

Brief presentation for the general public, experts, laymen,
decision makers, VIPs, and wealthy personalities

**Information document about entirely novel energy
technologies and other fundamentally new
developments in science and technology
&
Funding call for an independent research facility**



Version 56 from 29 January 2012

Dr. Frank Lichtenberg / Physicist

www.novam-research.com

novam@nlp-nicoletta.de



Table of contents

- Background and motivation of this information document
- Examples of significant results from non-mainstream science
- Entirely novel energy technologies: A few more insights
- Funding call for an independent research facility
 - Background and motivation of this call
 - Examples of areas of research and development
 - Capital expenditure
- Closing words
- About the author



Background and motivation of this information document

In recent years 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 present established academic science are already crossed and the doors for fundamentally new developments are open, even if this is still little known in public.

For example, nowadays we can proceed from the assumption that there are entirely novel and environmentally friendly energy technologies which are based on an extraction of usable energy from the so-called space energy, vacuum energy or zero point energy (see page 15 for references and links). This kind of energy is everywhere present in huge amounts, on earth as well as in the universe. Energy technologies which tap this kind of energy do not need any fuels, are emission-free and provide usable energy at any place and any time ...

Entirely novel energy technologies and other fundamentally new developments in physics and technology & Funding call for an independent research facility



Background and motivation of this information document

These entirely novel energy technologies are able to replace all conventional energy conversion devices like combustion engines, nuclear power plants, wind power, hydroelectric energy, and solar power. These fundamentally new 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.

The recognition of the existence of the everywhere present space energy, vacuum energy or zero point energy, and the realization that there are technologies which can tap this kind of energy, 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 which triggers a global revolution ...

Entirely novel energy technologies and other fundamentally new developments in physics and technology & Funding call for an independent research facility



Background and motivation of this information document

To substantiate the statements on pages 3 and 4 we refer on the following pages 6 – 11 to some examples of significant achievements which recently emerged from non-mainstream science, namely entirely novel energy technologies which are already commercially available, fundamentally new technologies which are ready for prototype development or production, and important research results ...

Entirely novel energy technologies and other fundamentally new developments in physics and technology & Funding call for an independent research facility



Significant results from non-mainstream science – Example 1

A. Rossi's and S. Focardi's low energy nuclear reactor ECAT: An entirely novel energy technology

This device, also called cold fusion reactor or ECAT, generates a large amount of heat when hydrogen gas, nickel metal powder and an undisclosed catalyst are combined. The heat energy results from a little understood low energy nuclear reaction (LENR) whereby a part of the nickel is transmuted into copper. Only very small amounts of hydrogen and nickel are consumed, about 200 g nickel per year with respect to a power of 10 kW. About 90 % of the applied nickel is recyclable. About 1 % of the global nickel production is sufficient to provide the total energy needs of mankind. ECAT is emission-free, radioactive materials are not involved and radioactive waste is not produced. In October 2011 a successful demonstration of a 1 MW power plant, which consists of three hundred 4 kW units, took place in Italy. The global commercial rollout has already begun and 1 MW power plants can be ordered. 10 kW home units are announced for 2013. The installation costs are presently 1500 USD / kW for the 1 MW power plant and significantly smaller for the home unit. For further information see the www.ecat.com



Image: Interior view of first generation ECAT 1 MW Plant. Note the racks are built of smaller ECAT kW units in parallel. Image from <http://ecat.com> or <http://ecat.com/ecat-products/ecat-1-mw/ecat-1mw-pictures>

Additional information: www.peswiki.com/index.php/News:Rossi_Cold_Fusion , www.e-catworld.com , www.rossicoldfusion.com , www.transaltec.ch/facma/view.php?view=Produkte (in German) • Official statement from NASA that clean LENR energy technologies exist: <http://technologygateway.nasa.gov/media/CC/lenr/lenr.html> • Scientific papers: www.physics.purdue.edu/people/faculty/yekim/BECNF-Ni-Hydrogen.pdf , www.ijastnet.com/journals/Vol_1_No_5_September_2011/1.pdf , www.borderlands.de/Links/elixir.pdf , www.journal-of-nuclear-physics.com http://globaljournals.org/GJSFR_Volume11/5-An-Unitary-Unified-Quantum-Field-Theory.pdf , www.newenergytimes.com/v2/sr/WL/WLTheory.shtml#basicconcepts

Entirely novel energy technologies and other fundamentally new developments in physics and technology & Funding call for an independent research facility



Significant results from non-mainstream science – Example 2

L. I. Szabo's electromagnetic generators EBM: An entirely novel energy technology

This fundamentally new energy technology, also called EBM, taps the everywhere present space, vacuum, or zero point energy. 400 Million US Dollar has been spent for 20 years research and development to create novel and large electromagnetic generators for power plants. Several large electromagnetic generators with a power output in the MW range are presently under construction and can be ordered commercially. The installation costs are about (1000 – 3500) USD / kW, depending on the size. For further information see www.gammamanager.com



Image: www.gammamanager.com

Additional information: www.transaltec.ch/facma/view.php?view=Produkte (in German) • Abstract of a talk of L. I. Szabo at the Congress “150 years Nikola Tesla” in 2006: www.novam-research.com/resources/EBM.pdf • A report from 2007 about this technology (in German): www.borderlands.de/net_pdf/NET0107S4-14.pdf • Pages 25 and 26 in the issue “November / Dezember 2009” of the NET-Journal (in German) • Abstract of a talk given by L. I. Szabo at the congress “Neue Technologien im Einsatz “ in November 2009 (in German): www.novam-research.com/resources/EBM2.pdf • Pages 23 and 24 in the issue “Maerz / April 2010” of the NET-Journal (in German)

Entirely novel energy technologies and other fundamentally new developments in physics and technology & Funding call for an independent research facility



Significant results from non-mainstream science – Example 3

An experiment of fundamental relevance by C. W. Turtur

An experiment by Prof. C. W. Turtur indicates the feasibility of the extraction of usable energy from the everywhere present space / vacuum / zero point energy. The essential part of this experiment consists of a mechanical rotor which is located in an electrostatic field. The mechanical output power was relatively small, about 150 nW. However, it was demonstrated in a convincing manner that the total input power, i.e. the electric power loss to maintain the electrostatic field, was significantly smaller, about 3 nW. Most probably the power difference of about 147 nW is extracted from the space / vacuum / zero point energy. There are concepts how to increase the output power significantly, especially via magnetic fields. For further information see www.wbabin.net/physics/turtur1e.pdf . Funding for further research and development is highly desirable.

Additional information: www.ostfalia.de/cms/de/pws/turtur/FundE and http://public.rz.fh-wolfenbuettel.de/~turtur/physik/Vacuum-energy_popular_English.pdf

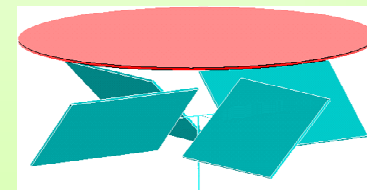


Image:

www.philica.com/display_article.php?article_id=155

Entirely novel energy technologies and other fundamentally new developments in physics and technology & Funding call for an independent research facility



Significant results from non-mainstream science – Example 4

Fostac Maximus: An entirely novel energy technology

Once installed into the electric circuit of a building such as a dwelling house or an industrial facility, this device neutralizes electromagnetic pollution and diminishes the consumption of electric energy from the power grid by the generation of electric energy via an entirely novel technology. For downstream loads there is a physically and financially measurable decrease of the consumption from the power grid by 10 – 30 percent. Standard devices are available for main fuses from 40 to 1250 Ampere. More than 10.000 devices are already in use.

For further information see www.fostac-technologies.ch



Image:
www.fostac-technologies.ch/images/produkte/maximus_p40_gr.jpg

Additional information and links: www.fostac-international.com and
www.fostac-international.com/en/docs/wissenswertes/was-geschieht-mit-elektronen_engl.pdf

Entirely novel energy technologies and other fundamentally new developments in physics and technology & Funding call for an independent research facility



Significant results from non-mainstream science – Example 5

Global Scaling – A new knowledge and holistic approach in science

Large potential to create novel and advantageous technologies such as

- Novel or more effective ways of power generation
- Transmission of energy and data without electromagnetic pollution
- Transmission of data and communication with an unique level of security

Examples of already existing and running demonstration models which are ready for prototype development or production:

- Data transmission system with an unique level of security
- Satellite-independent positioning system which also works in closed rooms and below the surface of the earth
- Water splitting system which generates hydrogen and oxygen with significant less power than conventional electrolyzers
- An already commercially available product is “ProtoLight“ – a special light source for medical applications such as accelerated wound healing

For further information see www.global-scaling-institute.de

Funding for further research and development is highly desirable.



Image “ProtoLight“:
www.global-scaling-institute.de/57-1-ProtoLight.html

Entirely novel energy technologies and other fundamentally new developments in physics and technology & Funding call for an independent research facility



Significant results from non-mainstream science – Example 6

A few established industrial companies have already started to discuss and contemplate about unconventional technologies

At the European aerospace company EADS an internal meeting about unconventional energy and propulsion technologies took place on 21 March 2011 in Hamburg (Germany). Invited external speakers were Dipl. Ing. A. Schneider from the Swiss Association for Space Energy SVR, TransAltec AG and NET-Journal, and Prof. C. W. Turtur who has performed an experiment of fundamental relevance (see page 8). A report about this meeting is published in the NET-Journal (in German): www.borderlands.de/net_pdf/NET0311S25-32.pdf



Entirely novel energy technologies: A few more insights

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

The so-called empty space, vacuum or quantum vacuum is by no means empty but comprises a huge amount of energy and potentialities. Please note that even any 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.

The features and true nature of the empty space, vacuum or quantum vacuum is mainly unexplored. However, it seems to be the very basis, source, root, substratum or medium on which our universe or world depends. Its energy content, or energy density (energy per volume), is incredible large and the energy needs of mankind is tiny compared with this.

Most probably all particles, fields and manifestations of matter arise from the quantum vacuum or can be considered as special (oscillation) states of the quantum vacuum ...



Entirely novel energy technologies: A few more insights

Therefore all material manifestations such as technical devices are intimately interwoven with the quantum vacuum. Also conventional energy technologies are devices which are intimately interwoven with the quantum vacuum 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 quantum vacuum. In this case the supply of any fuel is not needed anymore. In other words:

Many 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 quantum vacuum. Examples of such physical processes are the mutual motion of magnets or magnetic fields, the splitting of water H_2O into hydrogen H_2 and oxygen O_2 and their recombination to water H_2O , and the splitting of hydrogen molecules H_2 into hydrogen atoms H and their recombination into molecular hydrogen H_2 .



Funding call for an independent research facility

Background and motivation of this call

The recent achievements presented on the previous pages embody the beginning of a new era in science and technology. To make the entire potential of these fundamentally new areas in science and technology beneficial for the whole mankind, more research and development is required. Until now there is no appropriate support in this field and therefore it is obvious to call for an independent research facility. Invited for its funding are for example wealthy and courageous women and men who want to make a difference. The intention of that facility is to set a vital and powerful example which will contribute to a global paradigm shift in science, technology and consciousness, and to an enjoyable evolution of mankind. Its concrete purpose is the implementation of research and development in the field of an extended physics and technology, ranging from fundamental research to construction and testing of prototypes. This implies the creation of a frame which supports a free, independent, highly creative and truly innovative research.



Funding call for an independent research facility

Examples of areas of research and development

with references and links

Entirely novel energy technologies which are based on an energy extraction from the everywhere present space, vacuum or zero point energy, novel electronic transitions in atoms, low energy nuclear reactions, or other advanced concepts. They are environmentally friendly and are able to replace all conventional energy technologies. See e.g.

- **Some relevant publications:** Conversion of the Vacuum Energy of Electromagnetic Zero Point Oscillations into Classical Mechanical Energy, C. W. Turtur, The General Science Journal (2009): www.wbabin.net/physics/turtur1e.pdf • Introducing the Practice of Asymmetrical Regauging to Increase the Coefficient of Performance of Electromechanical Systems, M. Walters et al. (2005): www.nema-ugd.info/yahoo_site_admin/assets/docs/Walters_et_al_-_Asymmetrical_Regauging_to_increase_COP.21343253.pdf
 - Classical Electrodynamics without the Lorenz Condition: Extracting Energy from the Vacuum, P. K. Anastasovski et al. , published in Physica Scripta 61 (2000) 513: www.aias.us/documents/mwe/omniaOpera/omnia-opera-563.pdf • Extracting Energy and Heat from the Vacuum, D. C. Cole and H. E. Puthoff, Phys. Rev. E 48 (1993) 1562: www.earthtech.org/publications/PREv48_1562.pdf • How Do Space Energy Devices Work, H. Eckardt: www.aias.us/documents/miscellaneous/SpaceEnergy.pdf • Presentation by A. Schneider from the Swiss Association for Space Energy about technologies which are based on magnetic fields (in German but some slides are in English): www.novam-research.com/resources/MagnetmotorenSVR-Tagung2011B.pdf • Report about an internal EADS technology meeting on 21 March 2011 about unconventional energy and propulsion technologies, published in the NET Journal, issue "Maerz / April 2011", pages 25 – 32 (in German): www.borderlands.de/net_pdf/NET0311S25-32.pdf • Article about an extended theory of electromagnetism by D. Schadach (in German): www.g-r-z.org/pdf-dateien/energieuebertragung-vakuumfeld.pdf • An introduction and overview on Low Energy Nuclear Reactions (LENR), also called cold fusion: www.marwan-chemie.de/html_research/lenr_energy.html
- **Miscellaneous companies with various concepts and technologies:** www.ecat.com • www.gammamanager.com • www.transaltec.ch (in German) www.fostac-technologies.ch • www.blacklightpower.com • www.terawatt.com • www.marwan-chemie.de • www.steorn.com/orbo www.chavaenergy.com • Brief description about the Field Force Machine from IEM Nova: www.novam-research.com/resources/Field-Force-Machine_IEM-Nova_2010.pdf
- **Various technologies, projects, associations, groups, individuals and journals:** www.keppemotor.com • www.vakuuenergie.de 15 www.newenergymovement.org • www.theorionproject.org • www.cheniere.org • In German: www.dvr-raumenergie.de www.svrswiss.org • NET Journal: www.borderlands.de/inet.jrnl.php3 • www.top-loesungen.de • www.erfinder-haus.de



Funding call for an independent research facility

Examples of areas of research and development

with references and links

- **Searching for room temperature superconductors.** For further information see www.novam-research.com/resources/Research_Project_Room_Temperature_Superconductors.pdf
- **Accelerated decay of radioactive nuclei for a riskless utilization of nuclear waste.**
See e.g. (in German): www.transaltec.ch/facma/view.php?view=Projekte
- **Global Scaling – a new knowledge and holistic approach in science.** See page 10 and
 - Global Scaling Research Institute: www.global-scaling-institute.de • An introduction into Global Scaling, the so-called Global Scaling Theory Compendium, can be downloaded from www.global-scaling-institute.de • Some relevant papers by H. Mueller, S E Shnoll et al., and V. A. Panchelyuga: www.ptep-online.com/index_files/2009/PP-17-13.PDF , www.ptep-online.com/index_files/2010/PP-22-10.PDF , www.ptep-online.com/index_files/2010/PP-20-10.PDF , www.global-scaling-institute.de/files/shnoll1998.pdf , www.global-scaling-institute.de/files/rotating_collimator.pdf , www.ptep-online.com/index_files/2007/PP-10-11.PDF
- **ECE Theory – the unified field theory of M. W. Evans.** See www.aias.us
- **(Extended) Quantum Theory of Burkhard Heim.** See e.g. www.heim-theory.com and www.hpcc-space.com/publications/documents/AIAA2006-4608LetterExtndVersionRevisedSept.pdf
- **Brown's gas – a special gas with many extraordinary and useful features**
See e.g. the paper by C. Eckman published in the Proceedings of the National Philosophy Alliance (NPA), Vol. 6, No. 2 (2010), pages 1 – 4: www.worldsci.org/pdf/abstracts/abstracts_5440.pdf



Funding call for an independent research facility

Examples of areas of research and development

with references and links

- **Subtle matter.** See e.g. www.ismr.eu • "Experimental Evidence of a New Type of Quantized Matter with Quanta as Integer Multiples of the Planck Mass" by K. Volkamer and C. Streicher in Apeiron 6 (1999) 63 – 82: <http://redshift.vif.com/JournalFiles/Pre2001/V06NO1PDF/V06n1vol.pdf>
 - "Detection of dark matter radiation of stars during visible sun eclipses" by K. Volkamer in Nuclear Physics B / Proceedings Supplements 124 (2003) 117 – 127
- **So-called Hadronic Mechanics / Physics / Mathematics, an extension of quantum mechanics for extended particles, non-local, non-linear and non-potential interactions.**
See e.g. www.i-b-r.org/Hadronic-Mechanics.htm and www.i-b-r.org/ir00019a.htm
- **Subquantum physics / kinetics.** See e.g. "The Electric Charge and Magnetization Distribution of the Nucleon: Evidence of a Subatomic Turing Wave Pattern" by P. A. La Violette in the International Journal of General Systems 37 (2008) 649 – 676: www.starburstfound.org/downloads/physics/nucleon.pdf
- **Advanced space propulsion.** See e.g. "To the stars" by W. B. Scott in Aviation Week & Space Technology from March 1 (2004) 50: http://novam-research.synthasite.com/resources/To-the-stars_W-B-Scott_Aviation-Week_2004.pdf and "Spacetime Physics and Advanced Propulsion Concepts" by W. Droescher & J. Hauser in AIAA (American Institute of Aeronautics and Astronautics) 2006 – 4608: www.hpcc-space.com/publications/documents/AIAA2006-4608LetterExtndVersionRevisedSept.pdf
- **Extended physics and holistic life science, e.g. consciousness research, subtle energies and fields, and influence of human thoughts and intentions on matter and events.** See e.g. www.ismr.eu • www.noetic.org • www.tcm.phy.cam.ac.uk/~bdj10

Entirely novel energy technologies and other fundamentally new developments in physics and technology & Funding call for an independent research facility



Funding call for an independent research facility

Capital expenditure

Estimated capital expenditure for start-up and the first few years: Looking at the aims, intentions and areas of research and development, an amount of the order of 50 Million Euro seems to be reasonable.

For comparison:

- 400 Million US Dollar has been spent for 20 years research and development to create novel electromagnetic generators. This fundamentally new energy technology was developed by Prof. L. I. Szabo and rests upon an extraction of the everywhere present space or vacuum energy. For further information see page 7.
- The Perimeter Institute for Theoretical Physics was founded in 2000 by a donation of 100 Million Canadian Dollar from Mike Lazaridis. In 2008 he added a further donation of 50 Million Canadian Dollar. For further information see www.perimeterinstitute.ca

Entirely novel energy technologies and other fundamentally new developments in physics and technology & Funding call for an independent research facility



Closing words

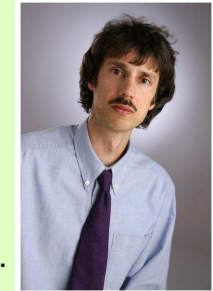
An enjoyable evolution of mankind and earth does not come about solely by scientific and technological progress, but requires rather the development of the qualities of the heart such as compassion, peace, dignity, freedom, tolerance ...



Entirely novel energy technologies and other fundamentally new developments in physics and technology & Funding call for an independent research facility



About the author



- Born **1962** in Bremen (Germany). **1983 – 1989**: Study of physics at the University of Heidelberg (Germany)
- **1989 – 1992**: Doctoral thesis in the department 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 properties, solid state chemistry / physics.
- **1992 – 1997**: Research scientist in the nickel metal hydride technology department of Dr. Uwe Koehler at the research center of the battery company VARTA (Germany). Two months stay as guest scientist in Tokyo (Japan) at the TOSHIBA Battery Company within a collaboration between VARTA und TOSHIBA. **Field of work**: Hydrogen storage alloys and nickel metal hydride batteries.
- **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, synthesis of oxides – especially in crystalline form via the melt – and study of their properties, solid state chemistry / physics.
- **2005**: Participation in an overall 13 - day course in Global Scaling lectured by Dr. Hartmut Mueller at the Global Scaling Research Institute (Germany).
- **2007 – 2010**: Freelance work, autonomous occupation with subjects in the area of (an extended) physics / science, and creation and updating of several presentations and papers • Creation and updating of the website www.novam-research.com with the aim to disseminate information, presentations, papers and links about fundamentally new developments in science and technology such as entirely novel energy technologies
- **Since January 2011**: Research scientist in the group of Prof. Dr. Nicola Spaldin at the Department of Materials of the ETH Zurich (Switzerland): www.theory.mat.ethz.ch/people/senior_scientists/lfrank . **Field of work**: Setting up a new laboratory, synthesis of oxides and study of their properties, crystal growth via the melt, solid state chemistry / physics
- **Miscellaneous**: Author / Co-author of 70 scientific publications which are listed in the following link: www.novam-research.com/resources/Publications.pdf • Participation in several congresses and meetings about entirely novel energy technologies in Germany, Switzerland, Austria and Hungary
- **Name & Address**: Frank Lichtenberg • Ferdinand-Hodler-Strasse 16 • CH – 8049 Zurich • Switzerland
Phone +41 (0)43 539 95 68 • novam@nlp-nicoletta.de • www.novam-research.com