Information document for the general public, scientists, engineers, decision makers, and wealthy and truly benevolent personalities

# Presentation of entirely novel and environmentally friendly energy technologies & Funding call for their advancement



Image from previous website https://ie.energy

Image source: Screenshot on





Image source: Screenshot on 8 July 2024 from video https://www.youtube.com/watch?v=SLJH8Ad2b44





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#### Version 98 from 8 June 2025

Dr. Frank Lichtenberg / Physicist https://novam-research.com

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Image from a screenshot on 21 January 2024 from https://www.spacefed.com

This presentation comprises 85 pages, a content overview, and can be downloaded as pdf via the following link (file size about 3 MB):

https://novam-research.com/resources/information-document.pdf

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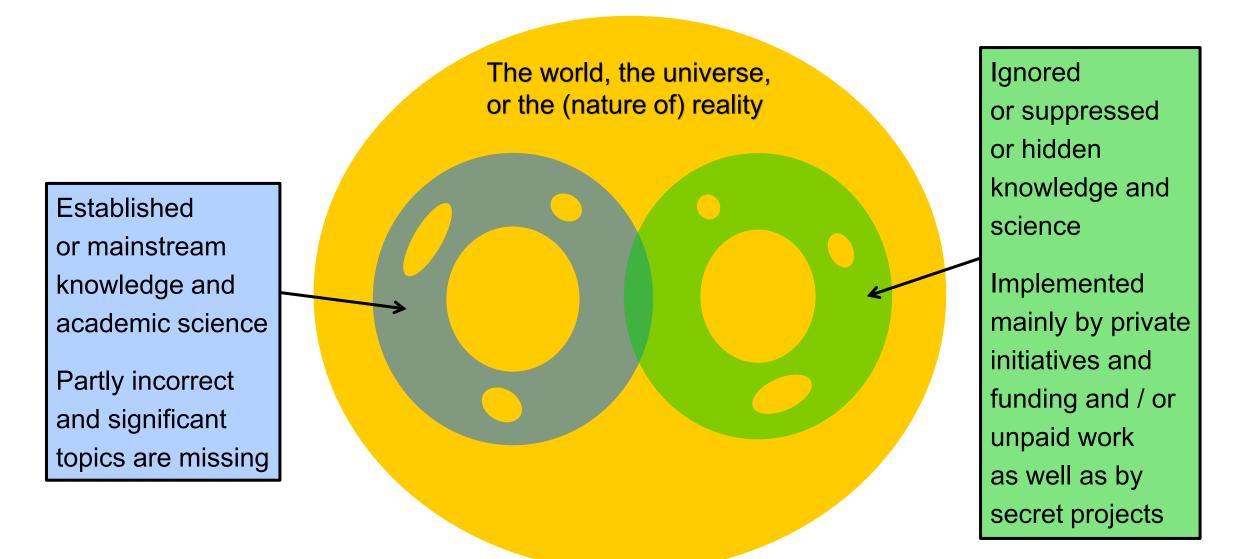
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# Introduction 1/3

It has become more and more evident that several non-mainstream scientists, researchers and inventors have achieved significant results which are relevant for an enjoyable evolution of mankind. The frontiers of the established academic science are already crossed and the doors for fundamentally new developments are open, even if this is still little known in public. The situation of knowledge and science is sketched on the following page ...

# Introduction 2/3

A sketch of the situation of knowledge and science



# Introduction 3/3

There are many remarkable results from non-mainstream science. For example, nowadays we can proceed from the assumption that there are entirely novel and environmentally friendly energy technologies ... Entirely novel and environmentally friendly energy technologies ...

# Entirely novel and environmentally friendly energy technologies 1/3

Self-running systems, generators, and power plants

This type of fundamentally new energy technologies does not need anything from the outside and can provide nevertheless permanently usable energy. The existence of these technologies and other considerations indicate that there is a hitherto unexplored form of energy. We can proceed from the assumption that there is everywhere on earth and in the universe an abundant form of energy which is called space energy, vacuum energy, zero-point energy, or ether energy. Energy technologies which tap this form of energy do not need any fuels, are emission-free and provide usable energy at any place and time ...

# Entirely novel and environmentally friendly energy technologies 2 / 3

They are able to replace all conventional energy conversion devices like combustion engines, nuclear power plants, wind power, hydroelectric energy, and solar power. The entirely novel energy technologies allow a decentralized and emission-free power supply for dwelling houses, buildings, factories, cities and villages. Thus long transmission lines are not needed anymore and they can be removed from the landscape. Cars, trains, ships, airplanes and space ships, which are equipped with these entirely novel energy or propulsion technologies, do not need any fuels and produce no exhaust gases. Electric trains do not need contact wires anymore ...

# Entirely novel and environmentally friendly energy technologies 3 / 3

The recognition of the existence of these fundamentally new energy technologies and their physical foundations may represent an intellectual or psychological challenge, for laymen as well as for professional scientists and engineers. It represents a paradigm shift in science, technology and consciousness.

To substantiate the statements on this page and the previous pages we present in the following some examples of significant achievements which are emerged from non-mainstream science ... Entirely novel and environmentally friendly energy technologies: Examples of devices, systems, and concepts ...

#### Self-running and zero emission power plants from the company Rosch Innovations 1/2

The company Rosch Innovations (https://rosch.ag) has developed so-called kinetic or buoyancy power plants which generate usable electric energy. These self-running and zero-emission power plants consist of a water column which contains a chain drive, fillable containers which are attached at the chain drive, a valve system which can fill the containers with air, an electrically-operated compressor which produces compressed air, a generator, and a control unit. Rosch and their distribution partners such as the global engineering, procurment, and construction company Ki-TECH (https://www.kitech.global/home-login) and the German company E-Cat Deutschland GmbH (https://e-cat-deutschland.de) offer industrial size power plants with an output power of 200 kW – 100 MW. Such a power plant does not yet exist at a publicly known and visitable customer site. However, potential industrial customers or potential licensees can visit and inspect an operating 100 kW and 500 kW power plant, provided that they provide a letter of intent and a proof of funds. The 100 kW and 500 kW power plants are located at a Rosch site in Thailand where they power that site and feed electricity into the grid ...



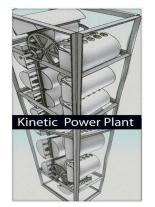


Image from https://rosch.ag

pdf/NET0516S6-9.pdf

#### Self-running and zero emission power plants from the company Rosch Innovations 2 / 2

... An inspection by an engineer team of the potential customer or potential licensee allows a verification of the genuineness of the power plant and rule out possible objections such as a hidden power source.

As already mentioned, an industrial size power plant at a publicly known and visitable customer site does not yet exist. However, globally there are some power plants under construction and some projects are in the planning stage, see e.g. the website https://wvge-me.com which presents projects and a roadmap for Montenegro and other Balkan states.

The author of this presentation assumes that these power plants extract via the earth's gravitational field and / or via the electromagnetic fields within the generator and the spin of the electrons usable energy from an everywhere present form of energy which is called space energy, vacuum energy, zero-point energy, or ether energy. For further information and references see the following report: https://novamresearch.com/kinetic-power-plants-from-rosch-innovations.php



Picture from the 100 kW demo plant in Thailand. Image from a screenshot on 6 June 2022 from https://www.kitech.global/home-login . A similar picture is shown in https://wvge-me.com

## Self-running and zero emission magnet motor / generator systems from the company Quantum Energy (Inductance Energy) Corporation

The company Inductance Energy Corporation has developed a magnet motor, called Earth Engine, with a mechanical output power up to 25+ kW which can propel a mechanical device or an alternator with a maximal electrical output power in the range from 7 to 25 kW. To control the magnet motor an electrical input power of about 300 W is required. If the magnet motor propels an alternator, then these about 300 W can be provided by the alternator which results in an overall self-running and zero-emission energy technology. In the United States these systems are already in production and use on a small scale. Various interesting information are presented on pages 25 - 53 in a German-language slide set (61 pages, 5 MB pdf) from a talk by Adolf Schneider about magnet motors on 3 October 2020 at a conference about novel energy technologies in Germany: Meanwhile the activities of the Inductance Energy Corporation are transferred to the company Quantum Energy Corporation. In their website https://qree.energy there is under Magnet a webpage called Magnetic Propulsion which displays still (since the beginning of January 2024) the message "Soon to be released". The former website https://ie.energy of the Inductance Energy Corporation is still existing but displays no content. The author of this presentation assumes that these systems extract via electromagnetic fields and the spin of the electrons usable energy from an everywhere present form of energy which is called space energy, vacuum energy, zero-point energy or ether energy. For further information and references see the home page of https://novam-research.com



Image taken on 6 October 2019 from a video in the previous website https://ie.energy

### Power-amplifying and zero emission AC generators without moving parts from the company Holcomb Energy Systems

Dr. Robert Holcomb and co-workers from the company Holcomb Energy Systems have developed power-magnifying electromagnetic AC generators without moving parts. They generate at least a doubled output power with respect to the input power. They are called in-line power generators (ILPGs) and the already existing systems generate an output power in the range from 3 kW to 500 kW. The specified input and output power of various Holcomb Energy Systems was confirmed by established certification companies such as SGS. The technology of the Holcomb Energy Systems is protected by several patents and patent applications in many countries. See e.g. WO2023118149A1 (4 MB pdf) which was published on 29 June 2023 and about it a paper from Adolf Schneider in German but with many citations in English. Before market launch it appears desirable to perform a field test and study in more detail the dependence of the AC power amplification factor and other AC features like idle power, real power, and phase angle on various types of loads. Also potential AC effects on the grid have to be considered. The fundamental operating principle of the ILPG appears related to the patent DE3501076A1 from Dr. Wolfgang Volkrodt which is presented on pages 40 and 41. The author of this presentation assumes that the Holcomb Energy Systems extract via electromagnetic fields and the spin of the electrons usable energy from an everywhere present form of energy which is called space energy, vacuum energy, zero-point energy, or ether energy. For further information and references see the home page of https://novam-research.com and the company website https://holcombenergysystems.com



Image source: Screenshot on 7 April 2023 from the website https://holcombenergysystems.com

# Self-running and zero emission electromagnetic generators without moving parts (called AISEG) from the company SEMP Research Institute Co. Ltd.

The company SEMP Research Institute Co. Ltd. has developed a self-running electromagnetic generator without moving parts. It is called AISEG which stands for Artificial Intelligence Smart Electromagnetic Generator. SEMP website: https://www.semp.or.kr/en Two short videos (a few minutes) about the AISEG: https://www.youtube.com/watch?v=SLJH8Ad2b44

from December 2023 and

#### https://www.youtube.com/watch?v=VgsPcGvLyn4

from December 2018. The technology of the AISEG is scalable, i.e. generators with an output power from 5 kW to several 100 kW and more can be manufactured. The gravimetric power density of an AISEG is about 28 W / kg. For the AISEG technology more than 70 patents were applied in 60 countries. A patent application which describes the fundamentals is for example the United States patent application publication US20230198368A1 which was published on 22 June 2023 and can it be downloaded e.g. via the following link: https://novam-research.com/resources/United-States-Patent-Application-US20230198368A1\_2023.pdf



AISEG at the Expo COP28 in Dubai in December 2023. On the right there are overall 60 lamps which can be used as load at the output of the AISEG. Image source: Screenshot on 7 July 2024 from https://www.semp.or.kr/en

1/2

# Self-running and zero emission electromagnetic generators without moving parts (called AISEG) from the company SEMP Research Institute Co. Ltd.

On the right: Woo Hee Choi, co-founder and CEO of SEMP and main co-inventor of the AISEG, on 23 June 2024 at a German-language conference about novel energy technologies and related topics nearby Stuttgart in Germany. Overall seven staff members from SEMP were there and presented a talk about the AISEG. There was a translation from Korean into English and from English into German. A German-language report about (this conference and) the AISEG is published on pages (4) 21 - 23 (25) in the July / August 2024 issue of the German-language NET Journal (ISSN 1420-9292). The fundamental operating principle of the AISEG appears related to the patent DE3501076A1 from Dr. Wolfgang Volkrodt which is presented on pages 40 and 41. The author of this presentation assumes that the AISEG extract via electromagnetic fields and the spin of the electrons usable energy from an everywhere present form of energy which is called space energy, vacuum energy, zero-point energy or ether energy. For further information and references see the home page of https://novam-research.com



Image source: Newsletter from June 2024 from the Austrian Association for Space Energy (ÖVR)

2/2



Image source: Screenshot on 8 July 2024 from video https://www.youtube.com/watch?v=SLJH8Ad2b44

#### Intermediate comment about the term zero emission and electromagnetic pollution

Most systems presented on the previous and following pages are called zero emission devices.

The term zero emission usually means that the system does not generate exhaust gases, small exhaust particles, nuclear radiation, and radioactive waste.

Usually not considered but nevertheless significant are electromagnetic fields and radiation which are generated by most systems. This is also called electromagnetic pollution or electrosmog which is often harmful for humans and other life forms. Harmful are e.g. wireless communication technologies like 5G, smartphones, WLAN / Wifi, Bluetooth, small battery chargers which convert e.g. 230 V AC into a small DC voltage, power saving lamps, fluorescent tubes, and various kinds of converter such as DC / AC (which are e.g. used at photovoltaic systems), AC / DC, and DC / DC. Such converter are sometimes part of the entirely novel energy technologies.

There are several types of mainly non-mainstream technologies which can neutralize or harmonize the negative biological effects of electromagnetic pollution.

For references and further information see for example

- German company Florian König Enterprises GmbH (also available in English): https://www.fk-e.de
- Webpage https://novam-research.com/electrosmog.php

#### Various types of self-running and zero emission magnet motors 1/3

An example of a self-running magnet motor is that from the Turkish inventor Muammer Yildiz. It comprises a special array of permanent magnets. A self-running prototype was for example presented in the Netherlands at the Eindhoven University of Technology in April 2009 and at the University of Delft in May 2010: https://www.youtube.com/watch?v=mHW6b1aFPfU

Two papers by Dr. J. L. Duarte from the Department of Electrical Engineering of the Eindhoven University of Technology: "Introducing the Yildiz Motor" and "Modeling the Yildiz Motor" from 2010 and

Image:from www.hmsbturk.com

"Introducing the Yildiz Motor" and "Modeling the Yildiz Motor" from 2010 and 2012 https://novam-research.com/resources/Introducing-and-modeling-the-Yildiz-Motor\_v01.pdf

The author of this presentation assumes that the Yildiz Motor and other magnet motors extract via magnetic fields and the spin of the electrons usable energy from an everywhere present form of energy which is called space energy, vacuum energy, zero-point energy, or ether energy.

There were several attempts to advance the Yildiz Motor concept towards commercial applications. However, they were not successful because discussions between Muammer Yildiz, supporters, and potential investors did not result in mutual agreements.

For further information and references about the Yildiz Motor and other magnet motors see the home page of https://novam-research.com

#### Various types of self-running and zero emission magnet motors 2 / 3

#### Examples of papers or reports about magnet motor concepts

German-language report by Adolf Schneider about various magnet motor concepts on pages 35 - 38 in the November / December 2022 issue of the NET-Journal (www.borderlands.de/inet.jrnl.php3) (ISSN 1420-9292) (in German)

Paper "Essay on Magnetic-Wind Mills - Part 1: Analysis and Design\* from 2019 by Dr. J. L. Duarte from the Department of Electrical Engineering of the Eindhoven University of Technology: https://doi.org/10.6100/94FC4756-AC0A-4A9C-A1DD-58530E694BB8 . "Part 2: Staying Power from Spacetime" from 15 Nov 2022, can be downloaded via the following link: https://novam-research.com/resources/Essay-on-Magnetic-Wind-Mills Part2 J-L-Duarte v4 15-Nov-2022.pdf

Design and Simulation of Self-Running Magnetic Motor from 2017 by Abdul Halim Ali and Ahmad Najmuddin Che Ismail https://www.researchgate.net/publication/335257538 . Or download it as pdf via the following link: https://novamresearch.com/resources/Design-and-Simulation-of-Self-Running-Magnetic-Motor\_A-H-Ali-and-A-N-C-Ismail\_2017.pdf

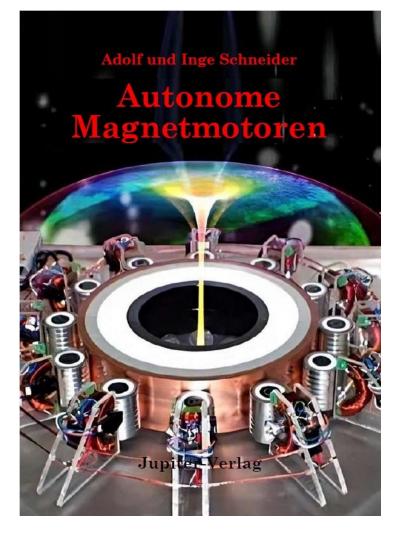
Design and Simulation of Free Energy Permanent Magnet Motor (FEPMM) from 2016 by Amel Ridha: https://www.researchgate.net/publication/307513635

The following paper from 2015 presents in its introduction various types of magnet motors and reports about an own concept: Design of open source straight permanent magnet motor, Amel Ridha and Haider H. Jabbe, Kufa Journal of Engineering, Volume 6 (2015), pages 24 - 38: https://doi.org/10.30572/2018/KJE/621146 . Also published via https://www.researchgate.net/publication/307513641

A review on how a Perpetual Motion Machine generates electrical power, M. N. Hidayat, S. P. Chairandy, and F. Ronilaya IOP Conference Series: Materials Science and Engineering 1098 (2021) 042063 https://doi.org/10.1088/1757-899X/1098/4/042063

#### Various types of self-running and zero emission magnet motors 3 / 3

German-language book "Autonome Magnetmotoren" about self-running magnet motors



Authors: Adolf and Inge Schneider First edition June 2024, ISBN 978--3-906571-47-8

A5 type format (15 cm x 21 cm), 470 pages

Publisher: Jupiter-Verlag , https://www.jupiter-verlag.ch and https://www.Jupiter-verlag.ch/shop/detail\_neu.php?artikel=160&fromMain=j See also https://gehtanders.de/produkt/autonome-magnetmotoren (in German)

Presented in this German-language book are more than 20 types of magnet motors and also the self-running magnet motor / generator systems from the company Quantum Energy (Inductance Energy) Corporation, the solid state power amplifiers from the company Holcomb Energy Systems, the self-running solid state electromagnetic generators from the company SEMP Research Institute Co. Ltd., and the self-running kinetic power plants from the company Rosch Innovations / Save The Planet AG which comprise specially modified electromagnetic generators. The four latter systems are also presented in this work.

#### Self-running and zero emission cryogenic magnet motor of Walter Thurner

The cryogenic magnet motor of the German engineer and inventor Walter Thurner is a nice example of a self-running system because its operation principle is published and comprehensible at the macroscopic scale. It can be understood just by considering the acting forces which operate in its design. The author of this presentation assumes that this magnet motor extracts at the microscopic scale via magnetic fields and the spin of the electrons usable energy from an everywhere present form of energy which is called space energy, vacuum energy, zero-point energy, or ether energy. The magnet motor of Walter Thurner is described in the Appendix. It is called cryogenic magnet motor because its design comprises besides permanent magnets also superconductors which have to be cooled with liquid nitrogen. Walter Thurner died on 12 February 2021.



Images from https://novam-research.com/resources/Walter-Thurner Kryo-Magnet-Motor.pdf



#### **Reactionless electromagnetic generator of Paramahamsa Tewari**

The Indian engineer and researcher Paramahamsa Tewari has developed a reactionless electromagnetic generator, the Space Vortex Theory, and has written several papers and books.

Website about him and his work: https://www.tewari.org

Paramahamsa Tewari passed away on 27 November 2017 in India. An obituary is published in https://www.tewari.org and by the Austrian association GAIA:



Image from https://www.tewari.org

https://gaia-energy.org/obituary-paramahamsa-tewari/#more-110681

So far a generator with 1,7 kW input power and 4,4 kW output power was constructed and tested (3 phase 220 V AC, 50 Hz). The next intended step was the development of a self-running 10 kW or 15 kW generator and / or a commercial 50 kW machine starting with 250 % efficiency.

Presentation from Paramahamsa Tewari and Toby Grotz, lectured by Toby Grotz in 2016 in Germany (file size 4 MB pdf): https://novam-research.com/resources/Tewari-generator\_Physics\_Teslas-prophecy\_P-Tewari-and-T-Grotz\_2016\_v2.pdf

The author of this presentation assumes that the Tewari generators extract via electromagnetic fields usable energy from an everywhere present form of energy which is called space energy, vacuum energy, zero-point energy, or ether energy. For further information, references, and links see https://novam-research.com/tewari.php

#### EBM (Energy by Motion) – Self-running and zero emission generators of L. I. Szabo 1/2

After December 2017 the former EBM website gammamanager.com was no longer available. In January 2024 it was noticed it is online again and in May 2025 it was noticed it is no longer available again.

In the period from 1980 to 2005 overall 108 different generators with an unconventional design were constructed and tested (see also page 73). Finally it was discovered that a specific type of design resulted in an electric plus thermal output power which was larger than the electric input power. A scaling law was found which predicts the ratio electric output power / electric input power versus the size of the generator. That scaling law indicated that self-running systems were only possible for big and heavy machines with an output power in the MW range. Then it was intended together with customers



Image from previous website gammamanager.com

to establish such self-running industrial size generators. In February 2007 the author of this presentation was a member of a group who visited for 2 days the main inventor of this technology, Leslie I. Szabo, at his laboratory and company in Budapest in Hungary. There several models of generators were available but no self-running system. The assessment from the author of this presentation is that the research and development, the testing of the generators, and the obtained scaling law are sound and genuine. At the same time the author of this presentation had in Budapest in February 2007 and in the following years the impression that the overall project should have been communicated in another way. Potential customers wanted to see a self-running generator before they finance or co-fund a self-running power plant in the MW range.

## EBM (Energy by Motion) – Self-running and zero emission generators of L. I. Szabo 2 / 2

Later (concepts for) smaller self-running generators were developed. In the previous content of the EBM website self-running generators with an output power from 50 kW to 20 MW were

offered and it was mentioned that smaller / larger systems down to 2 kW / up to 75 MW are under development. In January 2024 EBM units with a projected size from 25 kW to 1 MW are specified in the EBM website. The author of this presentation assumes that the EBM generators extract via electromagnetic fields and the spin of the electrons usable energy from an everywhere present form of energy which is called space energy, vacuum energy, zero-point energy or ether energy. Refs. and further information:



Image from previous website gammamanager.com

- Report on pages 4 14 in the issue January / February 2007 of the NET-Journal (in German): www.borderlands.de/net\_pdf/NET0107S4-14.pdf
- Report in German on pages 25 and 26 in the issue November / December 2009 of the German-language NET-Journal (www.borderlands.de/inet.jrnl.php3) (ISSN 1420-9292)
- Abstract of a talk by Leslie Szabo at the congress "Neue Technologien im Einsatz" in November 2009 (in German): https://novam-research.com/resources/EBM2.pdf
- Report in German on pages 23 and 24 in the issue March / April 2010 of the NET-Journal
- The EBM website gammamanager.com is cited in the following paper: https://aias.institute/documents/miscellaneous/SpaceEnergy.pdf

#### **ECAT - Self-running and zero emission electricity generators**

Websites: https://ecatthenewfire.com (official ECAT website) and https://e-catworld.com The image on the right displays a small and self-running electricity generator which is called E-Cat SKL NGU 10 W. Some of its specifications: DC output power / voltage 10 W / 12 V, diameter 6 cm, height 3 cm, weight 100 g, and expected operational lifespan more than 11 years. This and also generators with the following output power can be pre-ordered: 100 W, 1 kW, 2 kW, 3 kW, 5 kW, 10 kW, 1 MW, and custom size. The 5 kW generator, for example, has the Image from dimensions 15 x 25 x 50 cm and a weight of 6 kg. Datasheet of the generators: https://ecatthenewfire.com https://ecatthenewfire.com/wp-content/uploads/2025/01/E-Cat-Power-NGU-DataSheet-2024-12-3.pdf The production and delivery of some of the pre-ordered generators starts presumably in 2025, see also the two following videos from May 2025: https://www.youtube.com/watch?v=Cx3vw2hJLWs and https://www.youtube.com/watch?v=lvXhwMOdYIc. Some of the essential components of the ECAT electricity generators are a (small) vacuum tube which is filled with a low pressure inert gas, a magnet which influences the motion and spatial arrangement of electrons in the vacuum tube, and a special electronic control. It allows the extraction of usable energy from an everywhere present form of energy which is called zero-point energy, vacuum energy, space energy, or ether energy. Click here

to view a Japanese patent application JP2022188336A (abstract also in English) from the inventor Andrea Rossi which was published on 21 December 2022.

For further information see the report <a href="https://novam-research.com/ecat.php">https://novam-research.com/ecat.php</a>

E-CAT. THE NEW FIRST

#### So-called neutrino voltaic - Self-running and zero emission electricity generators 1 / 2

The foundation of the so-called neutrino voltaic is a special physical phenomenon which is observed by several researchers and inventors, namely that a proper metal foil with an appropriate coating generates a small and permanent DC voltage and power, see e.g. a German-language report on pages 4 - 6 in the March / April 2023 issue of the NET-Journal (ISSN 1420-9292) (in German). An example which can be manually prepared is the layered arrangement

Appropriate metal (e.g. aluminum) foil | Special silicone tape | Fine graphite powder

Its manual manufacturing is shown in a video without sound in a German-language webpage from the Austrian soceity GAIA about the so-called neutrino voltaic: https://gaia-energy.org/neutrino-energy-neutrinovoltaik-waver-manuell-vs-industriell . There it is the left video under "Videos zur Veranschaulichung".

The company Neutrino (https://neutrino-energy.com) is focussed on research, development, and advancement of the sketched arrangement of materials. The currently achieved power density of such a layered arrangement is 50 W per square meter and several of them can be stacked. The stacking requires the presence of a high mechanical pressure, otherwise the unit does not work properly.

|   | F | Matallia tan asat                                                                                      |  |
|---|---|--------------------------------------------------------------------------------------------------------|--|
|   | 5 | Metallic top coat                                                                                      |  |
|   | 4 | Layer / thin film of another appropriate<br>material such as doped silicon                             |  |
|   | 3 | Layer / thin film<br>of graphene Large intrinsic amplitude of vertical<br>oscillations of carbon atoms |  |
| Ŭ | 2 | 2 Layer / thin film of another appropriate<br>material such as doped silicon                           |  |
|   | 1 | Metallic substrate such as a foil made of (doped) aluminum                                             |  |
|   |   |                                                                                                        |  |

#### So-called neutrino voltaic - Self-running and zero emission electricity generators 2 / 2

The company Neutrino and their partners are working on the development of a self-running and zero emission propulsion for electric cars and self-running and zero emission electrical generators which can power a home for example. In Austria a field test of 5 kW generators is currently in the planning stage, see the following German-language website from the Austrian soceity GAIA: https://gaia-energy.org/neutrinovoltaik-feldtest

The author of this presentation assumes that neutrinos do not play a role in the underlying physics how the electricity is generated. Instead the author of this presentation assumes that the sketched arrangement of materials (see previous page) extracts via electromagnetic fields and the spin of the electrons usable energy from an everywhere present form of energy which is called space energy, vacuum energy, zero-point energy, or ether energy. For further information and references see the report https://novamresearch.com/neutrino-inc.php



So-called Neutrino Power Cube, a self-running and zero emission generator with an output power of 5 kW. Image source: Some videos which are posted in https://neutrino-energy.com and https://www.youtube.com/@neutrinoenergy such as

https://www.youtube.com/watch?v=JQN4escE6t4 and

https://www.youtube.com/watch?v=LiswrRR8H2Q

#### Reid Cell or Crystal Cell – Low power electricity generators 1 / 2

The Reid Cell or Crystal Cell provides a small amount of electrical DC power of about 1 mW over a very long period of time, so far since 1998. This and some other features cannot be explained solely by conventional electrochemical effects. The Reid Cell or Crystal Cell and the results of various studies of their properties is presented in the following video from 2023 by Eckhard Kantz and Marcus Reid: https://www.dailymotion.com/video/x93j7o4 . Websites: https://vakuumenergie.de and https://quantumpowermunich.de For comments on the Reid Cell or Crystal Cell see https://quantumpowermunich.de/wpcontent/uploads/2023/12/Comments-Reid-Cell.pdf and / or https://vakuumenergie.de/wpcontent/uploads/2023/12/Comments-Reid-Cell.pdf . The Reid Cell or Crystal Cell represents an interesting topic for further research, development, and advancement, especially with respect to the origin of the electrical power and how the power can be increased.



Image source: See for example https://vakuumenergie.de

#### Reid Cell or Crystal Cell – Low power electricity generators 2 / 2



Image source: Screenshot from former video dailymotion.com/video/x8lkslc from March 2024 A book about the Reid Cell or Crystal Cell is already available or coming soon

Title: Reid Cell

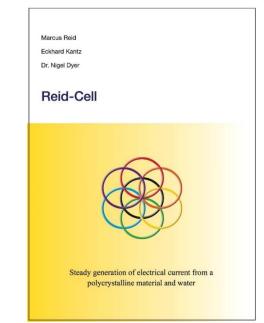
Authors: Marcus Reid, Eckhard Kantz, and Dr. Nigel Deyer

https://vakuumenergie.de

https://vakuumenergie.de/book

https://www.kulturkaufhaus.de/en/detail/ISBN-9783982213729/Reid-Marcus/Reid-Cell

For further information like front cover, back cover, foreword, and contents see https://quantumpowermunich.de/wp-content/uploads/2024/04/Marcus-CC-Innenseiten-Eriks-Edits.pdf and / or https://vakuumenergie.de/wp-content/uploads/2025/03/Marcus-CC-Innenseiten-book-prev.pdf



#### Self-running and zero emission generators based on autonomous hydraulic oscillations 1/2

This self-running and zero emission energy technology is based on specific type of constructions which are operated with water or another fluid, or under water, or under a high internal water / fluid and gas pressure. These systems are also called self-running ram pumps and generate usable mechanical, electric and / or thermal energy via autonomous hydraulic oscillations. The self-running ram pumps mentioned here were constructed and advanced by the Russian inventor Dr. V. Marukhin and his co-workers. There are various kinds of constructions and sizes. For example, a steel tube design with a height and diameter of 42 cm and 15 cm that is operated with an internal fluid and gas pressure and oscillation frequency of about 3000 bar and 3000 Hz, respectively, generates a permanent electric output power up to 1 MW. The mechanical energy of the hydraulic water / fluid and gas oscillations is converted into electric energy by piezoelectric transducers. The transformation of the generated DC electricity into a convenient form of AC electricity requires a DC / DC and a DC / AC converter. The author of this presentation assumes that these generators extract via the earth's gravitational field and / or the electromagnetic fields in and between the fluid / gas / steel atoms and the spin of the electrons usable energy from an everywhere present form of energy which is called space energy, vacuum energy, zero-point energy, or ether energy.



Image from Ref. 1 which is provided on the next page

#### Self-running and zero emission generators based on autonomous hydraulic oscillations 2 / 2

These types of generators are already in use at some undisclosed industrial customers. Demonstration generators which can be viewed and inspected on request do so far not exist and attempts to make such devices available are stuck because of the imposed sanctions against Russia. So far there are only undisclosed customers and they have not reported their experiences with their generator and their associated DC / DC converter and DC / AC converter. Therefore several items are not yet concretely known, namely the design of an appropriate DC / DC converter, the behavior of the generators and converters under various conditions such as a resistive, capacitive, and / or inductive load, and the power stability and safety over a long period of time.

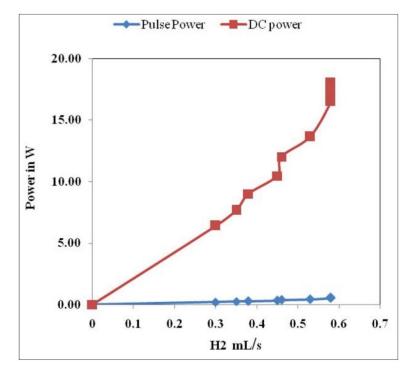
Image from Ref. 1

For further information see

- [1] Presentation by Adolf Schneider from May 2021 (40 pages, 3 MB pdf): https://novam-research.com/resources/HEG-Presentation-English\_May-2021.pdf
- [2] Report https://novam-research.com/ram-pumps.php

## Water splitting by pulsed electrolysis 1/3

In established physics / chemistry / science it is assumed that the modulus of the energy which is required to split a water molecule (electrolytically) into hydrogen and oxygen is always equal to the modulus of the energy which is released when hydrogen and oxygen recombine into a water molecule. This is because the two hydrogen atoms and the one oxygen atom in a water molecule are bound together by electric or electromagnetic forces which are considered as so-called conservative force fields, i.e. a closed loop motion of a particle in such a force field can never result in a gain of usable energy. However, many researchers and inventors have claimed that under specific conditions it is possible to split water into hydrogen and oxygen with much less energy than usual. In this case usable energy can be generated when the created hydrogen and oxygen recombine into water with a release of the usual amount of energy.



This figure displays the effect of a conventional DC electrolysis and a pulsed electrolysis on the hydrogen production rate.

Image source: Figure 6 in a paper by C. H. Dharmaraj and S. AdishKumar, International Journal of Energy and Environment <u>3</u> (2012) 129 - 136

## Water splitting by pulsed electrolysis 2 / 3

The following work is a published example how water can be split into hydrogen and oxygen with much less energy than usual, namely by a special pulsed electrolysis:

Economical hydrogen production by electrolysis using nano pulsed DC

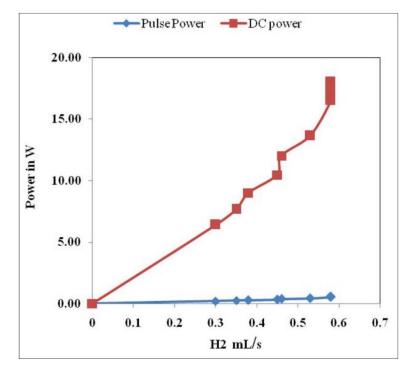
C. H. Dharmaraj and S. AdishKumar

International Journal of Energy and Environment <u>3</u> (2012) 129 - 136

www.ijee.ieefoundation.org/vol3/issue1/IJEE\_13\_v3n1.pdf

or

https://novam-research.com/resources/Water-splitting-by-pulsed-electrolysis\_2012.pdf

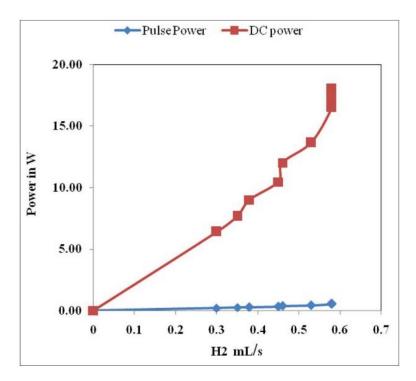


This figure displays the effect of a conventional DC electrolysis and a pulsed electrolysis on the hydrogen production rate.

Image source: Figure 6 in a paper by C. H. Dharmaraj and S. AdishKumar, International Journal of Energy and Environment <u>3</u> (2012) 129 - 136

## Water splitting by pulsed electrolysis 3 / 3

The authors of this paper have not discussed the potential physics behind this remarkable phenomenon. The author of this website assumes that any physical process can be performed / modified / designed in such a way that it taps an everywhere present form of energy which is called space energy, vacuum energy, zero-point energy, or ether energy. From this perspective it is assumed that a specifically pulsed electrolysis results somehow in an assisted water splitting, i.e. a large part of the required splitting energy is via electromagnetic fields and the spin of the electrons provided by the space energy, vacuum energy, zero-point energy, or ether energy.



This figure displays the effect of a conventional DC electrolysis and a pulsed electrolysis on the hydrogen production rate.

Image source: Figure 6 in a paper by C. H. Dharmaraj and S. AdishKumar, International Journal of Energy and Environment <u>3</u> (2012) 129 - 136

## Patent DE3501076A1 from 1986 by Dr. Wolfgang Volkrodt: Energy converter having a magnetic-core intermediate store

See e.g. https://patents.google.com/patent/DE3501076A1/en

Original German-language patent specification including figures: https://novam-research.com/resources/Patent-DE3501076A1.pdf

According to the description the energy which is stored in a ferromagnetic material after its magnetization is significantly larger than the energy which is necessary to magnetize the ferromagnetic material, at least under certain conditions. This phenomenon can be used to construct an electromagnetic device which provides at its ouput an amount of usable electric energy or power which is significantly larger than the energy or power which is feeded into its input.

Citations from the patent specification (Note from the author of this website: The text in the patent specification is a translation from German into English and there are sometimes translation errors) ...

## Patent DE3501076A1 from 1986 by Dr. Wolfgang Volkrodt: Energy converter having a magnetic-core intermediate store

" ... Let us briefly summarize the current state of knowledge: The necessary energy to magnetize or reverse magnetize a magnetic core store is considerably smaller than the energy content that can be measured afterwards in the permanent magnet ... Those to be expected according to previous theories of energy technology Alternating hysteresis losses are a multiple of what is actually required for reversal of magnetization supplied electrical energy. The theory does not agree with either the law of conservation of energy still match experimental experience ...

... Up to now, conventional physics has only known the real components of electricity, magnetism and gravity. In order to interactions between the aforementioned quantities To be able to describe it in terms of vibrations and eddies, however, is more complex Sizes. According to more recent theories, imaginary quantities must also be in our space as are assumed to be present, from which, under certain conditions, a transformation is possible in forms of energy known to us ...

... According to the above hyperenergy theory, one understands by ferromagnetism the alignment of unpaired electrons (they are small hyperspace vortices) around it to establish the resulting magnetic vector field ...

... Apparatus and machines that use hyperspace as an energy source use are not perpetual motion machines, but rather energy converters in the conventional sense ..."

2/2

## **International Space Federation (ISF)**

Website https://www.spacefed.com

YouTube Channel https://www.youtube.com/@intlspacefed

Swiss corporation with headquarters in Geneva and laboratories in France

Research and development in the field of (quantum) vacuum, gravity and unified physics which also includes



Image from a screenshot on 21 January 2024 of https://www.spacefed.com

entirely novel and environmentally friendly energy technologies. Research director is Nassim Haramein

Significant paper "The Origin of Mass and the Nature of Gravity" by Nassim Haramein, Cyprien Guermonprez, and Olivier Alirol - published on 26 September 2023 via zenodo.org: https://doi.org/10.5281/zenodo.10125315

The ISF did arise from a previous history comprising 30 years research, publications, and designs as well as the Resonance Science Foundation, education, and a few related smaller companies

Possibility to invest into the ISF / support the ISF via a participatory perpetual bond. The ISF issues in two stages maximal 200 Million notes denominated at 1 CHF per note. The minimum investment is 1000 CHF

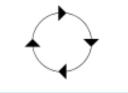
## ECE Theory and the Alpha Institute for Advanced Studies (AIAS)

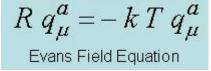
The AIAS is an affiliation of several physicists who have created a large number of papers and books about the so-called ECE Theory which provides evidence for energy technologies which extract usable energy from space-time. The ECE Theory and the AIAS was established by the British Civil List physicist Prof. M. W. Evans. The ECE Theory represents an unified field theory which was and is advanced by him and other scientists on a mainly voluntary basis. Among others, the ECE Theory implies

- that gravitation is related to the curvature of space-time
- that electromagnetism is related to the torsion of space-time
- a coupling between gravitation and electromagnetism
- an extended or advanced electrodynamics which involves the possibility to extract usable energy from space-time

For further information see

- an introduction into the ECE Theory H. Eckardt and L. G. Felker: https://aias.institute/documents/eceArticle/ECE-Article\_EN.pdf
- Paper "How Do Space Energy Devices Work" by Dr. Horst Eckardt: https://aias.institute/documents/miscellaneous/SpaceEnergy.pdf
- the official AIAS website: https://aias.institute





Images from former website aias.us

An abstract / summary of these both papers is presented on pages 47 and 48

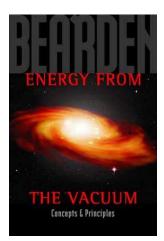
## Tom Bearden: His website, his Motionless Electromagnetic Generator (MEG), and his book \*Energy from the Vacuum – Concepts and Principles"

Tom Bearden passed away on 3 February 2022 and an obituary is published in the following link: https://obits.al.com/us/obituaries/huntsville/name/thomas-bearden-obituary?id=32759244 A German-language obituary is published on pages 50 - 52 in the March / April 2022 issue of the German-language journal NET-Journal (ISSN 1420-9292)

Tom Bearden's former website cheniere.org no longer exists but is still available via the website web.archive.org: https://web.archive.org/web/20220428030850/http://www.cheniere.org

It contains comprehensive information such as "A Partial List of Successful Documented EM Over-Unity and Negative Resistor Devices and Processes": https://web.archive.org/web/20220429004028/http://www.cheniere.org/misc/oulist.htm

The Motionless Electromagnetic Generator (MEG) of Tom Bearden is presented in https://web.archive.org/web/20220301131053/https://www.cheniere.org/megstatus.htm . In an e-mail to a professional electronics engineer from April 2003 he explains how the MEG works: https://web.archive.org/web/20220301131053/https://www.cheniere.org/correspondence/041303.htm or download it as pdf via the following link: https://novam-research.com/resources/MEG\_How-it-works\_e-mail-from-Tom-Bearden-to-a-professional-electronics-engineer-from-April-2003.pdf A paper about an explanation of the MEG is presented on the following page ...



Book "Energy from the Vacuum – Concepts and Principles" Published in 2004 Author: Tom Bearden 977 pages ISBN 0972514600 Preview Table of Contents

## Examples of papers about physical concepts for entirely novel energy technologies 1 / 12

Explanation of the motionless electromagnetic generator with O(3) electrodynamics

P. K. Anastasovski, T. E. Bearden et al.

Foundation of Physics Letters 14 (2001) 87 - 94

## https://doi.org/10.1023/A:1012085429802

Abstract: Recently, Bearden el al. developed a device which is known as a motionless electromagnetic generator (MEG) and which produces a coefficient of performance (COP) far in excess of unity. The device has been independently replicated by Naudin. In this communication, the fundamental operational principle of the MEG is explained using a version of higher symmetry electrodynamics known as O(3) electrodynamics, which is based on the empirical existence of two circular polarization states of electromagnetic radiation, and which has been developed extensively in the literature. The theoretical explanation of the MEG with O(3) electrodynamics is straightforward: Magnetic energy is taken directly ex vacua and used to replenish the permanent magnets of the MEG device, which therefore produces a source of energy that, in theory, can be replenished indefinitely from the vacuum. Such a result is incomprehensible in U(1) Maxwell-Heaviside electrodynamics.

| Foundations of Physics Letters, Vol. 14, No. 1, 2001                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
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| EXPLANATION OF THE MOTIONLESS<br>ELECTROMAGNETIC GENERATOR WITH O(3)<br>ELECTRODYNAMICS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| P. K. Anastasovski (1), T. E. Bearden (2), C. Ciub-<br>otariu (3), W. T. Coffey (4), L. B. Crowell (5), G.<br>J. Evans (6), M. W. Evans (7, 8), R. Flower (9),<br>A. Labounsky (10), B. Lehnert (11), M. Mészáros<br>(12), P. R. Molnár (12), J. K. Moscicki (13), S. Roy<br>(14), and J.P. Vigier (15)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Institute for Advanced Study, Alpha Foundation<br>Institute of Physics, 11 Rutafa Street, Building H<br>Budapest, H-1165, Hungary                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
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| <ol> <li>Faculty of Technology and Metallurgy, Department of<br/>Physics, University of Skopje, Republic of Macedonia; (2)<br/>CTEC Inc, Huntsville, Alabama; (3) Institute for Infor-<br/>mation Technology, Stuttgart University, Stuttgart, Ger-<br/>many; (4) Department of Microelectronics and Electrical<br/>Engineering, Trinity College, Dublin 2, Ireland; (5) Depart-<br/>ment of Physics and Astronomy University of New Mexico,<br/>Albuquerque, New Mexico; (6) Ceredigion County Coun-<br/>cil, Aberaeron, Wales, United Kingdom; (7) former Ed-<br/>ward Davies Chemical Laboratories, University College of<br/>Wales, Aberystwyth SY32 INE, Wales, United Kingdom;<br/>(8) sometime JRF, Wolfson College, Oxford, United Kingdom;<br/>(9) Applied Science Associates and Temple Univer-<br/>sity Center for Frontier Sciences, Philadelphia, Pennsylva-<br/>nia; (10) The Boeing Company, Huntington Beach, Califor-<br/>nia; (11) Alfvén Laboratory, Royal Institute of Technology,<br/>Stockholm, S-100 44, Sweden; (12) Alpha Foundation, In-<br/>stitute of Physics, 11 Rutafa Street, Building H, Budapest,<br/>H-1165, Hungary; (13) Smoluchowski Institute of Physics,<br/>Jagiellonian University, U Reymonta 4, Krakow, Poland;<br/>(14) Indian Statistical Institute, Calcutta, India; (15) La-<br/>boratoire de Gravitation et Cosmologie Relativistes, Uni-<br/>versité Pierre et Marie Curie, Tour 22-12, 4 ème étage, 4<br/>Place Jussieu, 7525 Paris, Cedex 05, France.</li> </ol> |
| 87                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
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## Examples of papers about physical concepts for entirely novel energy technologies 2 / 12

Classical Electrodynamics without the Lorentz Condition: Extracting Energy from the Vacuum

P. K. Anastasovski, T. E. Bearden, et al.

Physica Scripta 61 (2000) 513 - 517

## https://doi.org/10.1238/Physica.Regular.061a00513

Published also via www.aias.us/documents/mwe/omniaOpera/omnia-opera-563.pdf

Abstract: It is shown that if the Lorentz condition is discarded, the Maxwell–Heaviside field equations become the Lehnert equations, indicating the presence of charge density and current density in the vacuum. The Lehnert equations are a subset of the O(3) Yang–Mills field equations. Charge and current density in the vacuum are defined straightforwardly in terms of the vector potential and scalar potential, and are conceptually similar to Maxwell's displacement current, which also occurs in the classical vacuum. A demonstration is made of the existence of a time dependent classical vacuum polarization which appears if the Lorentz condition is discarded. Vacuum charge and current appear phenomenologically in the Lehnert equations but fundamentally in the O(3) Yang–Mills theory of classical electrodynamics. The latter also allows for the possibility of the existence of vacuum topological magnetic charge density and topological magnetic current density. Both O(3) and Lehnert equations are superior to the Maxwell–Heaviside equations in being able to describe phenomena not amenable to the latter. In theory, devices can be made to extract the energy associated with vacuum charge and current.

| P. K. Anastasovski <sup>1</sup> , T. E. Bearden <sup>2</sup> , C. Ciubotariu <sup>3</sup> , W. T. Cof<br>S. Jeffers <sup>10</sup> , A. Labounsky <sup>11</sup> , B. Lehnert <sup>12</sup> , M. Mészáros <sup>13</sup> , P. I                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | fley <sup>4</sup> , L. B. Crowell <sup>5</sup> , G. J. Evans <sup>6</sup> , M. W. Evans <sup>38</sup> , R. Flower <sup>5</sup><br>R. Molnár <sup>13</sup> , J. P.Vigier <sup>14</sup> and S. Roy <sup>16</sup>                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
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| Institute for Advanced Study, Alpha Foundation, Institute of Physics, II Rut                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | afa Street, Building H, Budapest, H-1165, Hungary                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
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| <sup>1</sup> Beach of Relativity and Monling, Donatomet of Popies, University -<br>2005, CPC Ett. In: Phanelin, R.A. U.S.<br>Buchten for Information, Rading, Statigart, University, Statigart, Gren<br>Dynamical of Mayles and Attonomy, University of New Mexico, Alloug<br>Thing: Calify Convention, Grand Pacias, Sci. 1999, O'College of Wal-<br>bergarine of Physics and Attonomy, University of New Mexico, Alloug<br>Thing: Calify Convention, Grand Pacias, Sci. 1999, O'College of Wal-<br>sending, BEF, Wolfson Collego, Oxford, Grean Brian<br>(2005, Appello Science Associates and Thurship University Thurship Change<br>Department of Physics and Attonomy Work University Thurship Change<br>Department of Physics and Attonomy Work University Thurship Change<br>Dynamics of Physics and Nationary Science (Science, Science, Science,<br>Allow, Lancetter, Phys. Institute of Mexicology, Stuchetter, Science, Science<br>(Science), Science (Science), Science (Sc                         | 20<br>C Dolan J. Ireland<br>aregun, New Masico<br>16, Aberytstryth SYSI INE, Walos, Great Britain<br>moniphania, USA<br>weden                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <sup>13</sup> Alpha Foundation, Institute of Physics, II Rutafa Street, Building H, Budi<br><sup>14</sup> Laboratoire de Gravitation et Cosmologie Relativistes, Université Pierre et<br>Alpha Street, Company and Cosmologie Relativistes, Université Pierre et<br>Alpha Street, Company and Company and Company and Company and Company<br>and Company and Company and Company and Company and Company and Company<br>and Company and Company and Company and Company and Company and Company<br>and Company and Company and Company and Company and Company and Company<br>and Company and Company and Company and Company and Company and Company<br>and Company and Company and Company and Company and Company and Company<br>and Company and Company and Company and Company and Company and Company<br>and Company and Company and Company and Company and Company and Company<br>and Company and Company<br>and Company and Company                    | apest, H-1165, Hungary<br>1 Maria Ousia Torre 23-13 Alman Isaan, RD 143, 4 Maran Justian, 25353 Basis                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
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| "George Mason University Virginia, and Indian Statistical Institute, Calcut                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | ta, India                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Received October 20, 1999; accepted December 3, 1999                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
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| Both O(1) and Lehner equations are superior to the Maxwell-Heavide<br>equation in bicage able to describe phenomena not amenable to the later.<br>In theory, devices can be made to extract the energy associated with vacuum<br>change and current                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | the vacuum. The Lehnert and O(3) equations are successful<br>in describing several phenomena not amenable to th<br>Maxwell-Heaviside equations (6-12). The fundamental O(3<br>equations also have the structure of the phenomenologica<br>Harmuth field equations (13-15) and are homomorphic with                                                                                                                                                                                                                                                                                                                                                                             |
| Both O(1) and Lehner equations are superior to the Maxwell-Heavide<br>equation in bicage able to describe phenomena not amenable to the later.<br>In theory, devices can be made to extract the energy associated with vacuum<br>change and current                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | in describing several phenomena not amenable to the<br>Maxwell-Heaviside equations [6-12]. The fundamental O(3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
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| Both O(3) and Lehnert equations are superior to the Maxwell-Heaviside<br>equations in being able to describe phenomena not amenable to the latter.<br>In theory, devices can be made to extract the energy associated with sucuum                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | in describing several phenomena not amerable to the<br>Maxwell-Hawiki equations [4–13]. The fundamental OO<br>equations also have the structure of the phenomenological<br>Harmuth field equations [1-13, fin and the homemorphic with<br>the Barrett field equations [14,7]. Finally as host discussion<br>is given of the solubility of extracting electric and magnetic<br>energy from the vacuum.<br><b>2. The Lorentz condition</b><br>Jackson [1] discusses the Lorentz condition on p. 181 of the<br>first edition. It is clear from his discussion that if initially<br>$\partial_{\mu} K^{\mu} \neq 0$ (2)                                                            |
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Physica Scripta. Vol. 61, 513-517, 2000

## Examples of papers about physical concepts for entirely novel energy technologies 3 / 12

How Do Space Energy Devices Work?

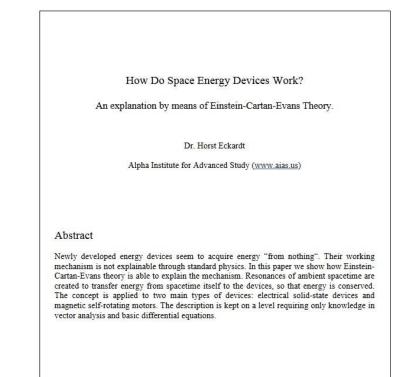
An explanation by means of Einstein-Cartan-Evans (ECE) Theory

## Horst Eckardt

Published via the website aias.institute of the Alpha Institute for Advanced Studies (AIAS):

## https://aias.institute/documents/miscellaneous/SpaceEnergy.pdf

Abstract: Newly developed energy devices seem to acquire energy "from nothing". Their working mechanism is not explainable through standard physics. In this paper we show how Einstein-Cartan-Evans (ECE) theory is able to explain the mechanism. Resonances of ambient spacetime are created to transfer energy from spacetime itself to the devices, so that energy is conserved. The concept is applied to two main types of devices: electrical solid-state devices and magnetic self-rotating motors. The description is kept on a level requiring only knowledge in vector analysis and basic differential equations.



## Examples of papers about physical concepts for entirely novel energy technologies 4 / 12

This paper presents an introduction into the Einstein-Cartan-Evans (ECE) theory

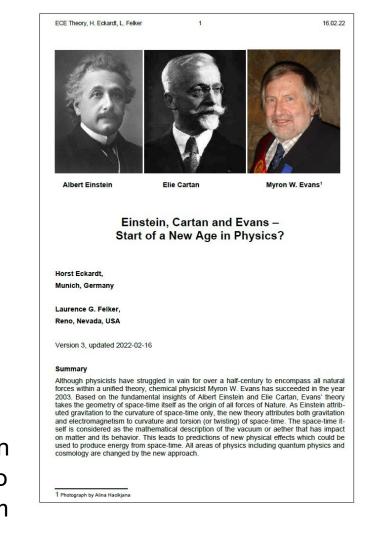
Einstein, Cartan and Evans – Start of a New Age in Physics?

Horst Eckardt and Laurence G. Felker

At least version 3 from February 2022

Published via the website aias.institute of the AIAS: https://aias.institute/documents/eceArticle/ECE-Article\_EN.pdf

Summary: Although physicists have struggled in vain for over a half-century to encompass all natural forces within a unified theory, chemical physicist Myron W. Evans has succeeded in the year 2003. Based on the fundamental insights of Albert Einstein and Elie Cartan, Evans' theory takes the geometry of space-time itself as the origin of all forces of Nature. As Einstein attributed gravitation to the curvature of space-time only, the new theory attributes both gravitation and electromagnetism to curvature and torsion (or twisting) of space-time. The space-time itself is considered as the mathematical description of the vacuum or ether that has impact on matter and its behavior. This leads to predictions of new physical effects which could be used to produce energy from space-time. All areas of physics including quantum physics and cosmology are changed by the new approach.



## Examples of papers about physical concepts for entirely novel energy technologies 5 / 12

Paper about a discussion of the calculation of magnetic fields of permanent magnets and arrangements of permanent magnets which lead to a self-running motion

Essay on Magnetic-Wind Mills - Part 1: Analysis and Design

J. L. Duarte (2019)

## https://doi.org/10.6100/94FC4756-AC0A-4A9C-A1DD-58530E694BB8

Abstract: A methodology for the synthesis of a prime mover is presented, based only on attraction / repulsion of permanent magnets. The design example is given for a demonstration prototype that has the potential to unfold, in theory, the sustainable generation of 22 W mechanical power at 1000 rpm and beyond.

C UNIVERSITY OF TECHNOLOGY Essay on magnetic-wind mills part I analysis and design Citation for published version (APA): Duarte, J. (2019). Essay on magnetic-wind mills part I analysis and design. https://doi.org/10.6100/94FC4756 ACDA.4ABC.4DD.58550CF694BB8. DOI: 10.6100/94FC4756-AC0A-4A9C-A1DD-58530E694BB Document status and date: Published: 11/02/2019 Document Version: Accepted manuscript including changes made at the peer-review stage beck the document version of this publication manuscript is the version of the article upon submission and before peer-review. There can be erences between the submitted version and the official published version of record. People ted in the research are advised to contact the author for the final version of the publication, or visit the the publisher's website al author version and the galley proof are versions of the publication after peer revie Link to publicatio nder the terms of Article 25fa of the Dutch Copyright Act, indicated by th Take down policy If you believe that this document breaches copyright please contact us a nich nur stenitseuni liw ew has sliste unur clain

A version of Part 2, namely "Staying Power from Spacetime" from 15 Nov 2022, can be downloaded via the following link: https://novam-research.com/resources/Essayon-Magnetic-Wind-Mills\_Part2\_J-L-Duarte\_v4\_15-Nov-2022.pdf . Abstract: One of the missing links in support of the allegation that devices with only magnets seemingly generate useful energy "out of thin air" could be Spacetime twisting. This discussion paper applies the concept to self-rotating machines previously claimed in patents.

## Examples of papers about physical concepts for entirely novel energy technologies 6/12

This paper presents in its introduction various types of magnet motors and reports about an own concept

Design of open source straight permanent magnet motor

Amel Ridha and Haider H. Jabbe

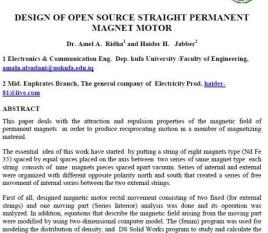
Kufa Journal of Engineering 6 (2015) 24 - 38

https://doi.org/10.30572/2018/KJE/621146

Published also via https://www.researchgate.net/publication/307513641

Abstract: This paper deals with the attraction and repulsion properties of the magnetic field of permanent magnets in order to produce reciprocating motion in a member of magnetizing material. The essential idea of this work have started by putting a string of eight magnets type (Nd Fe 35) spaced by equal spaces

placed on the axis between two series of same magnet type each string consists of nine magnets pieces spaced apart vacuum. Series of internal and external were organized with different opposite polarity north and south that created a series of free movement of internal series between the two external strings. First of all, designed magnetic motor rectal movement consisting of two fixed (for external strings) and one moving part (Series Interior) analysis was done and its operation was analyzed. In addition, equations that describe the magnetic field arising from the moving part were modified by using two-dimensional computer model. The (femm) program was used for modeling the distribution of density, and DS Solid Works program to study and calculate the magnetic flux density, field strength and torque generated.



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KEYWORDS

Kufa Journal of Engineering Vol. 6, No. 2, June, P.P.24-38

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Attraction, Flux Density, Free Open Source, Permanent Magnet Motor and Repulsion

## Examples of papers about physical concepts for entirely novel energy technologies 7 / 12

A review on how a Perpetual Motion Machine generates electrical power

## M. N. Hidayat, S. P. Chairandy, and F. Ronilaya

IOP Conference Series: Materials Science and Engineering 1098 (2021) 042063 (1 - 7)

## https://doi.org/10.1088/1757-899X/1098/4/042063

Abstract: Electrical energy demand is increasing in accordance with rapid growth of the human population. Since fossil fuels is the most widely used energy source, thus it is depleting very fast. Alternative energy source is urgently needed to replace the use of conventional energy sources. Perpetual Motion Machine (PMM) which can be applied to produce electricity, may be an alternative solution for the problem the world is facing today. The machine is designed to generate power from repulsive forces of permanent magnet without utilizing external sources. Some researches had conducted experiments and Neodymium magnet is most used in the project due to its strong magnetic field. The device is mainly built using a permanent magnet, a rotating wheel and a generator. This paper reviews some aspects on how A Perpetual Motion Machine (PMM) generates electrical power. The aim of the paper is to provide a summary of the topic and its opportunities in further enhancements for better results. The study found that the concept is very effective, ecofriendly and less space needed. However, a larger scale development of the machine along with proper magnet and gear arrangement is currently needed for a better performance and application

| A review on how a | Perpetual Motion Machine generates |
|-------------------|------------------------------------|
| electrical power  |                                    |

IOP Conf. Series: Materials Science and Engineering 1098 (2021) 042063 doi:10.1088/1757-899X/1098/4/042063

M N Hidayat, S P Chairandy\* and F Ronilaya Electrical Engineering Department, State Polytechnic of Malang, Jl. Soekarno Hatta No. 9, Malang, Indonesia

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The 5th Annual Applied Science and Engineering Conference (AASEC 2020)

Abstract Electrical energy demands is increasing in accordance with rapid growth of the human population. Since foosil hefts is the most widely used energy source, this is its depleting very flat. Alternative energy source is urgently needed to replace the use of conventional energy sources. Perpetual Monta Machine (PMM) which can be applied to poolse electricity, may be an energies power from repulsive forces of permanent anginet without tillating esternal sources. Source researches allo conducted experiments an Absorbatium magnet is more used in the project due to its strong magnetic field. The device is mainly built using a permanent magnet, a routing wheel and a generator. This paper environs one appeter to how A experiment. More Model (PMM) generates cleating power. The sam of the paper is to growide a summary of the topic or very effective, confranced and is source each source and the source of the source and the paper is to growide a summary of the topic environment. Configure and an experiment and Redwineer, a larger scale development of the machine along with proper magnet and ges arrangement is currently needed for a better performance and application.

#### . Introduction

High demand of fossil fuels in accordance with rapid growth of human population has caused a major worldwide concern to find remewable and alternative energy sources. The main problem of providing electricity is to provide cheap and continuous electrical supplies. Unlizing an alternative energy is currently needed, based on its financial benefits, economical sustainability and eco-friendly, in accordance with the depletion of conventional neurgy resources. One of the ideas that has been researched nowadays is a scheme called Perpenal Motion Machine (PMM) [1]. Percental Motion Machine (PMM) has been observed by may enhumants. The energy becomes free

Perpetual Motion Machine (PMM) has been observed by many enthusans. The energy becomes free only when we don't have to pay for the power generation [2]. Energy can be created from repulsive forces of two or more permanent magnets without utilizing external resources. Similar arrangement of generating free electrical energy can also be found on many applications of electromagnets [3] and permanent magnets [1,4-6]. Even chemical substances can be used for perpetual motion machine [7]. Based on some vuides about utilizing an alternative energy for power generation, this paper focuses on reviewing on how perpetual motion machine (PMM) generate power along with its possibilities of applications and finure enhancements.

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Increased voltage phenomenon in a resonance circuit with unconventional magnetic configuration

Osamu Ide

Journal of Applied Physics <u>77</u> (1995) 6015 - 6020

https://doi.org/10.1063/1.359520

Published also via www.intalek.com/Index/Projects/Research/jap77.pdf

Abstract: The behavior of an LCR (inductance-capacitance-resistance) circuit with a movable ferromagnetic core is discussed. The core is attracted by a magnetic field generated by an electric current resulting from the discharge of a capacitor in the closed LCR circuit. An unusual increase in recharge voltage, which was dependent on the magnetic configuration of the coil, was observed. This voltage increase does not conform to the mathematical simulation of the system. The possibility that a positive electromotive force was involved in this effect is discussed.

#### Increased voltage phenomenon in a resonance circuit of unconventional magnetic configuration

Osamu Ide Clean Energy Laboratory, Natural Group Corporation, Shinagawa, Japan (Received 11 November 1994; accepted for publication 24 February 1995)

The behavior of an LCR (inductance-capacitance-resistance) circuit with a movable ferromagneticore is discussed. The core is attracted by a magnetic field generated by an electric current resulting from the discharge of a capacitor in the closed LCR circuit. An unusual increase in recharge voltage which was dependent on the magnetic configuration of the coil, was observed. This voltage increase does not conform to the mathematical simulation of the system. The possibility that a positiv electromotive force was involved in this effect is discussed. © 1995 American Institute of Physics

#### I. INTRODUCTION

The author has been developing a motor operated by the scharge of a capacitor in an LCR (inductance-capacitanceesistance) circuit. Unlike conventional dc motors, this motor utilizes the magnetic force of attraction between a currentcarrying coil and a movable ferromagnetic core. The force of attraction between the two components resulting from the capacitor discharge is converted to a rotary force. The unconsumed magnetic energy is recycled as electrical energy by recharging the capacitor.

In the course of developing this motor, it was discovered that the recharge voltage depends on the precise configura-

tion of the system. The purpose of this paper is to describe the increased voltage phenomenon observed in the above system. A differential equation that expresses the phenomenon, as well as

computer simulations, are also discussed. It is appropriate here to briefly discuss other machines based on a similar magnetic phenomenon. Many attempts have been made to operate machinery that utilizes the non linear phenomenon of magnetism, such as ferroresonance1 and parametric resonance.3 The basic features of these maes is the magnetic saturation effect. The machines primarily make use of the transition from a nonresonant state to a resonant state, i.e., from the high inductance of a nonsaturated state to the low inductance of a saturated state, converting these two modes to either oscillation or amplification It should be noted that the present system is completely different from these machines, since there is no magnetic saturation in the coils. Voltage changes found in the system occur during the transition from a low-inductance state to a high-inductance state, and are not subjected to the sudden drop or rise typically associated with ferroresonance and parametric resonance. In other words, other systems operate in a closed magnetic field, whereas the system described here

is basically closed, since the only power source used here is a charged capacitor; it has no ac power supply such as that

used to operate other magnetic machines.

Unlike when the core is fixed outside the coils (i.e., the rates in an open magnetic field. Electrically, this system section

core has no influence on the coils), the approach of the core results in an increase in combined inductance L, as well as movement of the magnetic flux near the coils. This increase in inductance and the movement of the flux naturally affect the discharge current and recharge voltage. Generally speaking, it is expected that the total recharge voltage will decrease because this system produces mechanical output as the core moves. However, through a series of experiments, it was discovered that results depend on the magnetic configuration of the coils used in the circuit. In other words, for a certain kind of magnetic field, the opposite result could occur-an increase in the average current and recharge voltage. To confirm the above observations, an experiment was conducted, which is described in the following

sistance loss in the circuit.

toward the coils.

### III. INCREASED VOLTAGE PHENOMENON IN A LCR

circuit containing a capacitor initially charged to a voltage of  $+V_0$ . When the circuit is closed, the capacitor discharges its

energy through the inductor. The voltage and current in this

transient state are known to follow a damped oscillation [Fig.

rectifier) in order to eliminate switching loss [Fig. 2(a)]. The

other advantage of using the SCR is that a negative charge in

the capacitor is retained after discharge. The oscillation stops

after the first discharge, since the SCR automatically turns

off when the half-cycle current recharges capacitor C to a

recharge voltage of  $-V_r$ . The voltage and current during this

process are shown in Fig. 2(b). The amount of recharge volt-

age is always smaller than the initial voltage due to the re-

separate coils that face each other, with a movable ferromag-

netic core inserted between the coils (Fig. 3). When the two

coils (electromagnets) L1 and L2 are connected in series, they

generate magnetic fields that attract the ferromagnetic core

The inductor (coil) in Fig. 2(a) is now replaced by two

Switch S can be replaced by a SCR (silicon controlled

#### II. LCR CIRCUIT WITH AN INCREASE IN INDUCTANCE A. Experimental method

The basis of the system discussed in the present paper is The experimental setup is schematically shown in Fig. 4 a conventional LCR circuit, Figure 1(a) shows a basic LCR Ferromagnetic cores M1 and M2 are attracted to the rotor J. Appl. Phys. 77 (11), 1 June 1995 0021-8979/95/77(11)/6015/6/\$6.00 @ 1995 American Institute of Physics

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Extracting Energy and Heat from the Vacuum

D. C. Cole and H. E. Puthoff

Physical Review E <u>48</u> (1993) 1562 - 1565

https://doi.org/10.1103/PhysRevE.48.1562

Published also via www.earthtech.org/publications/PREv48\_1562.pdf

Abstract: Relatively recent proposals have been made in the literature for extracting energy and heat from electromagnetic zero-point radiation via the use of the Casimir force. The basic thermodynamics involved in these proposals is analyzed and clarified here, with the conclusion that, yes, in principle, these proposals are correct. Technological considerations for actual application and use are not examined here, however.

PHYSICAL REVIEW E **VOLUME 48, NUMBER 2** AUGUST 1993 Extracting energy and heat from the vacuum Daniel C. Cole IBM Corporation, Essex Junction, Vermont 05452-4299 Harold E. Puthoff Institute for Advanced Studies at Austin, 4030 Braker Lane West, Suite 300, Austin, Texas 78759-5329 (Received 22 March 1993) Relatively recent proposals have been made in the literature for extracting energy and heat from electromagnetic zero-point radiation via the use of the Casimir force. The basic thermodynamics involved in these proposals is analyzed and clarified here, with the conclusion that, yes, in principle, these proposals are correct. Technological considerations for actual application and use are not examined here, however PACS number(s): 05.90.+m, 03.65.-w, 05.40.+j, 05.70.-a Nearly a decade ago Forward [1] raised the possibility treated via classical physics, only one electromagnetic of extracting energy from the electromagnetic zero-point thermal radiation spectrum was found to ensure that no (ZP) fields that are predicted by quantum electrodynamheat would flow: namely, the classical electromagnetic ZP radiation spectrum, which has the same spectral form ics to be present in all of space. He described a means of accomplishing this task via a mechanical device consistas the ZP spectrum predicted to exist via QED. The exing of a charged foliated conductor. By using the attracistence of this radiation results in van der Waals and tive Casimir force between metal layers to overcome a Casimir forces at T=0, thereby yielding a tight connecrepulsive electrostatic force, the foliated conductor can tion between the required spectrum and the resulting be greatly compressed, thereby storing charge at a high forces At first thought, a contradiction appears inevitable beelectrostatic potential energy. More recently, one of us (Puthoff) has again raised the tween the analysis yielding "no heat flow at T=0" and "heat extraction at T=0." However, the contradiction possibility of energy extraction from the vacuum [2], while also emphasizing that the energy density of the becomes resolved upon recognizing that two different electromagnetic ZP energy has conservatively been estypes of thermodynamic operations are being discussed. timated to be equal to or greater than nuclear energy den-The quasistatic operations are thermodynamically reversities [3]. Puthoff suggested a potentially more practical sible, so here no heat flow occurs at T=0. In contrast, and plentiful means for energy extraction, namely, a the heat generation process discussed in Ref. [2] is thermethod involving a charged plasma. His discussion inmodynamically irreversible, so heat can be produced, cluded the idea of generating heat from the vacuum. even when the initial temperature is T=0. Here we do not comment further on devising practical The following analysis will cover both the T=0 and methods for enabling the vacuum to become a viable,  $T \neq 0$  cases. Indeed, although the proposals in Refs. [1,2] economical alternative to more conventional sources of discussed only the very idealized T=0 case, they can be shown to be valid also at  $T \neq 0$ . Our analysis will use energy, except to say that, without a doubt, considerable technological effort might need to be expended to adeclassical physics arguments, as in Refs. [4-8]. The mechanism for heat generation is illustrated in the quately harness such energy. Instead, here we will concentrate on the issue of whether fundamental thermofollowing thought experiment, which clearly is an imdynamic laws are being violated in even considering this practical process, yet it embodies the necessary points. possible source of energy. In particular, certainly the Suppose there exists a large number of uncharged parallel "vacuum" should be considered to be a state of thermal plate capacitors. The plates of each capacitor will be atequilibrium at the temperature of T=0. How then can tracted to each other by the fluctuating, yet correlated, energy be extracted, and even heat generated, at T=0? induced charge distributions in each plate, that arise on Some relatively recent articles by one of us (Cole) proaccount of the fluctuating ZP plus thermal radiation vide a starting point for this discussion. These articles fields. If each pair of plates is allowed to collide, some of analyze the thermodynamics of quasistatic displacement the kinetic energy generated will be converted into heat. operations on fluctuating electric dipole harmonic oscilla-Collecting the useable portion of the heat, discarding tors [4-7] and on conducting parallel plates [8]. The each pair of plates, and then colliding the next set, in operations involve, respectively, the microscopic van der turn, thus yields a means for heat generation. The "fuel" Waals force between atomic systems, and the macroscophere is the supply of capacitors; the used up capacitors ic Casimir force between parallel plates. Due to the funare analogous to the exhaust from gasoline engines or the damental thermodynamic definition of T=0, no heat "waste" from nuclear fuel. flow should occur at T=0 during quasistatic displace-To analyze this process more deeply, the physical ments of these systems. Indeed, for these two systems, as description of colliding systems needs to be addressed. In 1063-651X/93/48(2)/1562(4)/\$06.00 48 1562 ©1993 The American Physical Society

## Examples of papers about physical concepts for entirely novel energy technologies 10 / 12

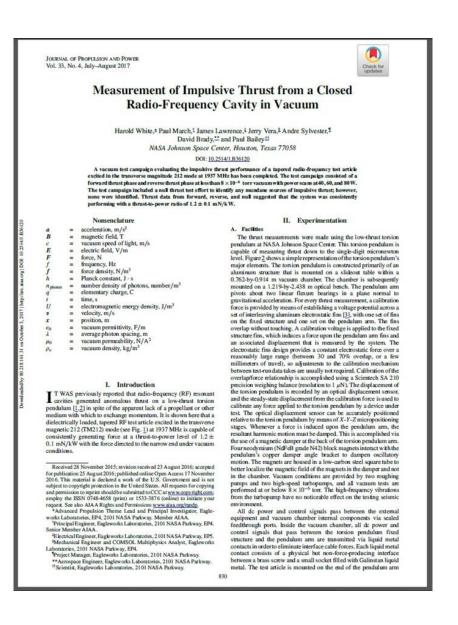
Measurement of Impulsive Thrust from a Closed Radio-Frequency Cavity in Vacuum

H. White et al.

Journal of Propulsion and Power 33 (2017) 830 - 841

## https://doi.org/10.2514/1.B36120

Citation from page 840: "... This suggests that the idea of treating the quantum vacuum as a dynamic medium capable of supporting oscillations might be valid. If a medium is capable of supporting acoustic oscillations, this means that the internal constituents were capable of interacting and exchanging momentum. If the vacuum is indeed mutable and degradable as was explored, then it might be possible to do / extract work on / from the vacuum, and thereby be possible to push off of the quantum vacuum and preserve the laws of conservation of energy and conservation of momentum ..."



## Examples of papers about physical concepts for entirely novel energy technologies 11 / 12

The so-called ECAT technology was / is considered as a LENR-based technology. LENR means Low Energy Nuclear Reactions which usually imply no harmful and radioactive byproducts. Broadly speaking it was assumed that hydrogen H (1) and nickel Ni (28) merge via LENR to copper Cu (29) which releases a large amount of energy. Meanwhile Andrea Rossi considers the underlying physics in terms of dense electron clusters, electron-proton aggregates at the picometer scale, and their formation via vacuum polarization and zero point energy.

E-Cat SK and long-range particle interactions

Andrea Rossi (2019) (last update 21 October 2022)

https://dx.doi.org/10.13140/RG.2.2.28382.48966/11

| See discussions, stats, and earlier profiles for this publication at https://www.researchget                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | e.net.guaicariae/20002053 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
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## Examples of papers about physical concepts for entirely novel energy technologies 12 / 12

Significant paper about the physics of the (quantum) vacuum

The Origin of Mass and the Nature of Gravity

Nassim Haramein, Cyprien Guermonprez, and Olivier Alirol

Published on 26 September 2023 via zenodo.org 52 pages

https://doi.org/10.5281/zenodo.10125315

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The Origin of Mass and the Nature of Gravity

Nassim Haramein<sup>†</sup>, Cyprien Guermonprez<sup>†</sup>, Olivier Alirol<sup>†</sup>

### Abstract

From the early explorations of thermodynamics and characterization of black body radiation, Max Planck predicted the existence of a non-zero expectation value for the electromagnetic quantum vacuum energy density or zero-point energy (ZPE). From the mechanics of a quantum oscillator, Planck derived the black body spectrum, which satisfied the Stefan-Boltzmann law with a non-vanishing term remaining where the summation of all modes of oscillations diverged to infinity in each point of the field. In modern derivation, correlation functions are utilized to derive the coherent behavior of the creation and annihilation operators. Although a common approach is to normalize the Hamiltonian so that all ground state modes cancel out, setting artificially ZPE to zero, zero-point energy is essential for the mathematical consistency of quantum mechanics as it maintains the non-commutativity of the creation and annihilation operators resulting in the Heisenberg uncertainty principle. From our computation, we demonstrate that coherent modes of the correlation functions at the characteristic time of the proton correctly result in the emergence of its mass directly from quantum vacuum fluctuation modes. We find as well that this energy value is consistent with a Casimir cavity of the same characteristic distance. As a result, we developed an analytical solution describing both the structure of quantum spacetime as vacuum fluctuations and extrapolate this structure to the surface dynamics of the proton to define a screening mechanism of the electromagnetic fluctuations at a given scale. From an initial screening at the reduced Compton wavelength of the proton, we find a direct relation to Einstein field equations and the Schwarzschild solution describing a source term for the internal energy of the proton emerging from zero-point electromagnetic fluctuations. A second screening of the vacuum fluctuations is found at the proton charge radius, which accurately results in the rest mass. Considering the initial screening, we compute the Hawking radiation value of the core Schwarzschild structure and find it to be equivalent to the rest mass energy diffusing in the internal structure of the proton. The resulting pressure gradient or pressure forces are calculated and found to be a very good fit to all the measured values of the color force and residual strong force typically associated to quark-antiquark and gluon flux tubes confinement. As a result, we are able to unify all confining forces with the gravitational force emerging from the curvature of spacetime induced by quantum electromagnetic vacuum fluctuations. Finally, we applied the quantum vacuum energy density screening mechanism to the observable universe and compute the correct critical energy density typically given for the total mass-energy of the universe.

### Introduction

General relativity clearly demonstrates a relationship between mass-energy and the structure of spacetime that has real physical effects we call gravity where massive objects made of elementary particles producing their mass curve spacetime resulting in a gravitational force. However, application of the same principles at the particles level yields gravitational forces that are so infinitely small that they are found to be insignificant. Yet, at the proton nuclear scale, extremely large confining forces are found which would require extremely high energy levels (or masses) to be produced in the context of general relativity. In fact, those very high levels of energy were actually predicted by early quantum field theory (QFT) resulting in the so-called 'bare mass' of particles but renormalized by modern quantum electrodynamics (QED) and quantum chromodynamics

<sup>†</sup> International Space Federation laboratory Email: research@spacefed.com Are entirely novel energy technologies and self-running systems really genuine and why does it take so long to make them tangible and commercially available?...

## Are entirely novel energy technologies and self-running systems really genuine ?

Some are really genuine and some are not. The author of this presentation assumes to the best of his knowledge and belief that the previously presented systems are real.

In case of systems which are not really genuine there are two cases:

- Fraud i.e. the communicated or presented specifications of the system were never achieved and are intentionally wrong
- The researchers / developers / inventors were convinced that the created system is really working, e.g. because the measured electric output power is larger than the electric input power. Later it was revealed that this was a fallacy and the previous conclusion had to be withdrawn, e.g. because the power measurement was not correct

Often it requires intuition, an ability to discriminate, or a careful and time-consuming inspection in order to decide if a system works really as specified or assumed.

# Why does it take so long to make entirely novel energy technologies and self-running systems tangible and commercially available ?

Examples of reasons why it takes so long or longer than expected

- The number of people who are aware of / work in the area of / support / believe in these technologies is still relatively small but constantly growing
- Lack of appropriate or continuous support and funding and no official teaching in schools, universities, and other academic institutions
- Specific lobbies and the global political power structure have suppressed the emergence of these technologies
- Disagreement between researchers / inventors and investors
- Sometimes inventors do not want to spread their invention (for various reasons) or have unrealistic financial expectations
- Inappropriate communication of the invention or project

# Why does it take so long to make entirely novel energy technologies and self-running systems tangible and commercially available ?

Another examples of reasons why it takes so long or longer than expected

- The time needed for
  - research and development
  - the development of a prototype which is suitable for serial production
  - establishing a serial production is often underestimated
- Long-term performance and safety tests may reveal some issues which require some modifications of the system or even may reveal its non-suitability for commercial applications
- In several cases the customer, facility, or company where an entirely novel energy technology is installed does not communicate that publicly (for various reasons)
- In several cases the customer does not want to purchase but wants to lease a power plant. Then it has to be discussed if the manufacturer is willing and able to establish such an option

About the potential physics behind entirely novel energy technologies and self-running systems ...

# About the potential physics behind entirely novel energy technologies and self-running systems

Maybe the following model considerations are helpful to gain a better understanding of this type of entirely novel energy technologies.

We assume that the so-called empty space or vacuum is by no means empty but comprises a huge amount of energy and potentialities. It should be noted that all manifestations of matter, such as the earth or the human body, consists more than 99,9 % of vacuum. This because the atoms, the building blocks of all material manifestations, are constituted more than 99,9 % of vacuum. The building blocks of the atoms are particles which are called electrons, protons and neutrons, but they occupy only less than 0,1 % of the atomic volume ...

# About the potential physics behind entirely novel energy technologies and self-running systems 2 / 8

The features and true nature of the so-called empty space, or vacuum are mainly unexplored by mainstream science. Nevertheless, it seems to be the very basis, source, root, substratum or medium on which our universe or world depends. This substratum or medium was / is also called ether. Let`s assume that the energy content of the space / vacuum / ether is incredible large and that the energy needs of mankind is tiny compared to that.

Let's suppose that all particles and thus all atoms and manifestations of matter arise from the space / vacuum / ether, i.e. they are special oscillation, resonance, or vortex states of the space / vacuum / ether [1] ...

[1] See for example

- the Space Vortex Theory of Paramahamsa Tewari, see pages 27 and 67
- statements of Noberto Keppe, see page 68
- papers by Paul A. LaViolette about subquantum kinetics such as https://doi.org/10.1080/03081070802367457
   which is also published via www.starburstfound.org/downloads/physics/nucleon.pdf
- Global Scaling, see https://novam-research.com/global-scaling.php
- paper "The Origin of Mass and the Nature of Gravity" by Nassim Haramein, Cyprien Guermonprez, and Olivier Alirol, published on 26 September 2023 via zenodo.org: https://doi.org/10.5281/zenodo.10125315

# About the potential physics behind entirely novel energy technologies and self-running systems

Then all material manifestations such as technical devices are intimately interwoven with the space / vacuum / ether. Also conventional energy technologies are devices which are intimately interwoven with the space / vacuum / ether but in total they do not extract usable energy from it. In total they convert the energy of a supplied fuel (matter, kinetic energy of moving matter, or radiation) into another form of energy.

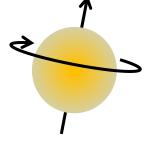
However, under special conditions, which are realized in some unconventional devices, it is possible to convert or extract usable energy from the space / vacuum / ether. In this case the supply of any fuel is not needed anymore ...

## About the potential physics behind entirely novel energy technologies and self-running systems 4 / 8

Many or perhaps all physical processes which usually imply in total no gain of energy can be designed or modified in such a way that they provide usable energy from the space / vacuum / ether. Examples of such physical processes are the mutual motion of magnets or magnetic fields, oscillating and rotating mechanical movements of masses within the earth's gravitational field, the splitting of water  $H_2O$  into hydrogen  $H_2$  and oxygen  $O_2$  and their recombination into water  $H_2O$ , and the splitting of hydrogen molecules  $H_2$  into hydrogen atoms H and their recombination into molecular hydrogen  $H_2$ . For these examples and other physical processes we assume that usable energy can be extracted from the space / vacuum / ether via magnetic, electromagnetic, electric, and / or gravitational fields but not from the fields. In established physics the gravitational, electric, electromagnetic, and magnetic fields are termed as so-called conservative force fields, i.e. a motion in a closed loop does not lead to a gain of energy. An unconventional device which extracts usable energy from the space / vacuum / ether can be considered as a system which implies a closed-loop motion in a non-conservative force field.

# About the potential physics behind entirely novel energy technologies and self-running systems

Probably the intrinsic angular momentum or spin of particles such as the electron plays an important role at the extraction of usable energy from the space / vacuum / ether. Possibly the space / vacuum / ether itself comprises an intrinsic angular momentum or spin so that the spin of particles such as the electron is driven by or associated with the spin of the space / vacuum / ether [2]. Also the so-called ECE Theory [3] implies something like that. It is called torsion of space-time and predicts the possibility of extracting usable energy from space-time ...



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- [2] See, for example, the following video from The Resonance Science Foundation / Nassim Haramein https://www.youtube.com/watch?v=QJOBnoqk\_0Q and the following paper from Nassim Haramein and Elizabeth A. Rauscher https://www.scribd.com/document/38637585/Nassim-Haramein-The-origin-of-spin
- [3] https://aias.institute , see also page 43

## About the potential physics behind entirely novel energy technologies and self-running systems

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The previous considerations are, for example, supported by Paramahamsa Tewari and his Space Vortex Theory (see also page 27). The following statements are cited from https://www.tewari.org

"A century from now, it will be well known that: the vacuum of space which fills the universe is itself the real substratum of the universe; vacuum in a circulating state becomes matter; the electron is the fundamental particle of matter and is a vortex of vacuum with a vacuum-less void at the center and it is dynamically stable; the speed of light relative to vacuum is the maximum speed that nature has provided and is an inherent property of the vacuum; vacuum is a subtle fluid unknown in material media; vacuum is mass-less, continuous, non viscous, and incompressible and is responsible for all the properties of matter; and that vacuum has always existed and will exist forever.

Then scientists, engineers and philosophers will bend their heads in shame knowing that modern science ignored the vacuum in our chase to discover reality for more than a century."

Paramahamsa Tewari

Note: The author of this presentation does not agree with the statement that the speed of light relative to vacuum is the maximum speed that nature has provided

## About the potential physics behind entirely novel energy technologies and self-running systems

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Another supporting statements and related considerations are the following, cited from the concepts or new physics of Dr. Noberto R. Keppe, see https://keppemotor.com and https://novam-research.com/keppe.php

In N. R. Keppe's terminology the space energy is called Essential Energy. It is an organizing energy which forms and keeps the universe on all levels and is constituted of two components, attraction and repulsion. According to N. R. Keppe, energy does not come from matter, the process is actually the opposite, meaning that matter comes from the Essential Energy which is infinite and exists everywhere in the entire universe. Matter is created by a resonance of space energy and atoms are considered as vortices. If electricity is generated by conventional technologies, then this corresponds only to one component of the Essential Energy. This is the cause of the low efficiency and heat losses (entropy) in conventional electric systems. From the perspective of the Essential Energy the common AC current does not represent a real alternating current. Both AC and DC correspond only to one direction or component of the Essential Energy. The "real" AC current is found in a pulsed DC current which comprises two components of the Essential Energy, namely action and complementation (instead of action and reaction).

The concepts of N. R. Keppe lead to the development of a novel, highly efficient, relatively cool running, and brushless electric motor. This so-called Keppe Motor is used in some commercially available fans and has received several awards.

## About the potential physics behind entirely novel energy technologies and self-running systems

So far we have considered the hypothesis that self-running systems are based on an extraction of usable energy from an assumed and everywhere present form of energy which is called space energy, vacuum energy, zero-point energy, or ether energy. The terms vacuum energy and zero point energy are also known and used in established physics. However, in this presentation these terms mean and imply much more than in established science, see for example the considerations on the previous pages.

It is also conceivable that self-running systems are based on a hypothetical internal process that converts matter into energy according to the Einstein's mass-energy equivalence  $E = m c^2$ . However, the author of this presentation considers this scenario as less likely.

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## Entirely novel and environmentally friendly energy technologies

Subpages of novam-research.com with links to further information:

Companies with various technologies and concepts: https://novam-research.com/energy3.php

Associations, institutes, foundations, individuals, specific devices, and projects: https://novam-research.com/energy2.php

Papers, books, and concepts: https://novam-research.com/energy1.php

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See also the home page of https://novam-research.com

Funding call for the advancement of entirely novel and environmentally friendly energy technologies and other topics, concepts, and results of non-mainstream science ...

# Funding call for the advancement of entirely novel and environmentally friendly energy technologies and other topics, concepts, and results of non-mainstream science

1 / 2 The topics and results presented in this document and https://novam-research.com embody the beginning of a new era in science and technology. To make the entire potential of these little-known areas beneficial for all of humanity, more

- research, development, and manufacturing
- advancement
- education

is required. Until now there is no appropriate support in this field. Furthermore it is desirable

- to support also some existing technologies and initiatives and their advancement
- to make already available technologies tangible. For example, a self-running and zero emission 200 kW power plant from the company Rosch Innovations (see pages 16 and 17) should be ordered, paid, and installed at a location / customer where it can be visited and inspected by others and where the generated electricity can be used

# Funding call for the advancement of entirely novel and environmentally friendly energy technologies and other topics, concepts, and results of non-mainstream science

For the aims, intentions, and tasks which are described on the previous page any amount of donation / funding is useful. However, to create a significant impact an amount of the order of several 100 Million EUR / CHF / USD seems to be reasonable for the start-up and the first few years.

For comparison:

- 400 Million USD were spent over 20 years for research and development to create and test unconventional electromagnetic generators. This project was directed by Leslie I. Szabo and lead to a novel energy technology called EBM, see pages 28 and 29
- The Perimeter Institute for Theoretical Physics was founded in 2000 by a donation of 100 Million CAD from Mike Lazaridis. In 2008 he added a further donation of 50 Million Canadian Dollar. For further information see https://perimeterinstitute.ca

Also bestowals of non-monetary things such as properties and buildings are welcome and useful.

2/2

# Acknowledgement & About the author & Closing Words ...

### Acknowledgement 1/2

The author of this presentation thanks Adolf Schneider and Inge Schneider from the

- Swiss Association for Space Energy (SVR) (in German)
- German-language journal NET-Journal (ISSN 1420-9292)
- publisher Jupiter-Verlag (in German)
- German-language website Borderlands of Science

for

- their relentless work in the area of entirely novel and environmentally friendly energy technologies and related topics
- the organization and implementation of many conferences, events, and meetings
- the publishing of the German-language journal NET-Journal (ISSN 1420-9292) and several books
- many talks, reports, presentations, and papers
- several private communications and discussions



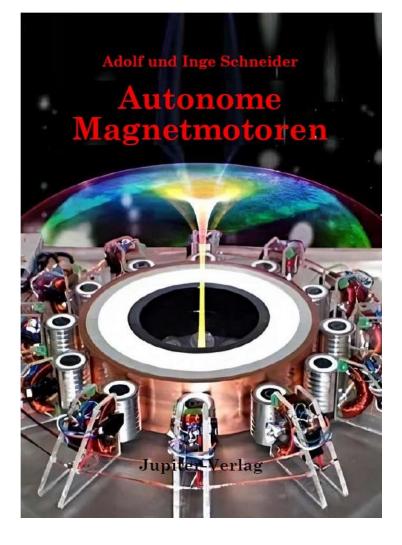
April 2016: Inge Schneider and Adolf Schneider in front of a self-running and zero emission 60 kW power plant / pilot plant at the company Rosch Innovations in Germany. Image from www.borderlands.de/net\_pdf/NET0516S6-9.pdf



Presentation (40 pages, 3 MB pdf) from May 2021 by Adolf Schneider about ram pumps and generators based on self-running hydraulic oscillations

Acknowledgement 2 / 2

German-language book "Autonome Magnetmotoren" about self-running magnet motors



Authors: Adolf and Inge Schneider First edition June 2024 , ISBN 978--3-906571-47-8

A5 type format (15 cm x 21 cm), 470 pages

Publisher: Jupiter-Verlag , https://www.jupiter-verlag.ch and https://www.Jupiter-verlag.ch/shop/detail\_neu.php?artikel=160&fromMain=j See also https://gehtanders.de/produkt/autonome-magnetmotoren (in German)

Presented in this German-language book are more than 20 types of magnet motors and also the self-running magnet motor / generator systems from the company Quantum Energy (Inductance Energy) Corporation, the solid state power amplifiers from the company Holcomb Energy Systems, the self-running solid state electromagnetic generators from the company SEMP Research Institute Co. Ltd., and the self-running kinetic power plants from the company Rosch Innovations / Save The Planet AG which comprise specially modified electromagnetic generators. The four latter systems are also presented in this work.

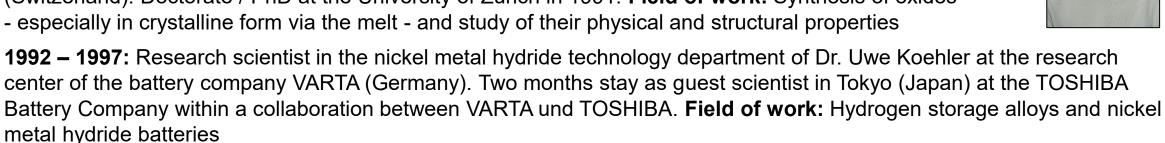
## About the author

Name: Frank Lichtenberg

Born **1962** in Bremen (Germany)

1983 – 1989: Study of physics at the University of Heidelberg (Germany)

**1989 – 1992:** Doctoral thesis in the division of Dr. J. Georg Bednorz at the IBM Zurich Research Laboratory (Switzerland). Doctorate / PhD at the University of Zurich in 1991. **Field of work:** Synthesis of oxides - especially in crystalline form via the melt - and study of their physical and structural properties



**1997 – 2007:** Research scientist in the department of Prof. Dr. Jochen Mannhart at the Institute of Physics of the University of Augsburg (Germany). **Field of work:** Setting up a new laboratory and synthesis of oxides - especially in crystalline form via the melt - and study of their physical and structural properties

2005: Participation in an 13 - day course in Global Scaling lectured by Hartmut Mueller in Germany

**2007 – 2010:** Freelance work, autonomous occupation with subjects in the area of physics and science. Creation of several presentations and papers and the website <a href="https://novam-research.com">https://novam-research.com</a> about entirely novel and environmentally friendly energy technologies and other new or little-known topics of science

**Since 2011:** Research scientist in the division of Prof. Dr. Nicola Spaldin at the Department of Materials of the ETH Zurich (Switzerland). See personal ETH webpage and https://theory.mat.ethz.ch/lab.html . Field of work: Setting up and maintenance of a new laboratory, synthesis of oxides - especially in crystalline form via the melt - and study of their physical and structural properties, and teaching

Since 2015 some consulting activities for the R & D company Quantum Power Munich



### **Closing words**

An enjoyable evolution of mankind and earth does not come about solely by scientific and technological progress, but requires rather the development of spiritual qualities such as compassion, peace, dignity, freedom, tolerance, wisdom, ...



## Appendix

The cryogenic magnet motor of Walter Thurner ...

### The cryogenic magnet motor of Walter Thurner 1 / 6

The cryogenic magnet motor of the German engineer and inventor Walter Thurner is a nice example of a self-running system because its operation principle is published and comprehensible at the macroscopic scale. It can be understood by considering the acting forces which operate in its design.

Walter Thurner died on 12 February 2021 and meanwhile his former German-language website www.walter-thurner.de no longer exists and his former German-language pdf document www.walter-thurner.de/magnet.pdf is no longer available via his former website. However, his original pdf document is still available via https://novam-research.com/resources/Walter-Thurner\_Kryo-Magnet-Motor.pdf The author of this presentation thanks Walter Thurner for his remarkable work and his former pdf document whose essential parts are presented in English on the following pages. A German-language obituary is published on pages 63 and 64 in the May / June 2021 issue of the German-language NET-Journal (www.borderlands.de/inet.jrnl.php3) (ISSN 1420-9292).

Another German-language article about Walter Thurner:

www.borderlands.de/net\_pdf/NET0308S4-10 . This article is published on pages 4 - 10 in the March / April 2008 issue of the German-language NET-Journal. The cryogenic magnet motor is described on pages 8 and 9.

An example of an embodiment of Walter Thurner's idea is sketched on the following page in Fig. 1 and Fig. 2. His concept implies a linear or especially a circular array of magnets. One of such a magnet (1) is sketched in Fig. 1 and Fig. 2. Another magnet (3) is attached to a rod (4) which is connected with a shaft (5) so that the magnet (3) can move above (1). The sketched arrangement of the magnets (1) and (3) results in a motion of (3) towards the edge of (1). A repulsion arises between (3) and (1) when (3) approaches the edge of (1) and an attraction occurs when (3) goes away from (1). Thus at the edge of (1)the magnetic forces act against the direction of motion of (3). That corresponds to a conventional or conservative system without any self-running motion.

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Sketch of an example of an embodiment of Walter Thurner`s idea from https://novamresearch.com/resources/Walter-Thurner\_Kryo-Magnet-Motor.pdf (in German)

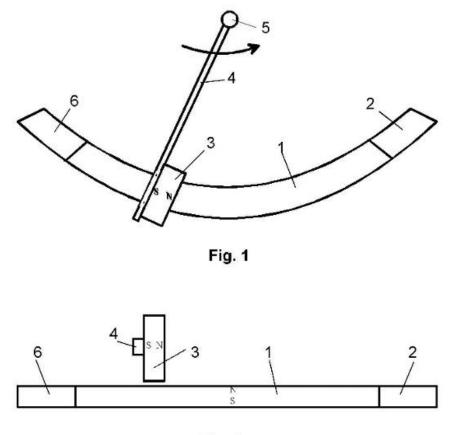


Fig. 2

Image from https://novam-research.com/resources/Walter-Thurner\_Kryo-Magnet-Motor.pdf

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Walter Thurner's concept enables a self-running motion of the movable magnet (3) because strong diamagnets (6,2) are placed at the edges of the magnet (1). The strong diamagnets (6,2) are realized by high-T<sub>c</sub> superconductors such as YBa<sub>2</sub>Cu<sub>3</sub>O<sub>7 -  $\delta$ </sub> which is superconducting at the temperature of liquid nitrogen (77 K). Thus Walter Thurner's device requires a cooling by liquid nitrogen. The strong diamagnet, for example (2), generates an induced magnetic field whose direction is opposite to the external field of the magnets (1) and (3) and thus it attenuates / shields / modifies the magnetic fields / forces of and between (1) and (3) at the edge of (1). Therefore (3) can leave the edge of (1) in a non-decelerated way. If (3) approaches then the edge of another magnet of the type (1), then the strong diamagnet (6) attenuates or shields the repulsive force between (3) and (1) so that (3) crosses the edge of (1) in a non-decelerated manner. Thus a circular array of several units of the type (6)(1)(2) leads to a self-running and self-accelerating motion of the movable magnet (3) from one magnet (1) to another. An increase of the effect can be achieved when not only one but more movable magnets of the type (3) are used. For example, several magnets of the type (3) can be placed on or in a rotating disc. The self-running and self-accelerating motion implies a generation of usable energy. For example, the rotating shaft (5) can propel an electric generator.

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Important safety note: If the described device is constructed properly, then it is self-running and self-accelerating. Without appropriate measures the speed of rotation can increase continuously until the device does fly apart ! That is of course very dangerous and indeed it did happen with a constructed prototype ! Fortunately nobody was injured during that event. Pictures from components of the prototype before its self-destruction are shown on the right. The visible holes in the lower picture allow a supply of liquid nitrogen. A renewed construction of this device requires the development of appropriate measures which limit and control the speed of rotation !



Images from https://novam-research.com/resources/Walter-Thurner\_Kryo-Magnet-Motor.pdf



The cryogenic magnet motor of Walter Thurner represents a nice example of a self-running system which can generate usable energy. Its operation principle appears comprehensible. Once it is understood one has an idea how a self-running system can work concretely, at least at the macroscopic scale. Devising a self-running system by considering the existing macroscopic forces does not require to know the source of the generated energy. Nevertheless, it is of course an interesting question from where the generated energy comes from. The author of this presentation assumes that self-running devices imply at the subatomic level an extraction of usable energy from the everywhere present space energy, vacuum energy or ether energy via physical fields such as magnetic fields