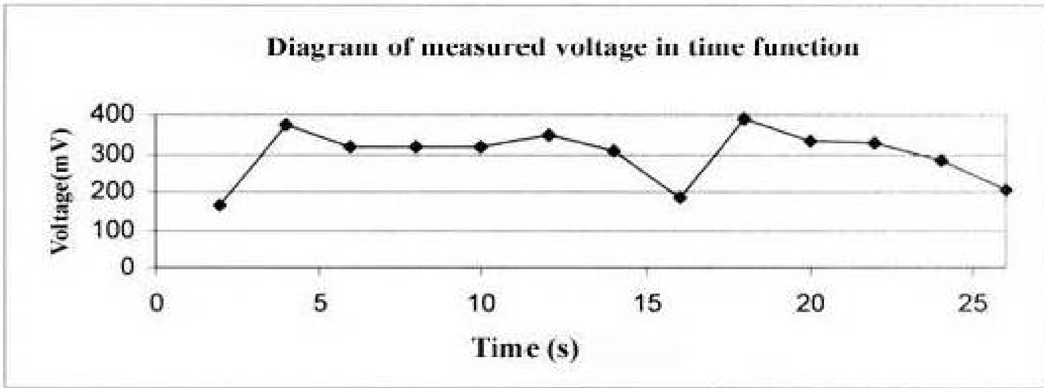


Diagram of measured voltage in time function
Voltage(mV)
400
300
200
100
0
0
5
10
15
20
25
Time (s)

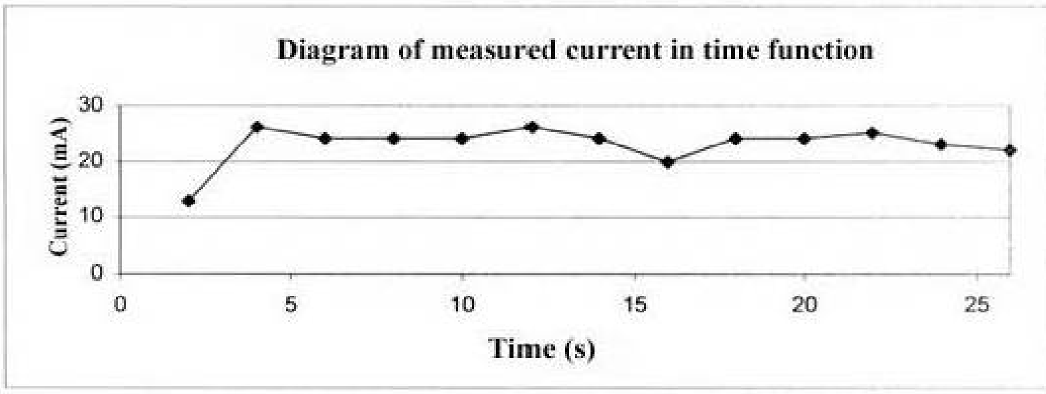


Diagram of measured current in time function
Current (mA)
30
20
10
0
0
5
10
15
20
25
Time (s)

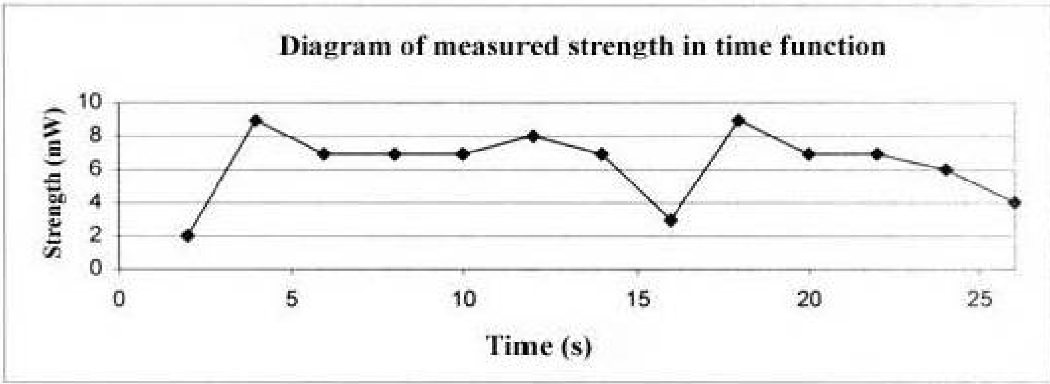


Diagram of measured strength in time function
Strength (mW)
10
8
6
4
2
0
0
5
10
15
20
25
Time (s)

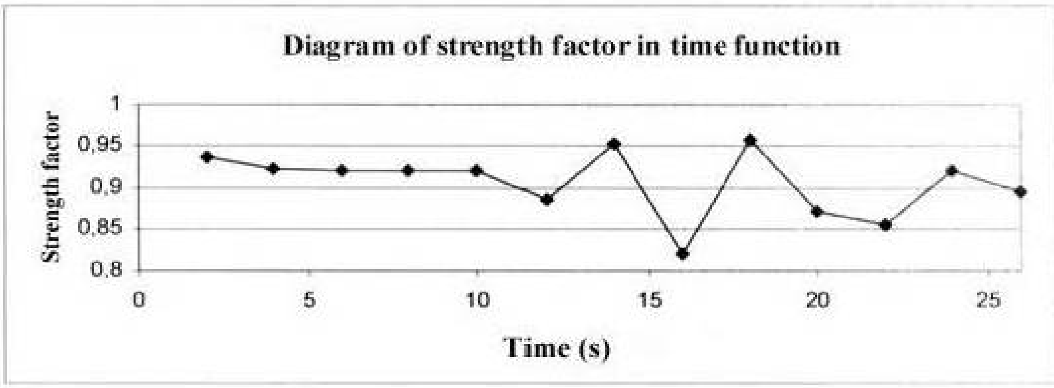


Diagram of strength factor in time function
Strength factor
1
0,95
0,9
0,85
0,8
0
5
10
15
20
25
Time (s)

REFERENCES

[1] Milković, Veljko (2013), *Gravitational Machines: From Leonardo da Vinci to the Latest Discoveries*, Novi Sad: VEMIRC
http://www.veljkomilkovic.com/books/gravitational-machines.html

[2] Papers and opinions about the superiority of the oscillations in comparison with the rotations
http://www.veljkomilkovic.com/Naucni_radoviEng.html
http://www.veljkomilkovic.com/MisljenjeEng.html
http://www.veljkomilkovic.com/Docs/ARS_Akademija_zakljucak_o_istrazivanju.pdf

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