


# ***Future Energy***

*Program Initiatives  
into Emerging Energy,  
Propulsion and  
Bioenergy*

*by Integrity Research Institute  
**Thomas Valone, PhD, PE**  
Program Director*



IRI Theme  
Song – 1 min.

# POPULAR SCIENCE

THE  
FUTURE  
NOW

SPECIAL ISSUE

## FUTURE ENERGY

GAS FROM GARBAGE  
REAL FUSION  
SOLAR SATELLITES  
SAFE NUCLEAR  
AND  
THE LAST DROPS OF OIL

PLUS

How to Buy a Space Shuttle .28

Superfast Flying Submarine .28

Ferrari Goes Off-Road .28 Hottest. Pepper. Ever. .28



JULY 2011 US \$4.99



Cover of *Popular Science*, July 2011

- **Thorium**-fueled molten salt reactors
- **Fusion** energy (ITER)
- **Space-based** solar power
- **Biogas**
- Next-gen nuclear reactors
- and the last drops of oil

# IRI Future Energy Goals



- ◆ Expand **new energy** discoveries including wireless energy
- ◆ Develop the newly discovered modes of transport **propulsion**
- ◆ Create optimum health with bioenergy **electromedicine**

[Futureenergy.org](http://Futureenergy.org)

[BioEnergyDevice.org](http://BioEnergyDevice.org)

[IntegrityResearchInstitute.org](http://IntegrityResearchInstitute.org)



OOFE

RD INTERNATIONAL CONFERENCE  
ON FUTURE ENERGY

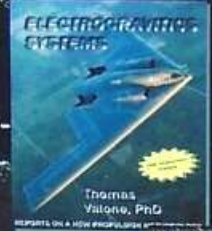
**First Ever Zero-Point Energy Panel of Experts**



IntegrityResearchInstitute.org

Integrity Research Institute

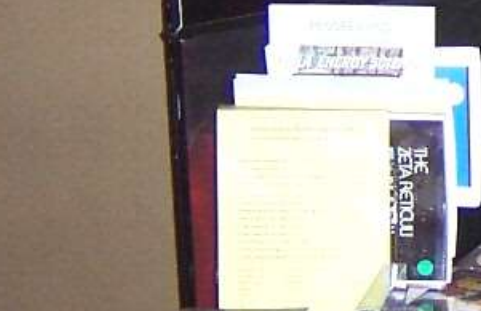
Future Energy  
Proceedings of the  
FIRST INTERNATIONAL  
CONFERENCE ON  
FUTURE ENERGY  
COFE  
APRIL 27, 2011, L. 1999  
Integrity Research Institute



Energy  
Propulsion  
Bioenergetics

*Integrating scientific integrity  
in emerging energy science*

nonprofit 501(c)3 organization



# 1999 Conference on Future Energy



## nature

11 March 1999 Volume 336 Issue no. 6723

www.nature.com

CD-Proceedings  
**CONFERENCE ON FUTURE ENERGY**

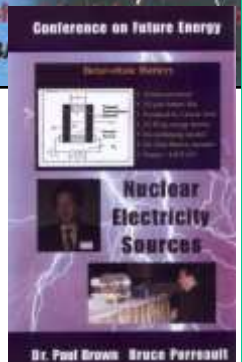


29 April - 1 May 1999



COFE CD-Proceedings

20 Speakers, 9 of whom are PhDs &  
 15 Audios (All Plenary Sessions) &  
 14 Audios (All Workshop Sessions)  
 23 Papers Published  
 ADOBE ACROBAT



**In  
 warning**

### US State Department gets cold feet about cold fusion

At the centre of a daily modified about publicly he of generally brain.

(WASHINGTON) A meeting that was to have been held at the US State Department next month to highlight research on unconventional energy sources seems likely to be scaled down or cancelled because of doubts about the credibility of the research.

The First International Conference on Future Energy was to have taken place on 29 and 30 April at the State Department auditorium. The conference is sponsored by the Integrity Research Institute (IRI), a Washington-based group that promotes energy concepts ranging from "assisted nuclear fusion" to "cold fusion".

After a meeting between Foley, Vukobratovic and others on Monday (8 March), the department remained undecided as to whether it will cancel or curtail its involvement in the conference. One source said the organizers were considering moving it to a hotel.

Vukobratovic, who is also a patent examiner with the US Patent and Trademark Office, found himself in hot water with his own agency last year when he sent out an Internet notice to "all able-bodied infinite energy



The First International

## Conference On Future Energy

Integrity Research Institute

## WORKSHOPS

Holiday Inn Bethesda  
 Bethesda, Maryland

Saturday, May 1, 1999

## Science & Government Report

### SEVEN BY AUGUST, 'FREE ENERGY' CONFERENCE FINALLY FINDS A HOME

It was billed as a conference on free energy, but it was really about cold fusion. The organizers had been looking for a home for the conference for a long time. The organizers had been looking for a home for the conference for a long time. The organizers had been looking for a home for the conference for a long time.

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understands the concept of Center for the Study of Biological and Environmental. Working systems of living systems, but as formal studies, have been held by a super-technical committee of the high technical community, and it is not the basis of a small company, which is not a small, but is building a prototype system.

What do living systems have to do with free energy? The same understanding of electromagnetic fields that allows COFE to maintain energy and allow itself to build that the speed of light could make the world's first cold fusion prototype absolute zero.

No RESEARCH SET AS NEW WOMEN ARE ELECTED MEMBERS OF ACADEMY  
 The first step was to get the women. The first step was to get the women. The first step was to get the women.



Photo Courtesy of Ms. Jeane Manning



# Future Energy Surge of 2009



*SPESIF 2009*



- World Future Energy Summit, **Abu Dhabi**, Jan. 19-21, 2009
- SPESIF Future Energy Source Workshop, **Huntsville AL**, Feb. 24-26, 2009
- Future Energy Forum, **Bilboa, Spain**, June 9-11, 2009
- Conference on Future Energy, **Washington DC**, Oct. 9-11, 2009 (COFE3 was third in a series, tenth anniversary)

**Futureenergy.org**

# Programs Fulfilling IRI's Non-Profit Mission



**Energy**  
**Propulsion**  
**Bioenergetics**

[www.IntegrityResearchInstitute.org](http://www.IntegrityResearchInstitute.org)



# IRI Future Energy Projects

- **Electric Antioxidant Clothes**
- **PREMIER High Voltage Electrotherapy**
- **Pulsed Electromagnetics (EM Pulser)**
- **OsteoPad Electric Bone Hardener**
- **Tunneling Diode Array Energy Generator**
- **Spiral Permanent Magnet Motor**
- **Inertial Shield and Electrogravitics**
- **Public Education (books, conferences, Future Energy eNews, videos, audios)**

**COST**

**\$250K**

**\$100K**

**\$10K**

**\$5K**

**\$1K**

**100%**

**80%**

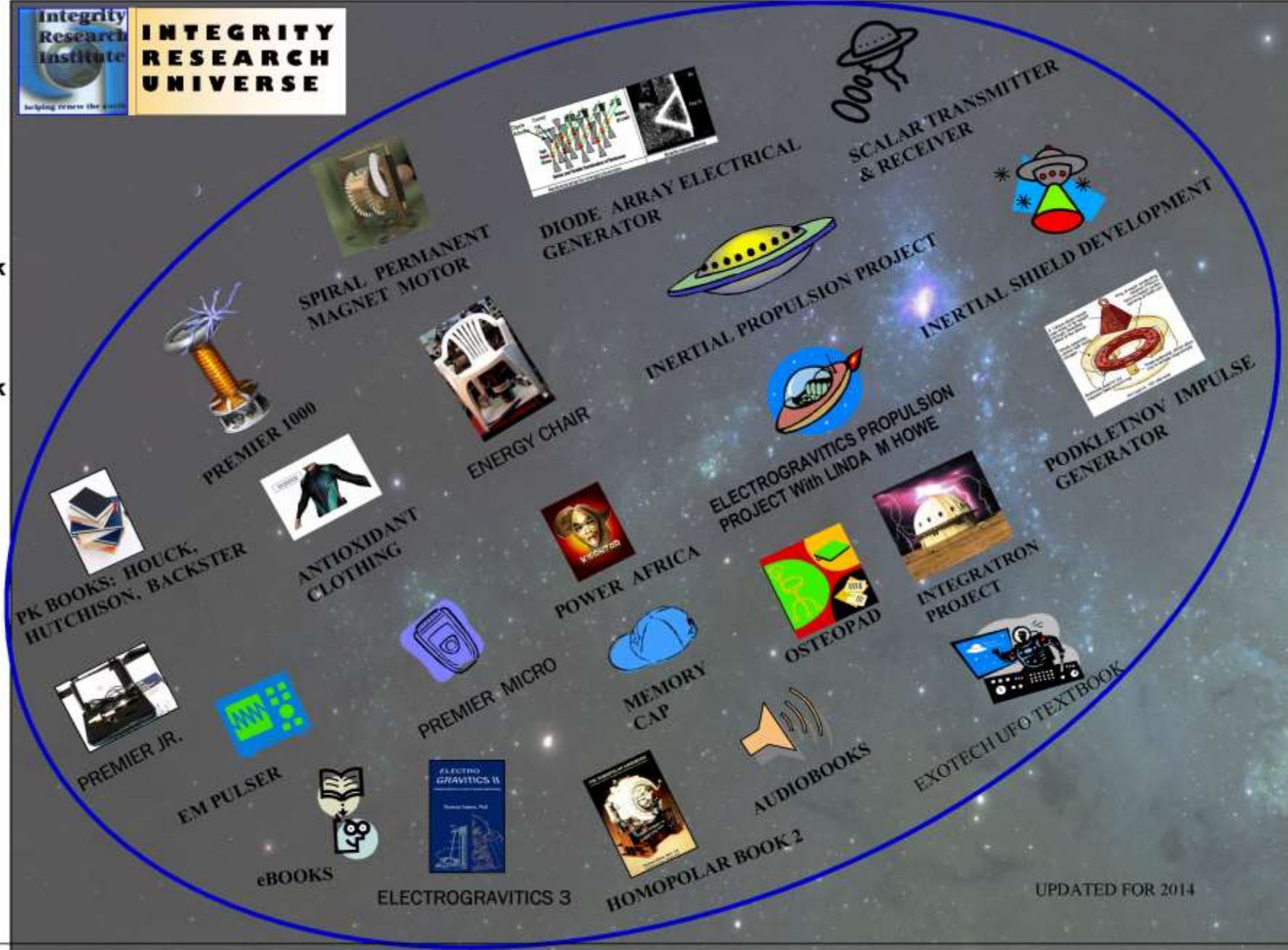
**60%**

**50%**

**40%**

**20%**

**DEVELOPMENT**



UPDATED FOR 2014

# BIOENERGETICS PROGRAM

## Energy Medicine Projects

### Bioelectromagnetic Healing A Rationale for Its Use

by Thomas Valone, Ph.D.

- Electric Clothes, OsteoPad, PREMIER
- HF EMF can be “pulsed” – called PEMFs
- Low **transmembrane potential TMP** = disease = low Na-K pump & ATP impairment
- **External high voltage PEMFs increase TMP**
- Boosting TMP while creating electron transfer to fight free radicals helps the immune system and gives the body **MORE ENERGY**
- Electric gradients vs. chemical gradients

“Electrons are antioxidants and high voltage EMFs strengthens immune response.” – Dr. T. Valone

# Electrons are Antioxidants

## FREE RADICALS STEAL ELECTRONS

creating more free radical DAMAGE in a chain reaction (10,000 times)

## Damaged mitochondrial DNA causes aging

## ANTIOXIDANTS STOP FREE RADICALS WITH ELECTRONS

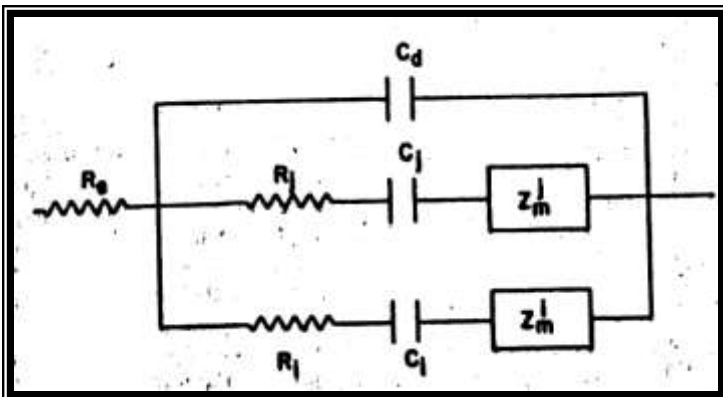
### References

- **“Oxidative damage causes aging”** - *Life Enhancement*, Oct. 2004
- “Dying before their time: studies of prematurely old mice hint that DNA mutations underlie aging.” *Science News*, July 10, 2004, p. 26
- “Mice and mitochondria” Martin, *Nature*, 2004, V. 429, p. 357,417

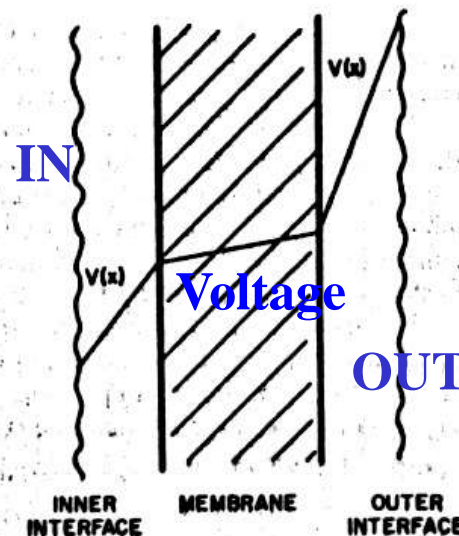
# CELL MEMBRANE



**TransMembrane Potential = TMP = 10 million volts per meter!**



Membrane equivalent circuit



Voltage-gated channels: **TMP = -70 to -100 mV** in healthy individuals. **TMP is 100kV/cm** with a capacitance of 1 microfarad/cm<sup>2</sup>

# Bioenergy Products

## PREMIER JUNIOR LINE (*Photonic Rejuvenation Energizing Machine & Immunizing Electrification Radiator*)

Our bestselling bioenergy machines, have just been improved and expanded to 4 different models. Based on Tesla and Rife Technologies and the Azure Patent, these machines energize the body in a very short exposure. Uses the Nobel gas tube to deliver antioxidant electrons into the body tissues which studies show directly neutralize free radicals. Invigorating and disinfecting, helps disease resistance. All come with a 30 day money back guarantee and 1 full year warranty for parts and labor.

### PREMIER Jr. 100 or 200

These models include the High voltage coil, small case and 1 tube. The model 100 has a Y-shape which is ideal for neck and extremities treatment and the 200 model has a small mushroom shape ideal for concentrated treatment in one area. Both are just as effective. \$ 495.



### PREMIER Jr. Model 500

This model has the same benefits as the others plus 4 tubes: 1 mushroom small, 1 mushroom large, both ideal for concentrated energy in one area. 1 Y-shaped, excellent for neck and knee areas. 1 comb-shaped ideal for scalp, fingers and toes. Large high impact case included. \$795.



### PREMIER Jr. Model 300

This model includes the high voltage coil, high impact medium size case and two tubes: 1 small mushroom and 1 Y-shaped. Having both tubes gives you complete coverage of all body parts and a choice for your specific need. If you want to treat your neck or extremities, use the Y tube. If you want to concentrate on one area, use the mushroom tube. \$ 595.



# Photonic Rejuvenation Energizing Machine & Immunizing Electrification Radiator (PREMIER)



Dr. Richard Gerow  
with Model 200



PREMIER Junior  
Model 100

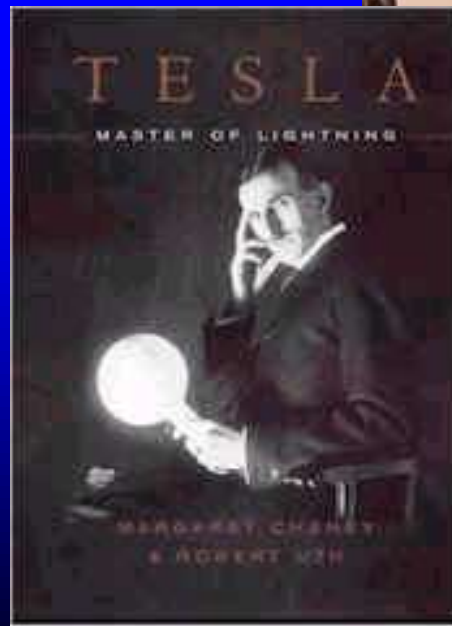


Dr. Jacqueline Panting  
using Model 2500

# Energy Chair

## IRI Bioenergy Project

- Recreation of the Autocondensation Couch in a more compact form
- HV broadband PEMFs
- Whole body TMP boost
- Debut at Whole Person Healing Conference 2005





# Bone Knitting OsteoPad™

- 1 out of 2 people will develop **osteoporosis**\*
- **OsteoPad™** provides a patented EM signal proven to stimulate calcium transport across bone cell membrane, just like weight bearing exercise creates piezoelectric signals
- **Heals bone fractures in ½ of the time**
- Strengthens bones of elderly *while they sleep*, reversing osteopenia and osteoporosis
- In development by IRI in cooperation with Dr. Manning who patented an early version

\*Time, October 25, 2004, p. 101

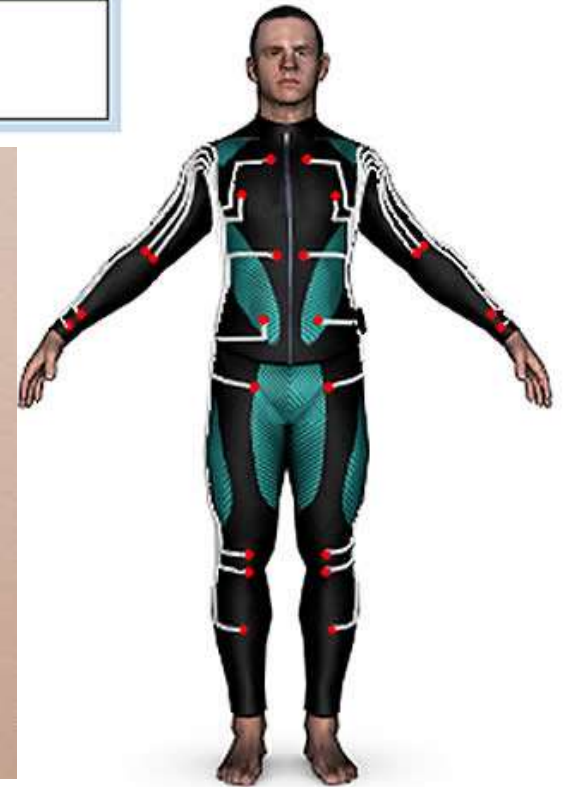
# Electric Antioxidant Clothing

Patent issued – Dr. Jacqueline Panting

Electron flow illustration  
across and into the skin



Flow of electrons



Supplying antioxidant microcurrent electrons to skin-tight clothing boosts energy and performance for athletes and regular people

# Dr. Andrija Puharich MD

## Nerve Deafness Project

- Restore and test his TD 1000 audio stimulator which cured nerve deafness
- Donated to IRI by Puharich family
- US Patent 3,563,246

Puharich Lab  
Notebooks put  
on CD Project  
completed

[54] **METHOD AND APPARATUS FOR IMPROVING NEURAL PERFORMANCE IN HUMAN SUBJECTS BY ELECTROTHERAPY**  
13 Claims, 3 Drawing Figs.

[52] U.S. Cl..... 128/422;  
331/47, 331/56

[51] Int. Cl..... H05g /00

[50] Field of Search..... 128/362,  
380, 404, 409, 413, 419, 420, 421, 422

**ABSTRACT:** A method of patient rehabilitation by electrotherapy including periodically electrically stimulating the patient in the region of his facial nerve system by a controlled alternating electrical treatment signal, which signal is an amplitude modulated, double sideband signal of less than 100 kHz. The treatment signal is applied to the patient's head through a pair of electrodes comprised of two bare electrodes or two insulated electrodes, or one insulated electrode and one bare electrode. The patient's head is an element in an LC series resonant circuit established with the treatment signal source.

Book Editing Project for nonprofit US Psychotronics Assoc.



**Energetic  
Processes**

The cover features a dark, starry space background with a bright orange and yellow nebula-like glow at the bottom.



**Energetic  
Processes**

The cover features a vibrant, multi-colored nebula (purple, blue, green, and red) against a dark space background.

Conference Papers on Interactions of Energy and Consciousness



Interaction Between Matter, Energy & Consciousness  
VOLUME I

The cover features a dark, starry space background with a bright orange and yellow nebula-like glow at the bottom.

**Peter Moscow et al.**



Interaction Between Matter, Energy and Consciousness  
VOLUME II

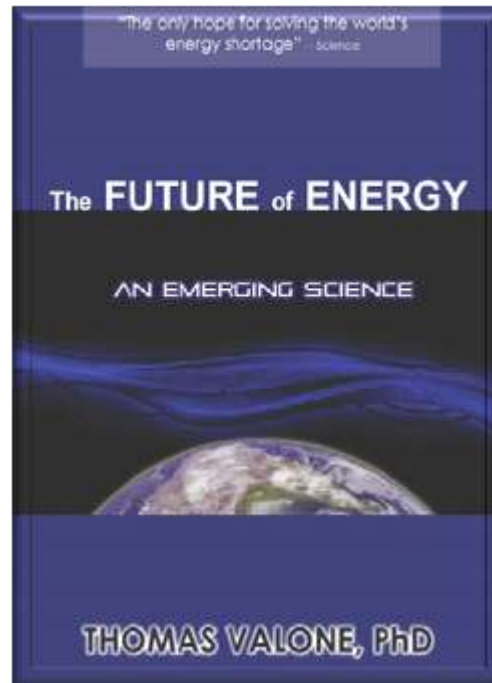
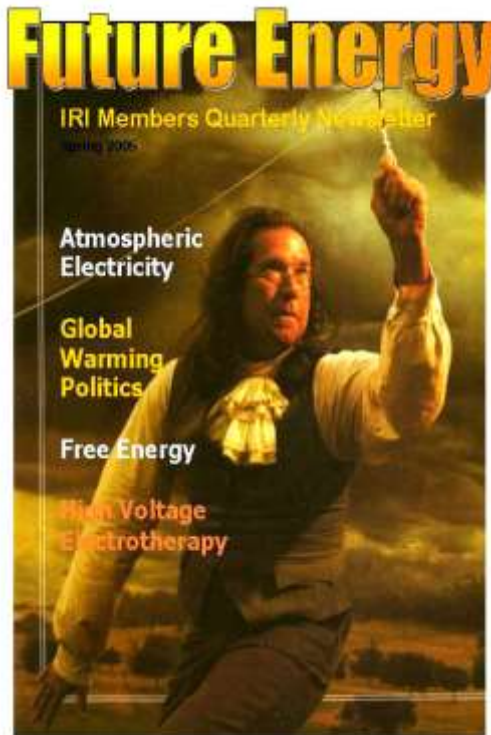
The cover features a vibrant, multi-colored nebula (purple, blue, green, and red) against a dark space background.

**Peter Moscow et al.**

# Integrity Research Institute

[IntegrityResearchInstitute.org](http://IntegrityResearchInstitute.org)

- ENERGY RESEARCH AND EDUCATION WITH SCIENTIFIC INTEGRITY
- Conferences, Books, Reports, Products & Future Energy eNews



- **ADVOCACY FOR THE COMMON GOOD** without favoritism
  - nonprofit 501(c)3 organization that accepts tax-deductible donations

# ENERGY PROGRAM



June 25, 2002 CNN Moneyline

LOU DOBBS

**CNN** TOM VALONE

PRES., INTEGRITY RESEARCH INST. 5:31p ET  
HOLLYWOOD WALK OF FAME CNN ROUND BALL REJE

# 2/3 of US Electricity is Wasted

Ref: DOE & U.S. Energy Association, 2002

### ELECTRICITY FLOW, 2000 (Quadrillion Btu)

**Consumed:  
39 Quads**

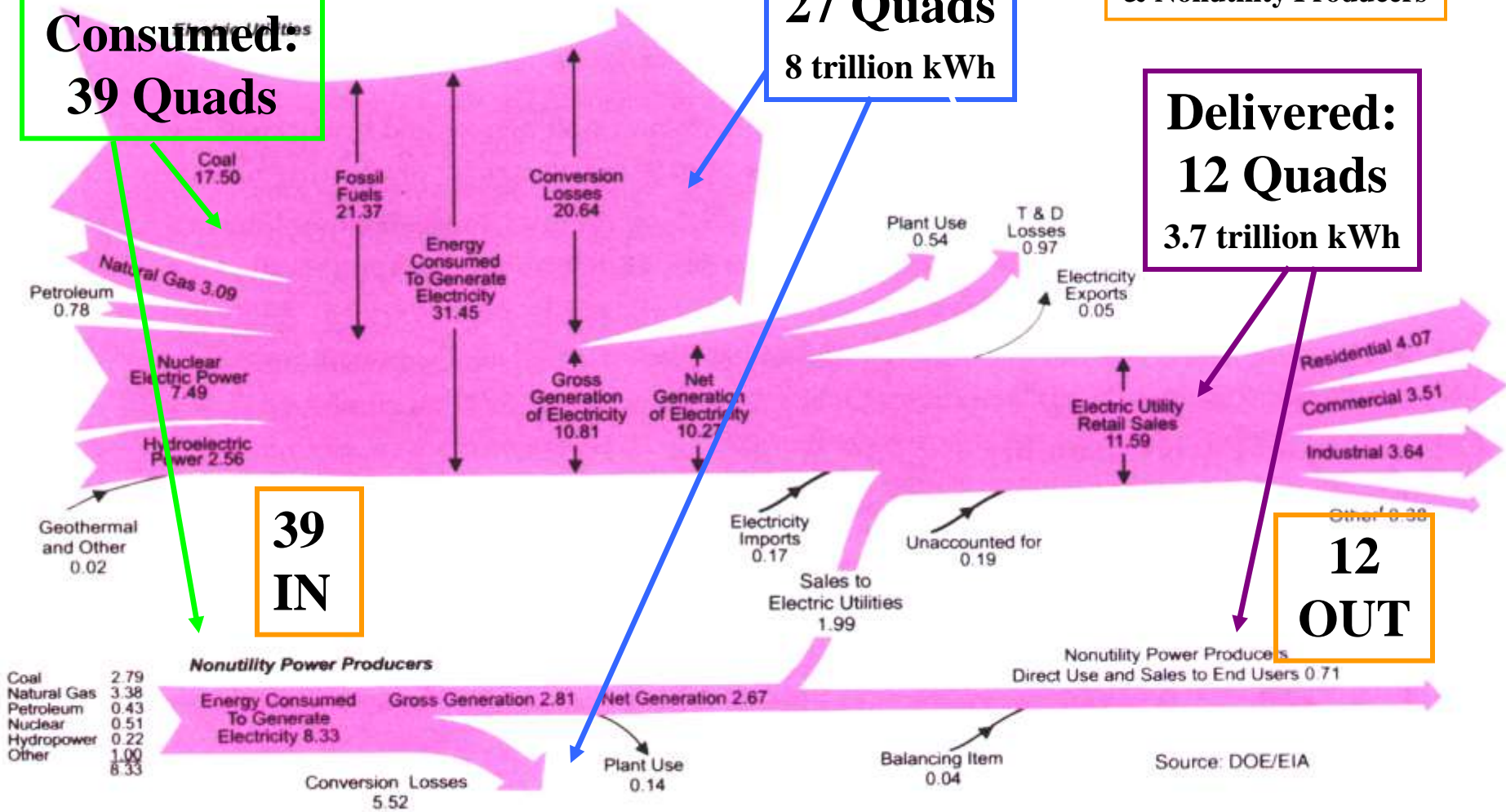
**Wasted:  
27 Quads  
8 trillion kWh**

**Total of Electric Utility  
& Nonutility Producers**

**Delivered:  
12 Quads  
3.7 trillion kWh**

**39  
IN**

**12  
OUT**



Source: DOE/EIA

Shell Oil addresses the present one million new people per week population growth in “Energy for the Future” (2 min.)



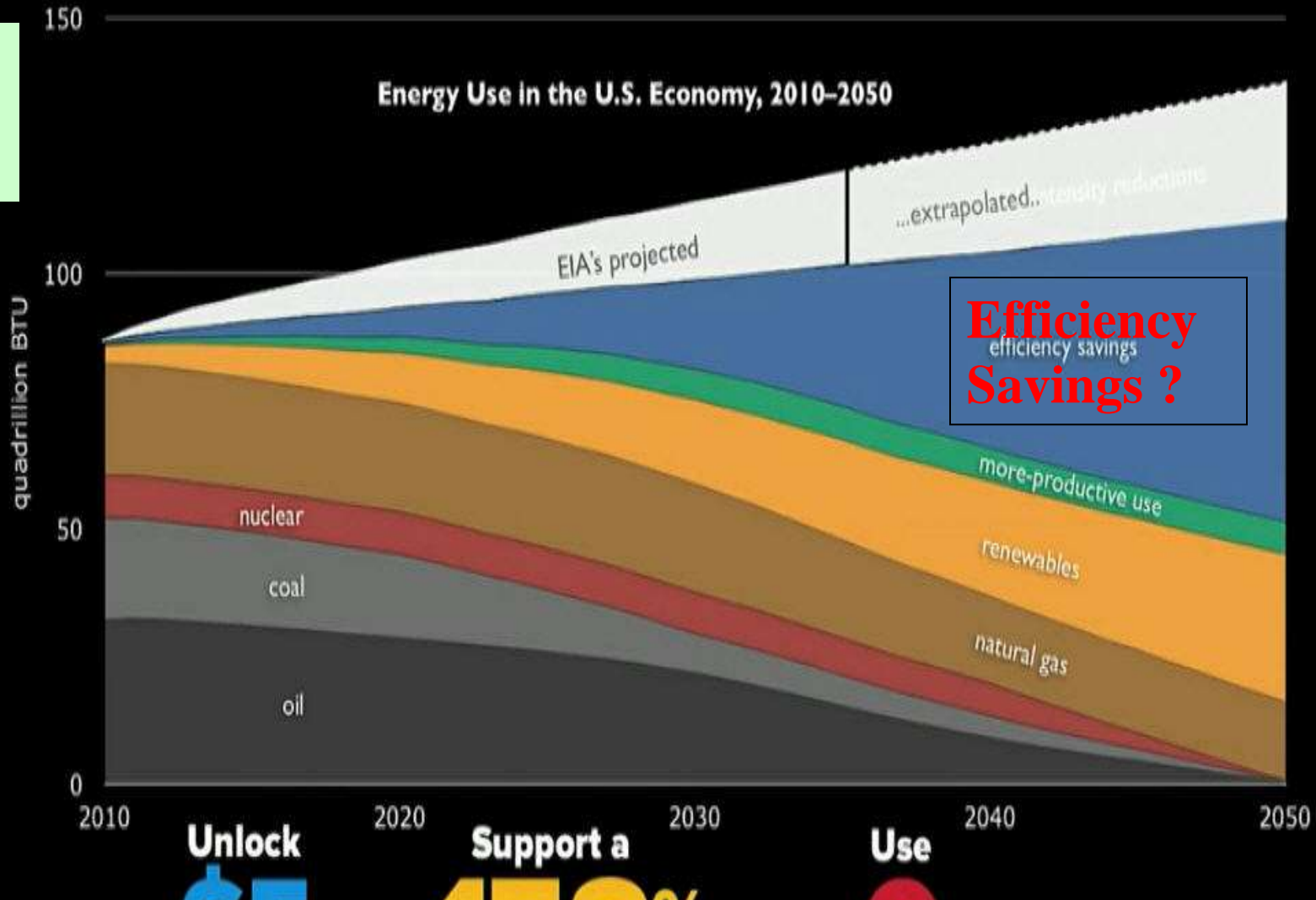
[http://www.youtube.com/watch?v=J2khSYZC9ks  
&list=PL1A4D83E7390B2A47](http://www.youtube.com/watch?v=J2khSYZC9ks&list=PL1A4D83E7390B2A47)



# Reinventing Fire provides a credible path to a U.S. economy free of oil and coal by 2050

Book release in 2011

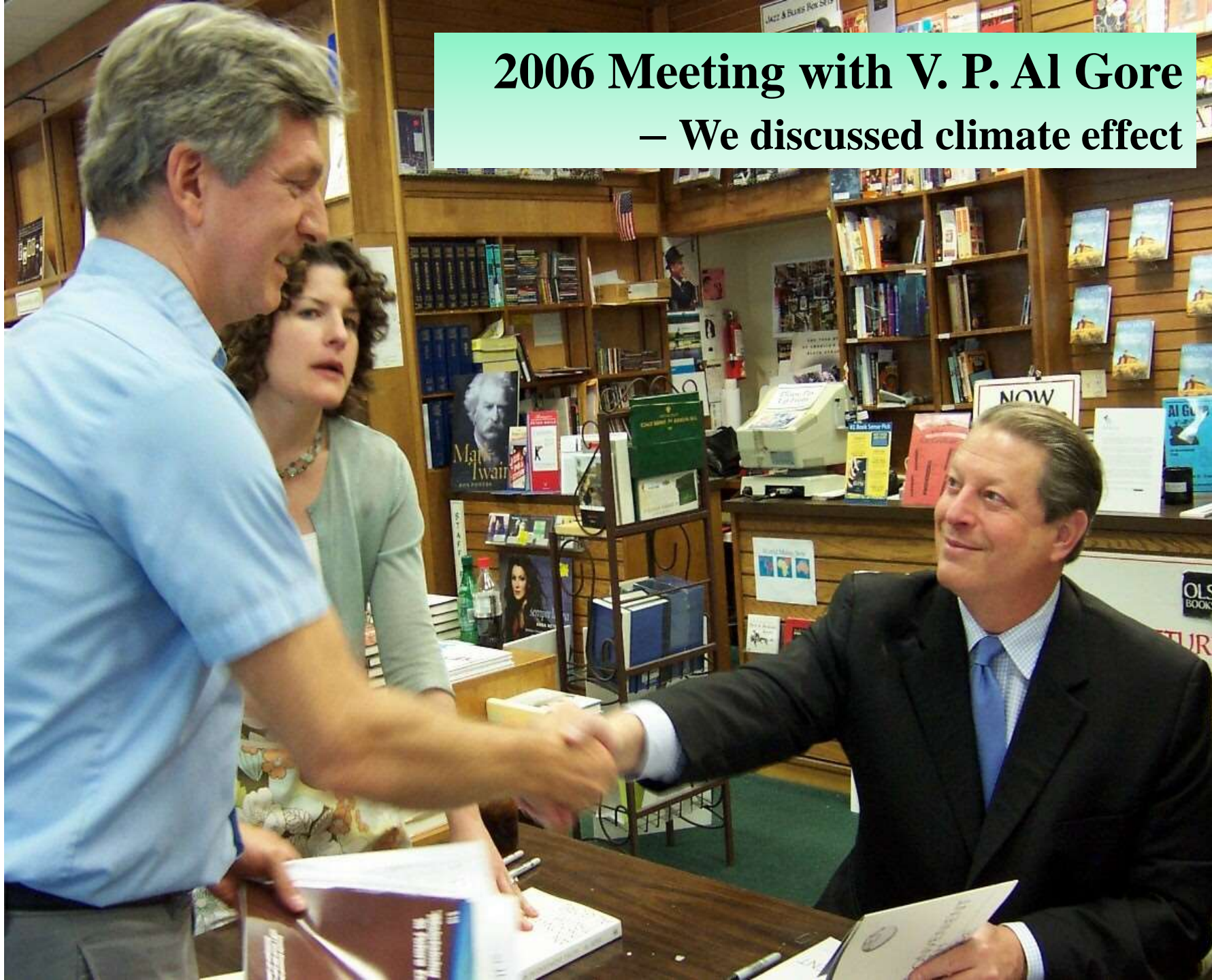
Reinventing Fire video on YouTube



Rocky Mountain Institute, **RMI.org**, founded by Amory Lovins

# 2006 Meeting with V. P. Al Gore

– We discussed climate effect



# Earth's Most Recent 400,000 Year Climate History

credit: Dr. Jim Hansen, NASA Goddard Inst. for Space Studies

## CO<sub>2</sub> and the "Omery Climate Beast"

How might today's human-caused increases in atmospheric concentrations of carbon dioxide and other greenhouse gases change the planet? The past provides clues. Geological records show that in the past 400,000

years, atmospheric concentrations of carbon dioxide, average Earth temperature, and sea levels have risen and fallen roughly in tandem, in 100,000-year cycles paced by slight oscillations in Earth's orbit. These oscilla-

tions affect the distribution of sunlight, hardly affecting the total amount reaching Earth; yet, scientists believe, this has been enough to set in motion chains of events that raise and lower temperatures, launch and end ice ages, and trigger vast changes in sea level.

What's coming next? Carbon dioxide—the number one greenhouse gas—has

much more power to affect Earth's temperature than the orbital changes do. And in just the past 150 years, humankind has boosted carbon dioxide concentrations by 32 percent. NASA planetary scientist Jim Hansen says that if we continue to increase greenhouse-gas emissions, temperatures will rise between 2 and 3 °C this century, making

Earth as warm as it was three million years ago, when seas were between 15 and 35 meters higher than they are today. His predictions bear weight partly because he can verify his methods: using geological records, he has calculated past temperatures, and his results closely match the measured temperatures shown here. DAVID TALBOT

377



MIT's *Technology Review*, July/August, 2006

# CO<sub>2</sub> and the "Ornery Climate Beast"

This composite of the past 400,000 year earth history proves CO<sub>2</sub>, world temp, and sea level are extremely close-correlated

Global CO<sub>2</sub> Level in 2015

400 ppm

Temp Gap: 5°C (9°F)

Sea Level Gap

Baseline:

0 m Sea Level = 290 ppm CO<sub>2</sub> = 15°C World Temp

- Atmospheric CO<sub>2</sub> parts per million
- Average Earth temp. degrees Celsius
- Sea level meters above/below today's sea level

Global temperatures have risen 0.8°C in the last 100 years.

14.55°C

C

CO<sub>2</sub>, Temp, Sea Level are inextricably correlated and track each other always in lockstep

400,000 years ago      350,000      300,000      50,000      years ago      Present

Break in graph

Present day

Technology Review, July/August 2006

Projected Sea Level Rise is 80 meters

KEY to graph: 10 ppm = 0.5°C = 10m sea level rise

... Graph enhancements by Thomas Valone, PhD, PE

July, 2015

# A WORLD 4°C WARMER

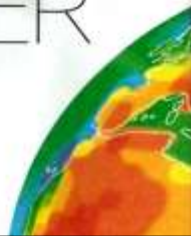
It may happen in our lifetime. **Shanta Barley** investigates what life will be like

BY 2055, climate change is likely to have warmed the world by a dangerous 4°C unless we stop pumping greenhouse gases into the atmosphere the way we do now. This is the startling conclusion of a study by the UK Met Office, unveiled at a conference in Oxford this week.

Why so soon? Because temperature rises caused by greenhouse gas emissions are expected to trigger dangerous feedback loops, which will release ever increasing amounts of greenhouse gases. The nature and scale of these feedback loops is a subject of vigorous debate among climate scientists, but warmer oceans, for instance, may liberate more

dissolved CO<sub>2</sub>, and plants may decay faster in a warmer climate. The Met Office ran 17 different models with these feedbacks. All concluded a 4°C world by 2055 was likely if emissions continue to rise. Even if we are lucky, we are still likely to hit 4°C by 2070.

institute for Climate Impact Research, Germany. Even the less pessimistic estimate of a 0.65-metre rise by 2100 would put at least 190 million people a year at risk from floods, says Rahmstorf's colleague Jochem Hinkel.



## The Amazon - gone

In a 4°C world, climate change, deforestation and fires spreading from degraded land into pristine forest will conspire to destroy over 83 per cent of the Amazon rainforest by 2100, according to climatologist Wolfgang Cramer at the Potsdam Institute for Climate Impact Research in Germany. His climate models show global temperatures

Will yours rise 130 degrees? Conference attendees in London agreed to increase the number of California's state representatives to 15.

## The Nation

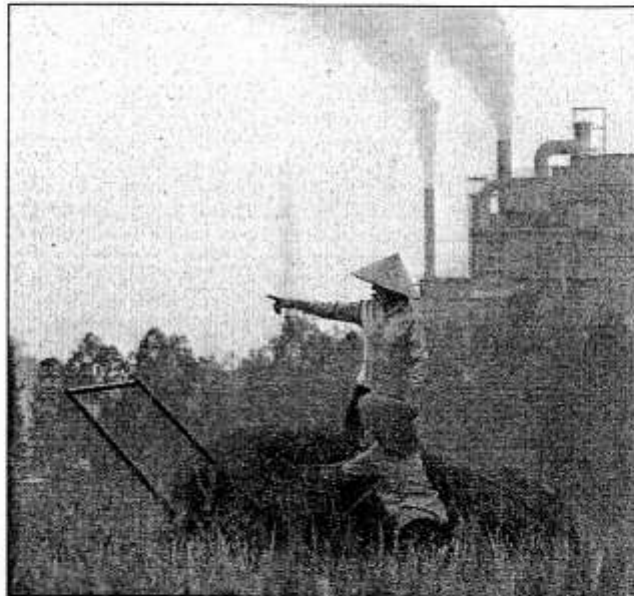
# New Analysis Brings Dire Forecast Of 6.3-Degree Temperature Increase

By JULIET EILPERIN  
*Washington Post Staff Writer*

Climate researchers now predict the planet will warm by 6.3 degrees Fahrenheit by the end of the century even if the world's leaders fulfill their most ambitious climate pledges, a much faster and broader scale of change than forecast just two years ago, according to a report released Thursday by the United Nations Environment Program.

The new overview of global warming research, aimed at marshaling political support for a new international climate pact by the end of the year, highlights the extent to which recent scientific assessments have outstripped the predictions issued by the Nobel Prize-winning U.N. Intergovernmental Panel on Climate Change in 2007.

Robert Corell, who chairs the Climate Action Initiative and reviewed the UNEP report's scientific findings, said the significant global temperature rise is likely to occur even if industrialized and de-

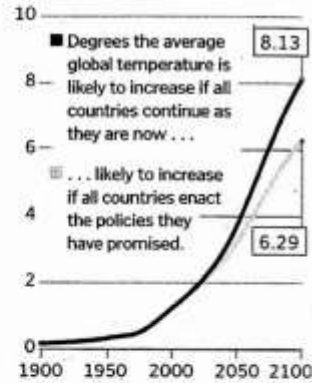


Farmers are overshadowed by a smoke-belching cement factory outside Hanoi. Even with sharp emissions curbs, temperatures may rise disastrously.

## Warming Trend

Researchers say global temperatures as likely to rise more than six degrees by the end of the century even if every country enacts all climate legislation it has promised to enact to date.

## Temperature increases, in degrees Fahrenheit



SOURCE: Sustainability Institute  
THE WASHINGTON POST

Then in 2009,  
TWO DIFFERENT  
CLIMATE GROUPS:  
SAME PREDICTION

Washington Post, 9/25/09, p. A4

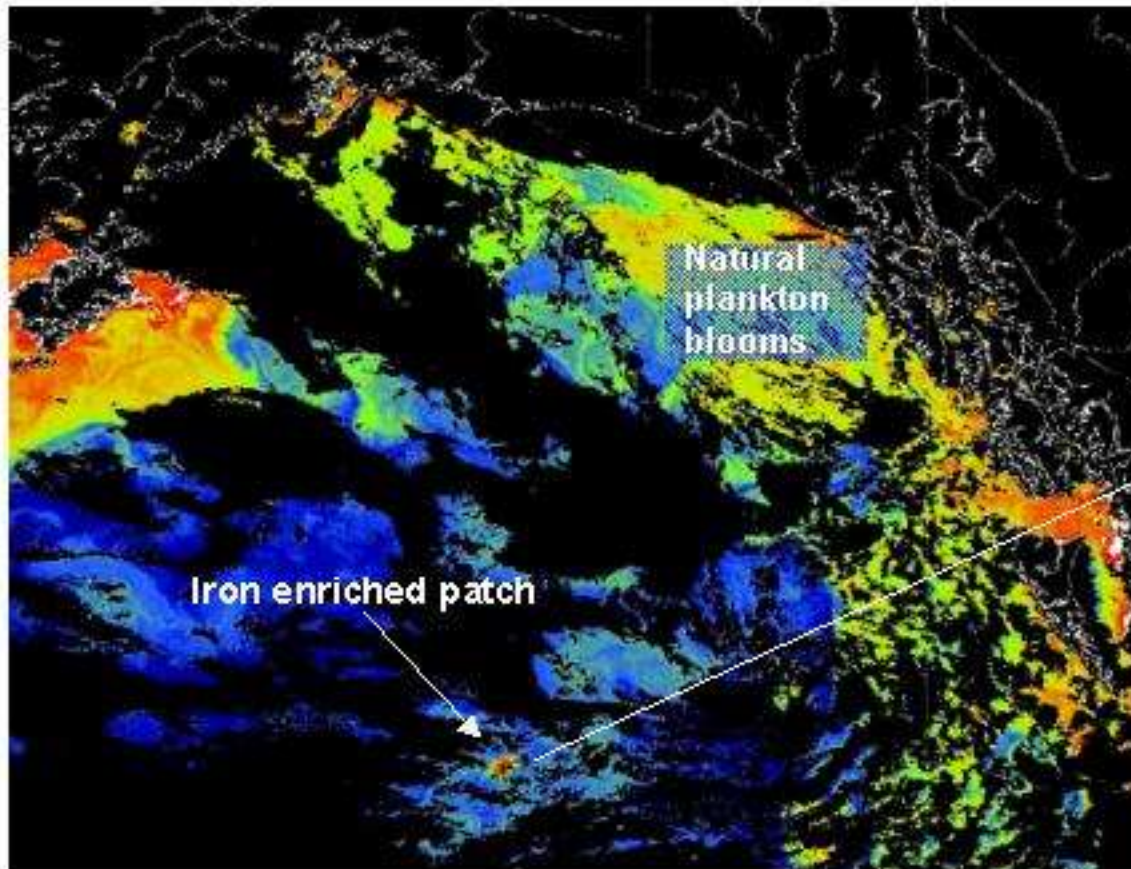
PRIZE FIGHT  
Time to revamp  
the Nobels

News  
WEEKLY October 3 - 9, 2009

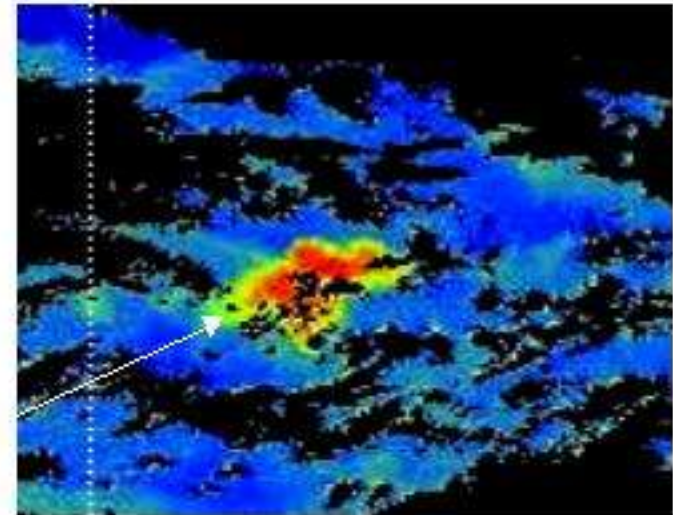
Future  
Earth

New Scientist, 10/3/09

Iron stimulated blooms are very similar to natural blooms



**SERIES (2002) iron fertilization patch near Alaska compared with a natural bloom**



**Close-up of the SERIES bloom (~ 2000 km<sup>2</sup>) 20 days after iron application**

**A Planktos bloom will be 5-10 times this size ... still a small fraction of the surrounding natural blooms**

# Iron Seeding for Plankton Bloom CO2 Capture Vindicated

SPACE TECH ENVIRONMENT HEALTH LIFE PHYSICS&MATH SCIENCE IN SOCIETY

## My New Scientist

[Home](#) | [Environment](#) | [News](#)

See Russ George DVD  
IRI's COFE2 in 2006

### Geoengineering with iron might work after all

18 July 2012 by [Michael Marshall](#)  
Magazine issue 2874. [Subscribe and save](#)  
For similar stories, visit the [Climate Change](#) Topic Guide

**Editorial:** "We can't afford to neglect ways to halt global warming"

 PRINT  SEND

IF YOU want to help stop climate change, try tipping some iron into the sea. For years, this geoengineering idea has been considered a busted flush, but new results suggest it really can work.

Tiny floating algae called phytoplankton pull carbon dioxide out of the atmosphere. When they die, the plankton sink to the seabed, taking the carbon with them. Over thousands of years, this strips CO<sub>2</sub> from the air, lowering temperatures.

But many ocean regions are short of iron, which plankton need to grow, so the process does not occur. Adding iron should stimulate plankton growth in these areas.

That was the theory, at least. In practice, it is charitable to say the results have been mixed. For many people, the idea died in 2009, when a field trial called



Algae love iron (Image: Power & Photo Library)

# *Power Africa Project*



Night Lights Visible from Space Show  
**African Continent** of Energy Poverty



# IRI Power Africa Homes Light Project

Where's the sun gone in Obama's US\$7 bi Power Africa project?

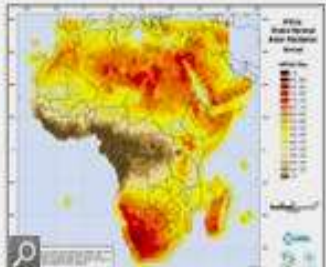


Is Obama's US\$7 billion plan for powering missing a trick by overlooking solar. Image: Nathalie Bertrams.

President Barack Obama's US\$7 billion initiative to bring power to the African people was launched in celebratory mood at the end of last month.

Power Africa aims to add more than 10,000MW of cleaner, more efficient electricity generation capacity over five years. At least 20 million more households and commercial entities will be electrified from the grid, distributed generation or mini-grids. Ethiopia, Ghana, Kenya, Liberia, Nigeria and Tanzania are the first to participate in the initiative, which has already levered US\$9 billion from private industry.

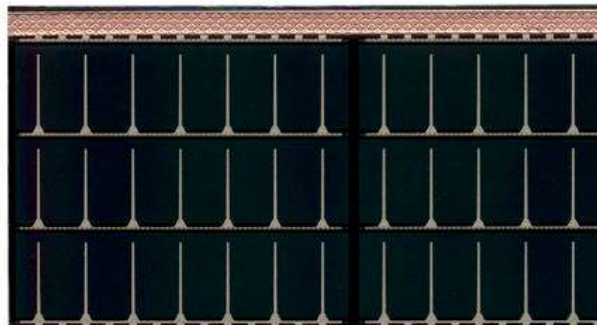
The roll call of companies already recruited to the cause is impressive. General Electric has committed to help bring online 5MW of new,



- Supply **LED – Solar-NiCd modules** for lighting homes
- Recruit African distribution organization
- Aim for **10,000 homes per month**
- Use **donated money** to accomplish project
- Goal: Jumpstart evening and **nighttime studying and reading**



Solar Module: Thin Flexible Solar Cell 3 Volt 100 mA



NiCd Rechargeable Cell: 1.2V for Solar garden Lantern (1P)



X 3 for  
8 hours  
of light



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lightweight | portable | waterproof

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**Model 'EMRG'**  
**Only \$10 retail**

**MpowerD.com**

# Capturing Ambient Electromagnetic Energy To Drive Small Electronic Devices

July 8, 2011 by Editor Ray Kurzweil

Georgia Tech School of Electrical and Computer Engineering professor Manos Tentzeris holds a sensor (left) and an ultra-broadband spiral antenna for wearable energy-scavenging applications. Both were printed on paper using inkjet technology.

Researchers at **Georgia Tech** School of Electrical and Computer Engineering have discovered a way to capture and harness energy transmitted by radio and television transmitters, cell phone networks, and satellite communications systems by scavenging ambient energy from the air.

The researchers used inkjet printers to print sensors and **ultra-wideband antennas** on paper or flexible polymers, functioning from 100 MHz to 60 GHz.

**Energy Harvesting  
is now Mainstream  
Free Energy!**

Prof. Moddel has Terahertz antennas



**B  
R  
E  
A  
K  
T**

# Innowattech – 500 kW per km

- Piezoelectric panels for roadways and train tracks
- Generates electricity from passing vehicles
- Game changing invention ready for installation
- Should be developed in this country as well
- Advocated by IRI in *Future Energy Annual 2012*

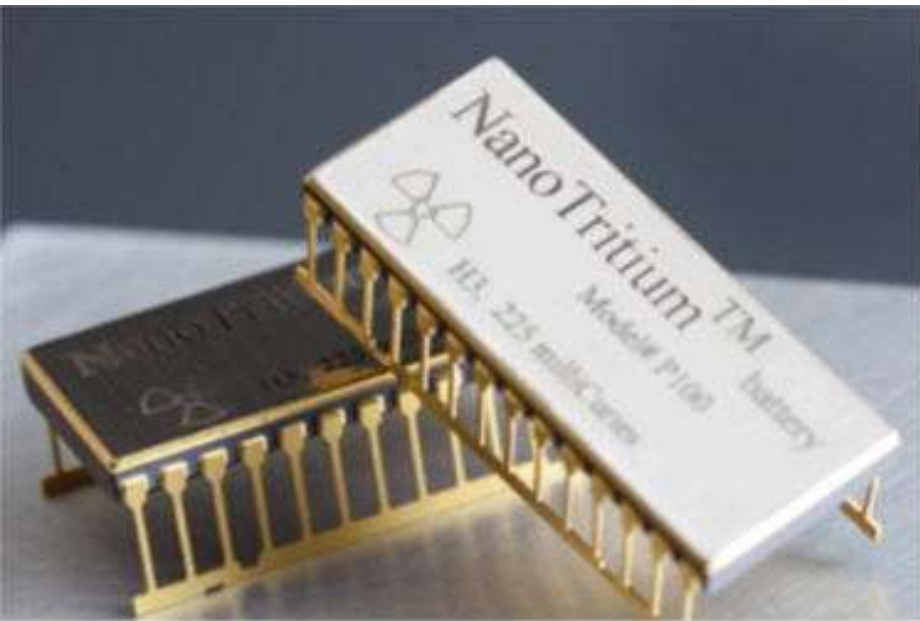


Piezo panels ready for insert



# Tritium Betavoltaic Battery

## BREAKTHROUGH



- ECN magazine 7/2012
- Nanowatt power - AFRL
- **20 – 40 year lifespan**
- IRI advocacy for 10 yrs.
- Paul Brown, IRI COFE 1999, Patent # 4,835,433

CityLabs.net Model P100

BetaBatt Inc. - SBIR grant from NSF

U of Wisconsin solved degradation with liquid electrodes

IEEE Spectrum, 2004  
“Daintiest Dynamos”

- **Ray Kurzweil** “Ten Coolest Technologies - PC magazine, 7/12/06

# Polymer Generates Energy **ONLY** from a Wet Surface

- <http://video.mit.edu/watch/artificial-muscles-at-mit-13539/>
- MIT reports a polymer with a piezoelectric layer *generates electricity* only from a **moisture gradient** without any pressure!
- 30 second MIT video shows movement as polymer dries and then flattens out to get wet again – a true free energy generator!



# Magnetic Field Gradients

## The Stern–Gerlach Experiment and Electron Spin

*Modern Physics, Schaumm's Outline Series, Gautreau, McGraw Hill, 1978*

In the *Stern–Gerlach experiment*, performed in 1921, a beam of silver atoms having zero total orbital angular momentum passes through an *inhomogeneous* magnetic field and strikes a photographic plate, as shown in Fig. 21-1. Any deflection of the beam when the magnetic field is turned on is measured on the photographic plate.

**Their experimental setup:** The magnetic field  $B$  is more intense near the pointed surface at the top than near the flat surface below, creating a slope in a graph of  $B$  vs.  $z$ , which is the gradient  $dB/dz$ .

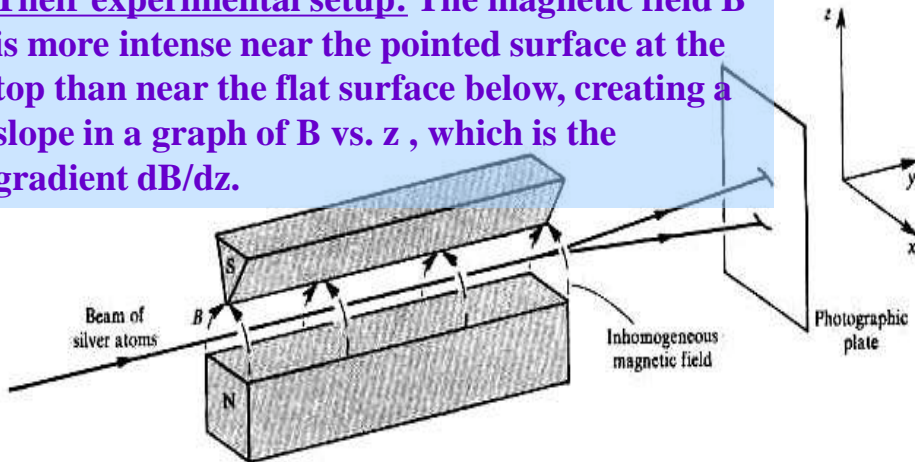


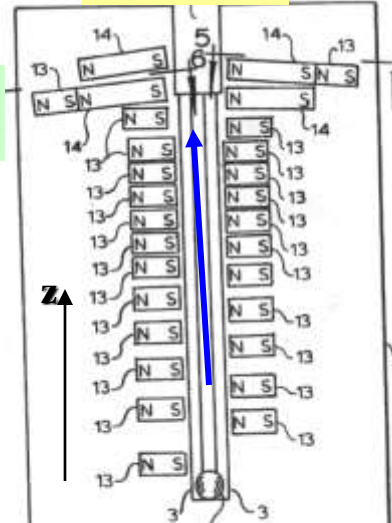
Fig. 21-1

The purpose of the *inhomogeneous* magnetic field is to produce a deflecting force on any magnetic moments that are present in the beam. If a homogeneous magnetic field were used, each magnetic moment would experience only a torque and no deflecting force. In an inhomogeneous magnetic field, however, a net deflecting force will be exerted on each magnetic moment  $\mu_z$ . For the situation of Fig. 21-1,

$$F_z = \mu_z \cos \theta \frac{dB}{dz} \quad (21.1)$$

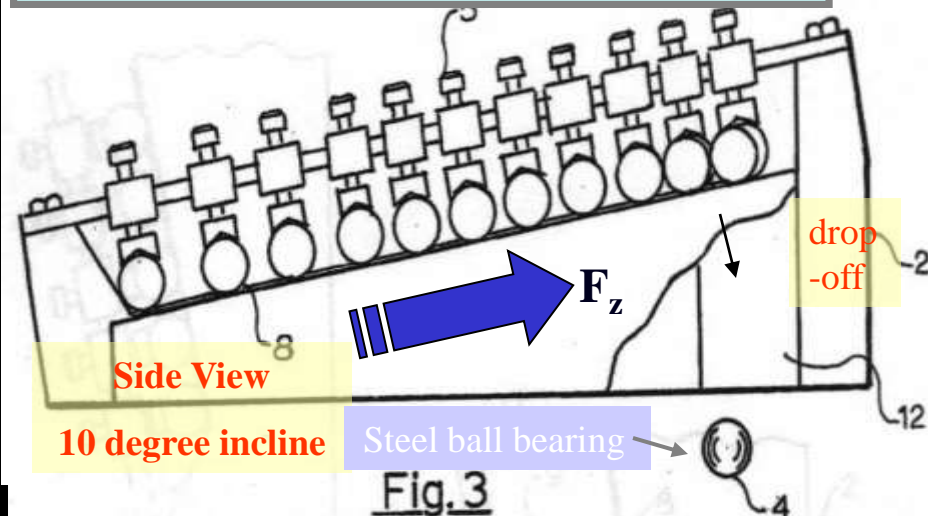
where  $\theta$  is the angle between  $\mu_z$  and  $B$ , and  $dB/dz$  is the gradient of the inhomogeneous field

Top View



The net Force created on the ball bearing = the magnetic field gradient multiplied by the induced magnetic moment, as with the Stern–Gerlach Experiment

**Hartman Patent #4,215,330**



Side View

10 degree incline

Steel ball bearing

Fig.3

# Valone's Spiral Magnetic Motors





# Science Times

The New York Times

Jan 21, 1997

TUESDAY, JANUARY 21, 1997

## Physicists Confirm Power of Nothing, Measuring Force of Quantum 'Foam'

Fluctuations in the vacuum are  
the universal pulse of existence.

By MALCOLM W. BROWNE

**F**OR a half century, physicists have known that there is no such thing as absolute nothingness, and that the vacuum of empty space, devoid of even a single atom of matter, seethes with subtle activity. Now, with the help of a pair of metal plates and a fine wire, a scientist has directly measured the force exerted by fleeting fluctuations in the vacuum that pace the universal pulse of existence.

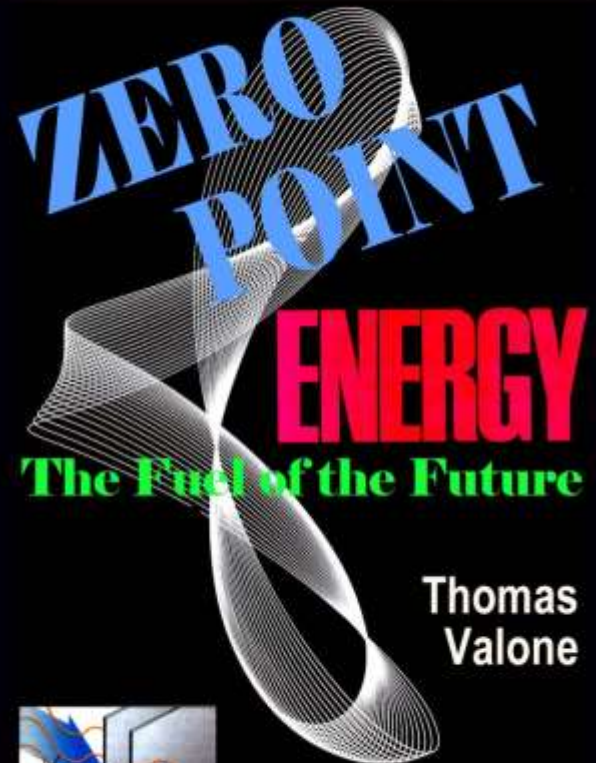
The sensitive experiment performed at the University of Washington in Seattle by Dr. Steve K. Lamoreaux, an atomic physicist who is now at Los Alamos National

Laboratory, was described in a recent issue of the journal *Physical Review Letters*. Dr. Lamoreaux's results also perfectly matched theoretical predictions based on quantum electrodynamics, a theory that touches on many of the riddles of existence and on the origin and fate of the universe.

The theory has been wonderfully accurate in predicting the results of subatomic particle experiments, and has also been the basis of speculations verging on science fiction. One of the wilder ones is the possibility that the universal vacuum — the ubiquitous empty space of the universe — might actually be a false vacuum.

If that were so, something might cause the present-day universal vacuum to collapse to a different vacuum of a lower energy. The effect, propagating at the speed of light, would be the annihilation of all matter in the universe. There would be no warning for humankind; the earth and its inhabitants would simply cease to exist at

*Continued on Page C6*



# Quantum Energy Extraction

Parallel plates

spacer

5000

Haisch-Moddel patent 7,379,286

It is reasonable to expect that a 0.1 microns Casimir cavity would result in a release of 1 to 10 eV for each injection of a He, Ne, Ar, Kr or Xe atom into such a cavity.



## Test of zero-point energy emission from gases flowing through Casimir cavities

Space, Propulsion & Energy Sciences International Forum - 2012  
1 March 2012

Olga Dmitriyeva & Garret Model\*  
Department of Electrical, Computer, and Energy Engineering  
University of Colorado  
\*Presenter (also with Jovion Corporation)

this orbit is  $6.6 \times 10^{15} \text{ s}^{-1}$ , no matter injected into a Casimir cavity the one as experienced by the orbiting assume that the decay to a new will involve gradual release of energy er than a sudden optical radiation

### Pumping Gas Through Casimir Cavities

United States Patent

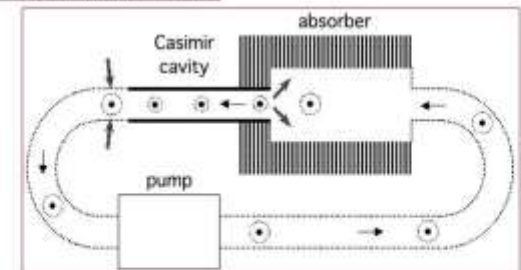
Haisch et al.

QUANTUM VACUUM ENERGY EXTRACTION

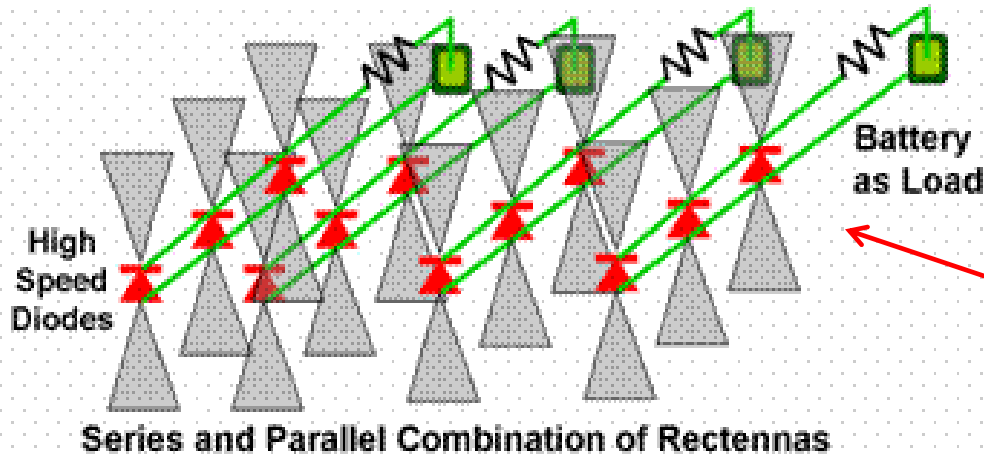
Inventors: Bernard Haisch, Redwood City, CA (US); Garret Model, Boulder, CO

Patent No.: US 7,379,286 B2

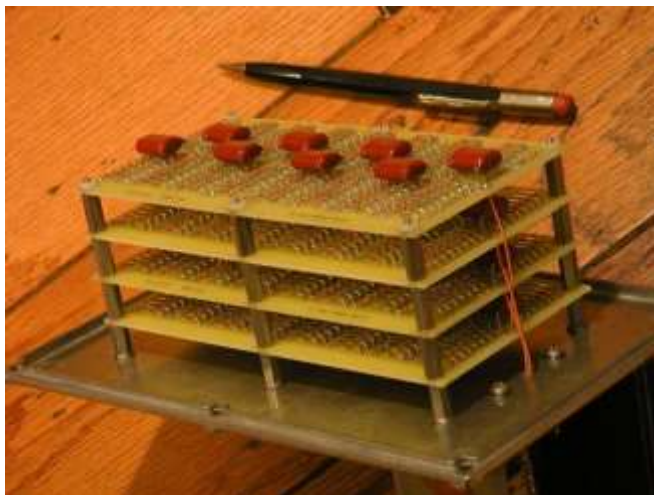
Date of Patent: May 27, 2008



# Rectifying Ambient Thermal and Nonthermal Electric Noise

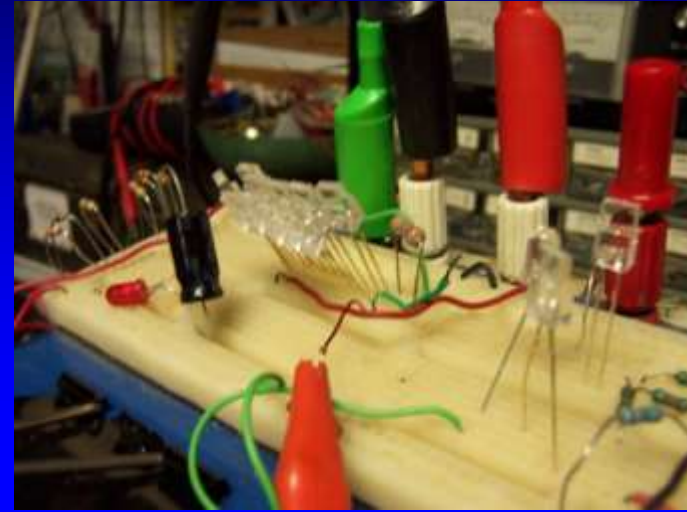


- Prof. Dagenais & Moddel amplifies ambient thermal energy harvested with nanorectennas
- Zero-bias diodes that need no minimum energy to conduct
- Backward tunnel diodes



- Example of a Diode Array  
24-hour electrical energy source

# IRI Diode Energy Converter Research

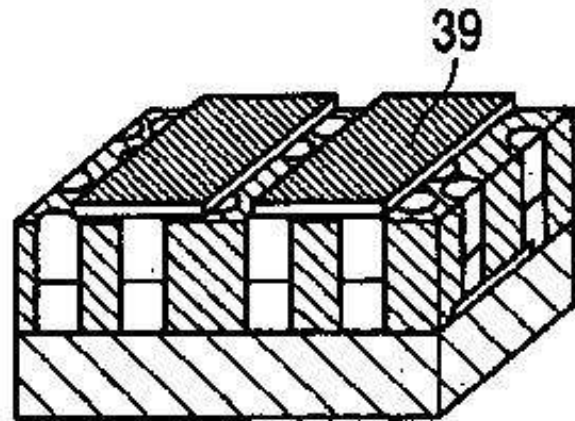
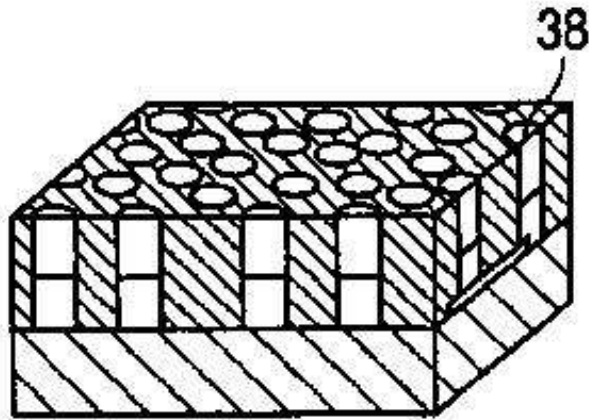


10 Megohm resistor in series with 10 diodes



Keithley 486 Picoammeter reads 2.27 nanoamps constant current with or w/o resistor in series

# Proposed Diode Energy Array Converter (DEAC) Design



1) Kuriyama, Patent #7,183,127 cites Brown patent "Diode Array" #3,890,161

Kuriyama: 1 nm diode pillars with 3 nm spacing yields  $10^{12}$  diodes /  $\text{cm}^2$

2) Compares favorably to **Hastas, 2003\*** with GaAs Schottky diodes grown by atomic layer molecular beam epitaxy (ALMBE) yielding  $10^{11}$  diodes /  $\text{cm}^2$

\*Hastas, *J App Phys*, 93, 7, 2003, p. 3990

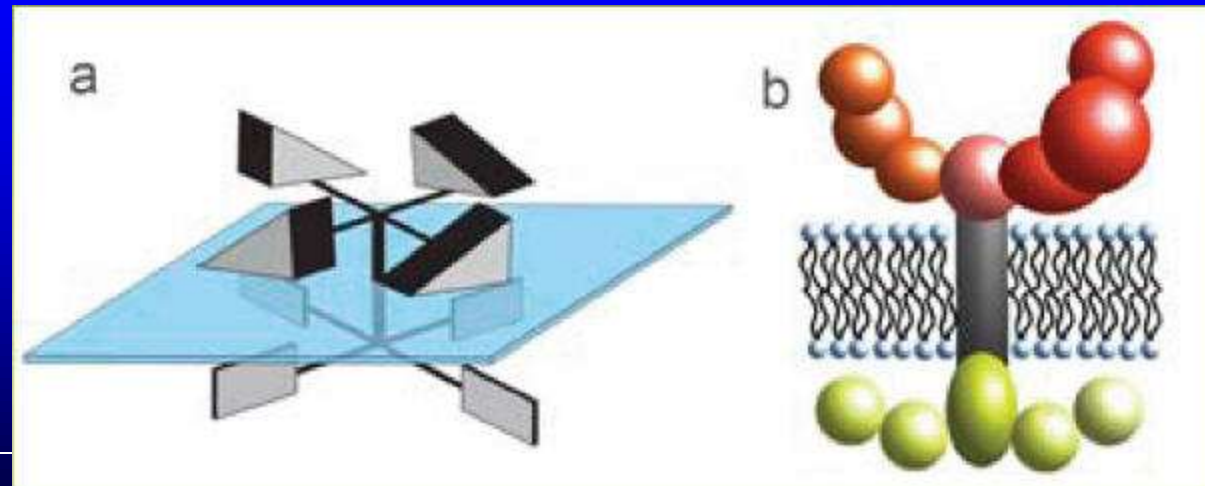
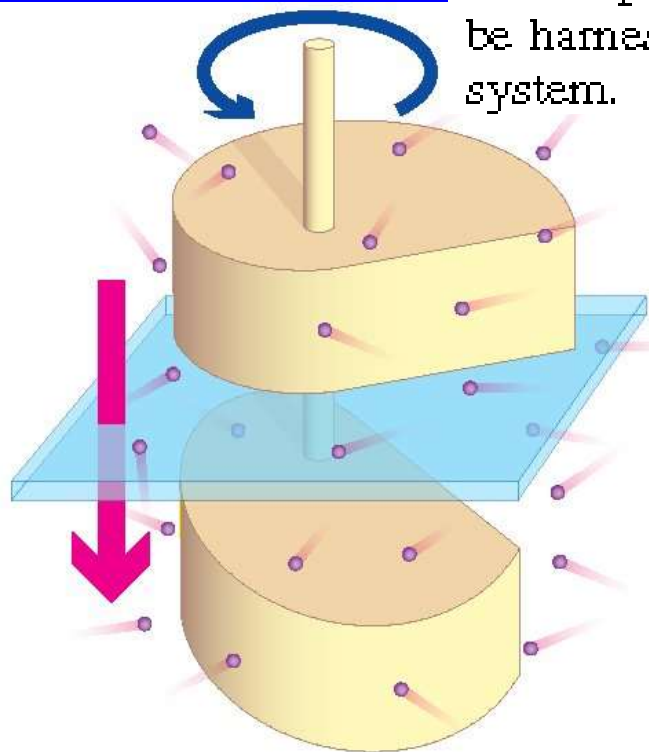
## Brownian Refrigerator

C. Van den Broeck

*Hasselt University, B-3590 Diepenbeek, Belgium*

R. Kawai

ternative, and arguably more promising approach, would be to utilize thermal fluctuations rather than fighting them. A well-documented example is the Brownian motor [1,2], which generates power through the rectification of thermal fluctuations. In this Letter, we present a novel method of microscopic cooling based on a Brownian motor in which, almost paradoxically, thermal fluctuations themselves can be harnessed to reduce the thermal jitter in one part of the system.



# *Electrostatic Motors*

Being reprinted in a new edition by IRI

- **Benjamin Franklin**, inventor
- First electric motor ever
- One operated for 86 years
- **Uses atmospheric electricity**
- **0.1 Hp** motors developed
- **10 kW to 1 MW** design range
- “Underutilized technology”
- Atmospheric potential of planet: **200 gigawatts**

Jefimenko, *Proc. of COFE*, 1999, p. 70

## ELECTROSTATIC MOTORS

NEW REVISED EDITION



**THEIR HISTORY, TYPES AND  
PRINCIPLES OF OPERATION**

**Oleg Jefimenko**

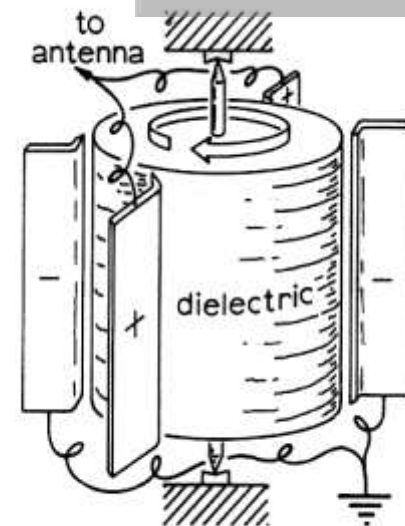


FIG. 3. Corona motor capable of operating from the atmospheric electric field.  
Jefimenko, *Am. J. Phys.*, V. 39, No. 7, 1971, p. 776



# THE AMATEUR SCIENTIST

*Electrostatic motors are powered by the electric field of the earth*

conventional energy resources? Several limitations must first be overcome. For example, a single sharp point can draw electric current from the surrounding air

turns in the horizontal plane on low-friction bearings. Each spoke of the "electric wheel," as Franklin called the machine, consists of a glass rod with a sharp point at its tip. An electrostatic

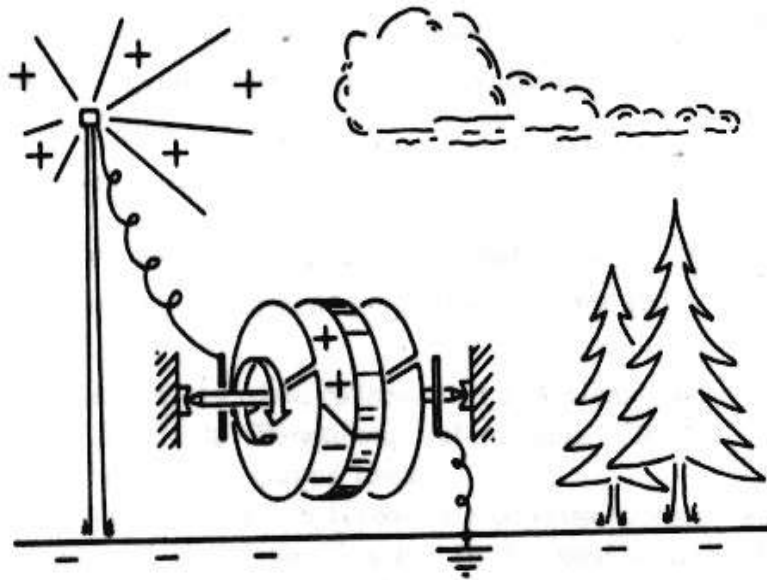


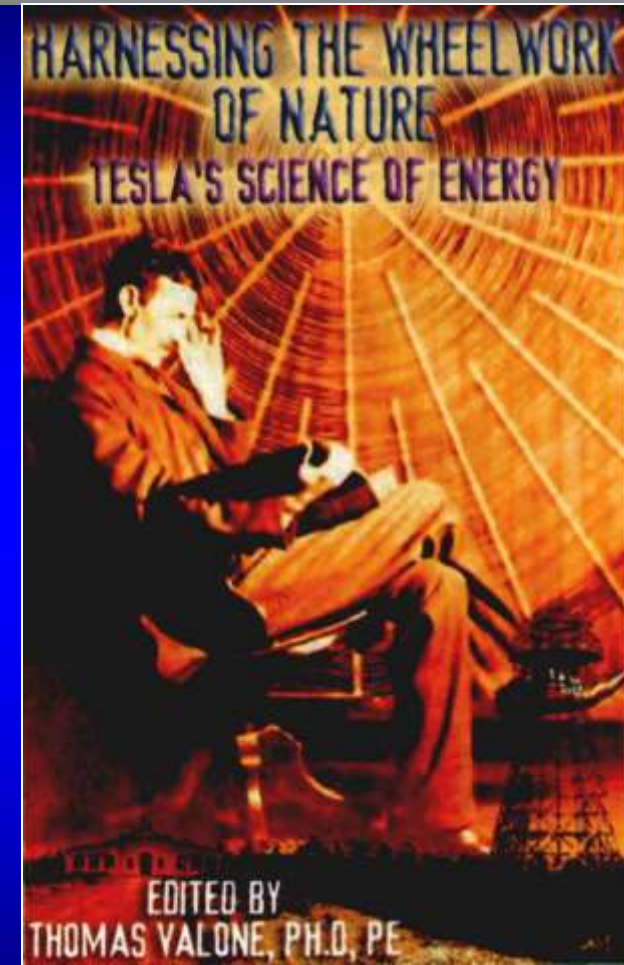
FIG. 2. Operation of the electret motor from the atmospheric electric field by means of an antenna with a radio-active collector.

- **24 foot antennas or higher**
- **tiny amount of polonium on tip of antenna boosts current**
- **electrets improve output**
- **corona motor is easy to build and "they can run forever"**



# Tesla's Design for Wireless Energy

- 1905 Earth is resonant LRC circuit
- Magnifying transmitter 200 ft tall
- Wardencllyffe sphere 68 foot diameter
- Resonates with earth-ionosphere natural 8 Hz frequency for 95% efficiency of transmission
- Longitudinal and transverse EM waves
- see *Harnessing the Wheelwork of Nature*



IRI - only one to celebrate **Wardencllyffe Tower** Centennial with a **Tesla Conference and Expo** as well as book release both in 2003

# PROCEEDINGS



## *OF THE FIRST INTERNATIONAL* **TESLA ENERGY SCIENCE**

**CONFERENCE & EXPOSITION**

**2003**

Wardenclyffe

Tower

Centennial

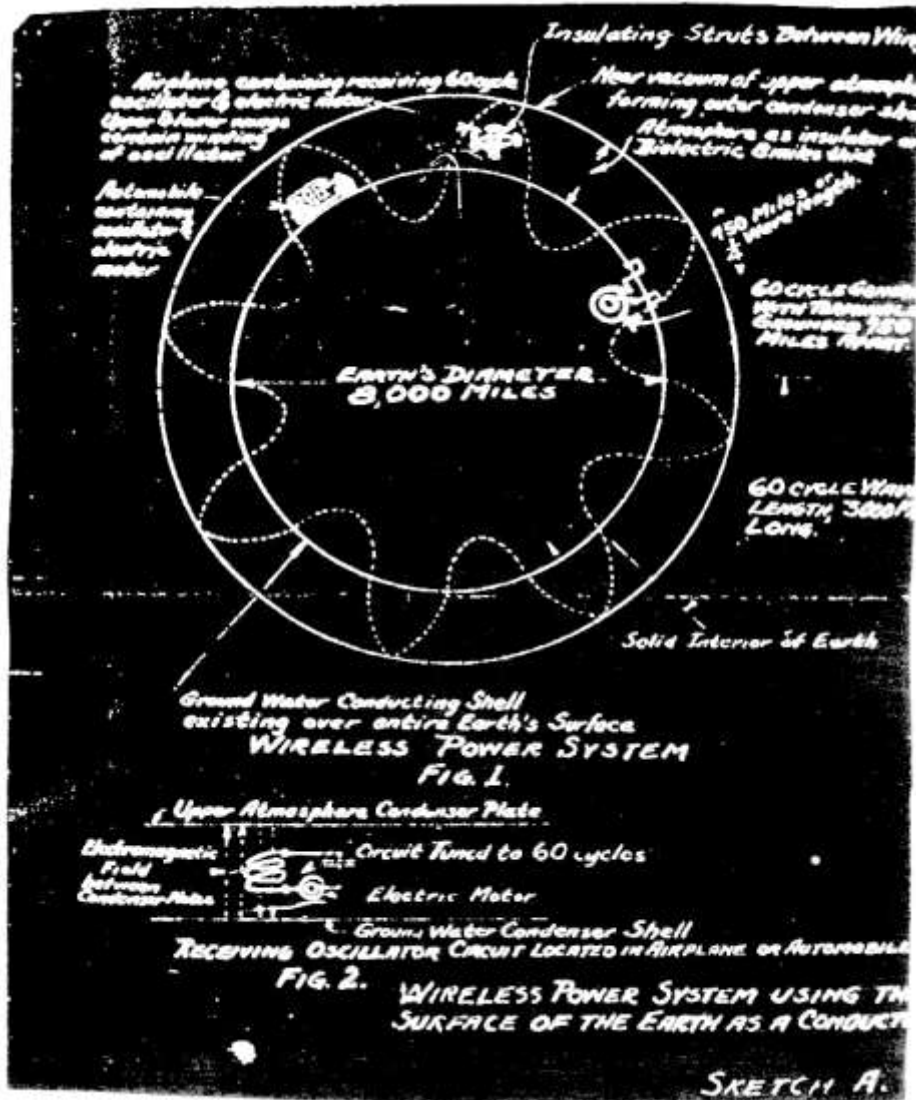


НИКОЛА  
ТЕСЛА

**Integrity Research Institute**

IRI was the only  
organization to  
celebrate the  
centennial

# Tesla's Magnifying Transmitter



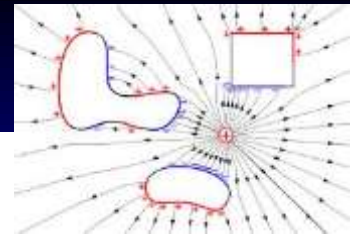
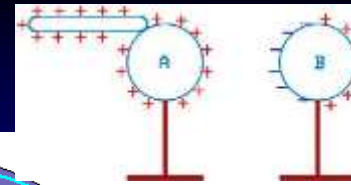
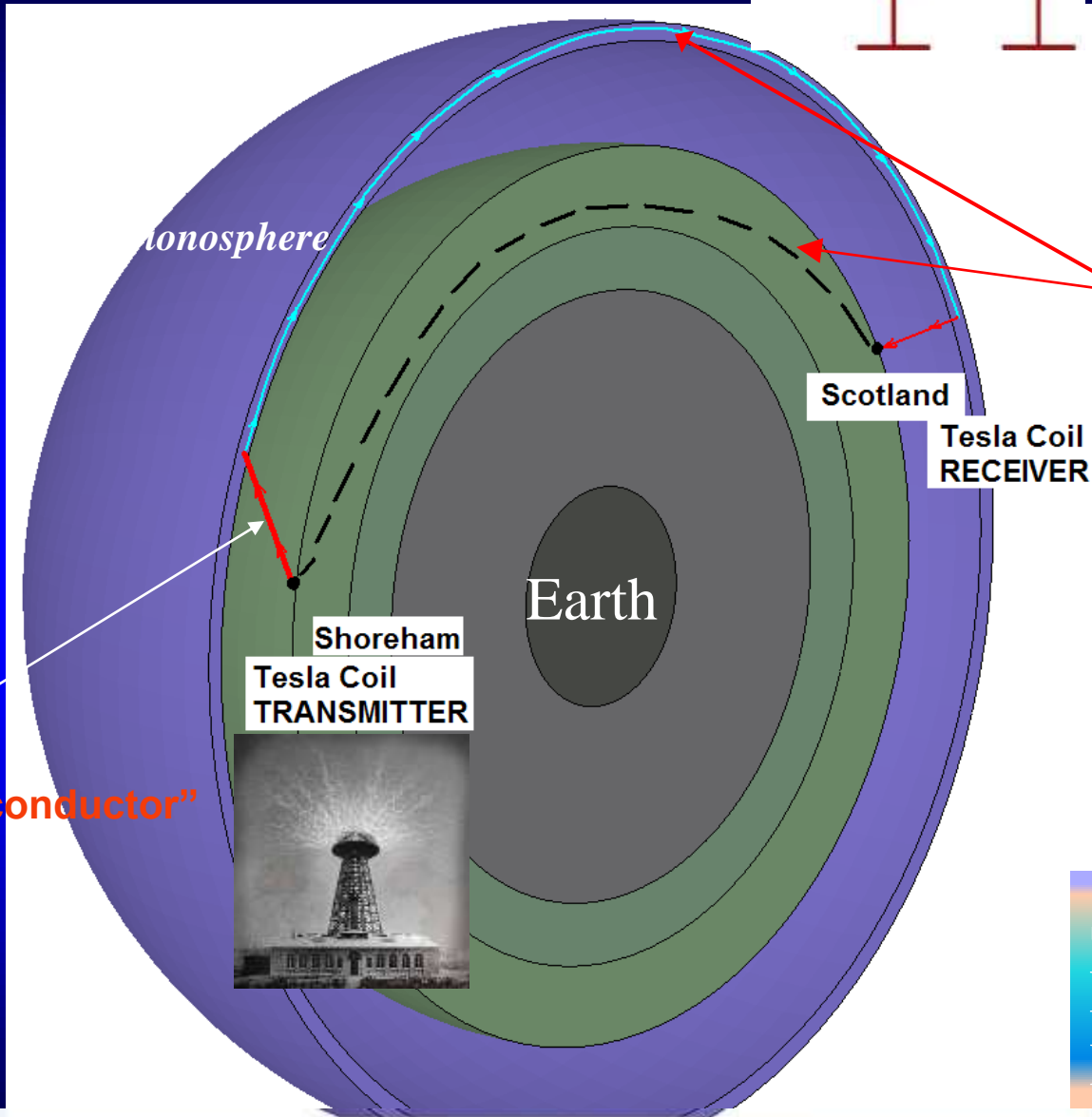
- Standing wave sketch
- Lossless transmission line
- 95% efficiency that is opposite to transmission circuit
- Earth's magnetic flux can be "strummed" or resonantly vibrated
- Increase at nodes-antinodes
- Air offers conductive path
- Pulsed ionizations of the air

# Electrostatic Induction (capacitive coupling)

High-field Gradient or differential capacitance

Also known as the "Tesla Effect" can be described as electrical displacement or the passage of electrical energy through space other than the application of voltage potential

Ionized plasma "conductor"

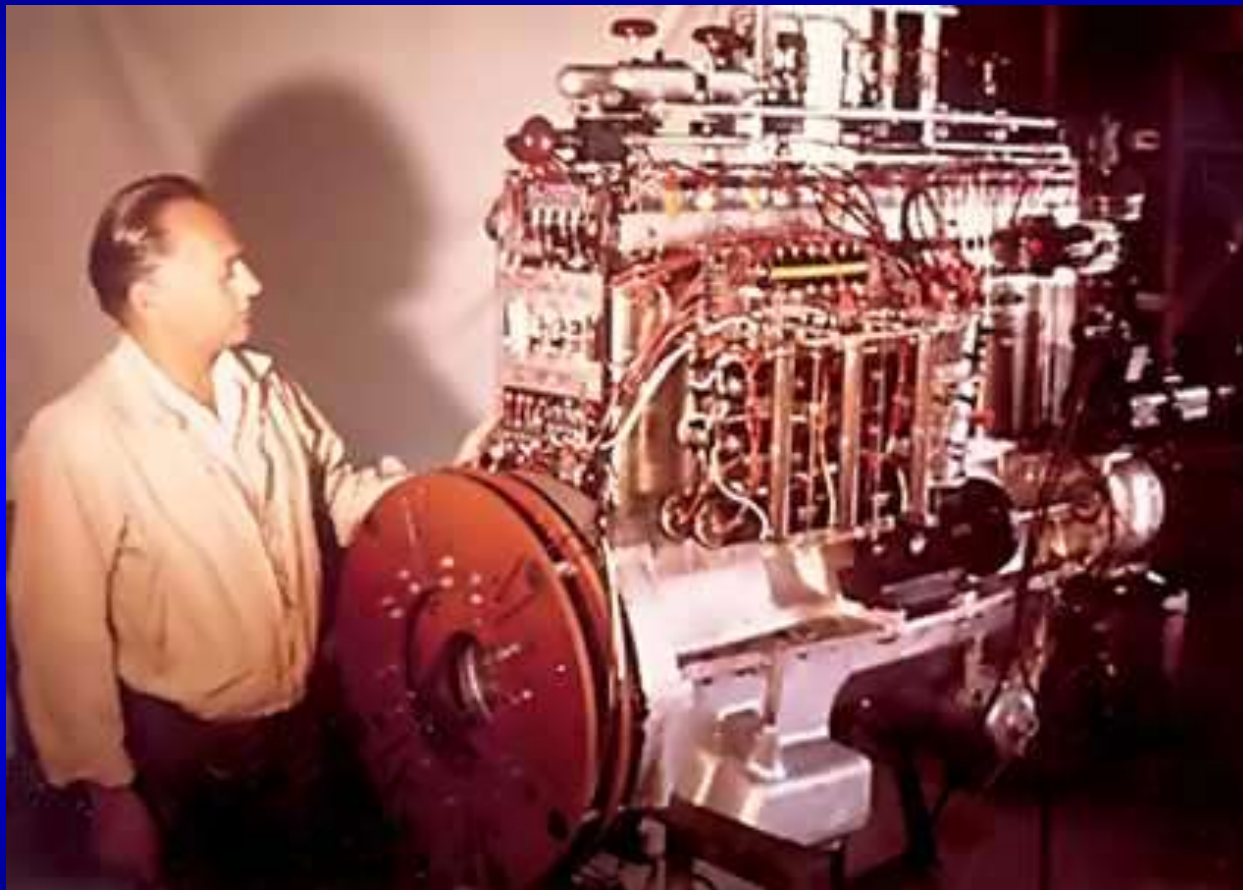


Giant capacitor

Slide from  
Nick Simos,  
PhD, PE

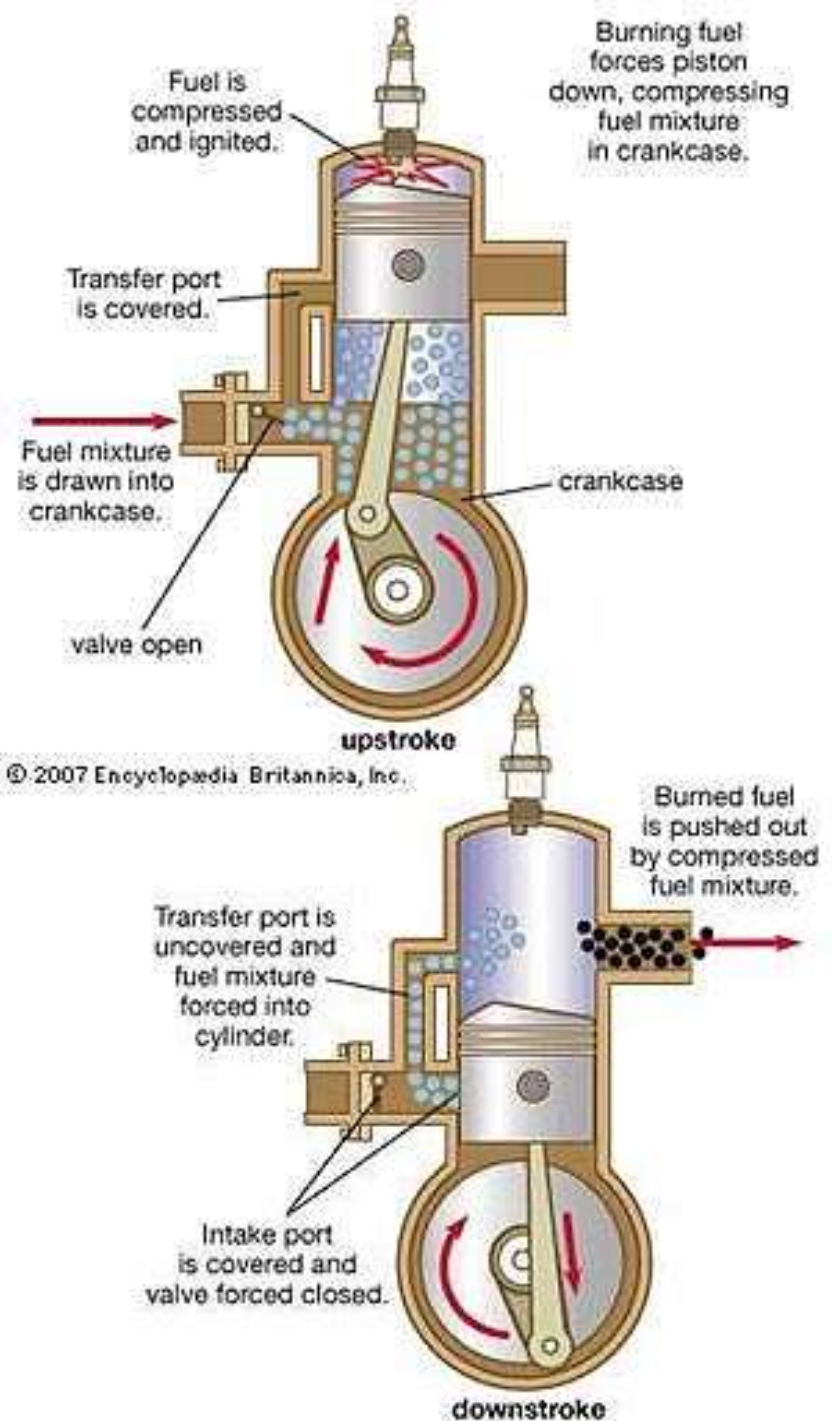
# Josef Papp

## Pulsed Plasma Discharge Engine



Hungarian immigrant worked on “Fastest Submarine” in 1960s for Canadian government. Built this 100 hp engine fueled with noble gases.

# Compare Papp to a Typical Two-Stroke Engine



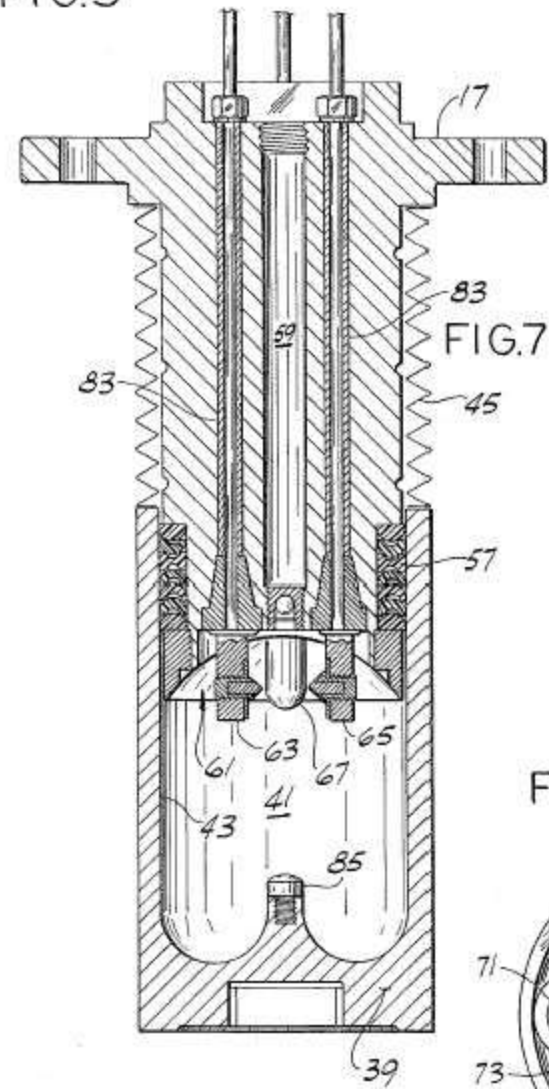
# Papp Engine Patent 4,428,193

Patented in 1984, Papp specifies a Teflon coated cylinder seals and two electrodes (63, 65) for ignition and two electrodes (67, 69) for cathode and anode in a quadrant star within each of two cylinders.

An interesting point is the addition of four grams of thorium-232 (alpha emitter) to the cathode container, while the anode container has two grams of rubidium-37 and three grams of phosphorus-15 in mineral oil for ionizing or exciting the gases.

Papp 3,680,431 explains his desire for electron or alpha emitters to trigger the reactions with “argon, krypton, neon, xenon and their isotopes.”

FIG.5



# Papp Cylinder Built in 2012

Designed by Russ  
Gries to use a mix of  
five noble gases with  
a 40 kV spark

Credit to Bob Rohner for  
Advice and Online Videos





# Heart of RWG Papp Engine



Four terminal spark gap by RWG with a “three-discharge sequence” using two  $\frac{1}{4}$ ” titanium rods and two  $\frac{1}{4}$ ” tungsten thoriated electrodes

# Papp Unique Components



“Buckets” supposed to hold radioactive elements but RF 27.1 MHz is a substitute for their ionizing effect. RWG only has 2% thoriated electrodes.



Specially designed  
3.25” OD piston

# Critical Mixture of Noble Gases

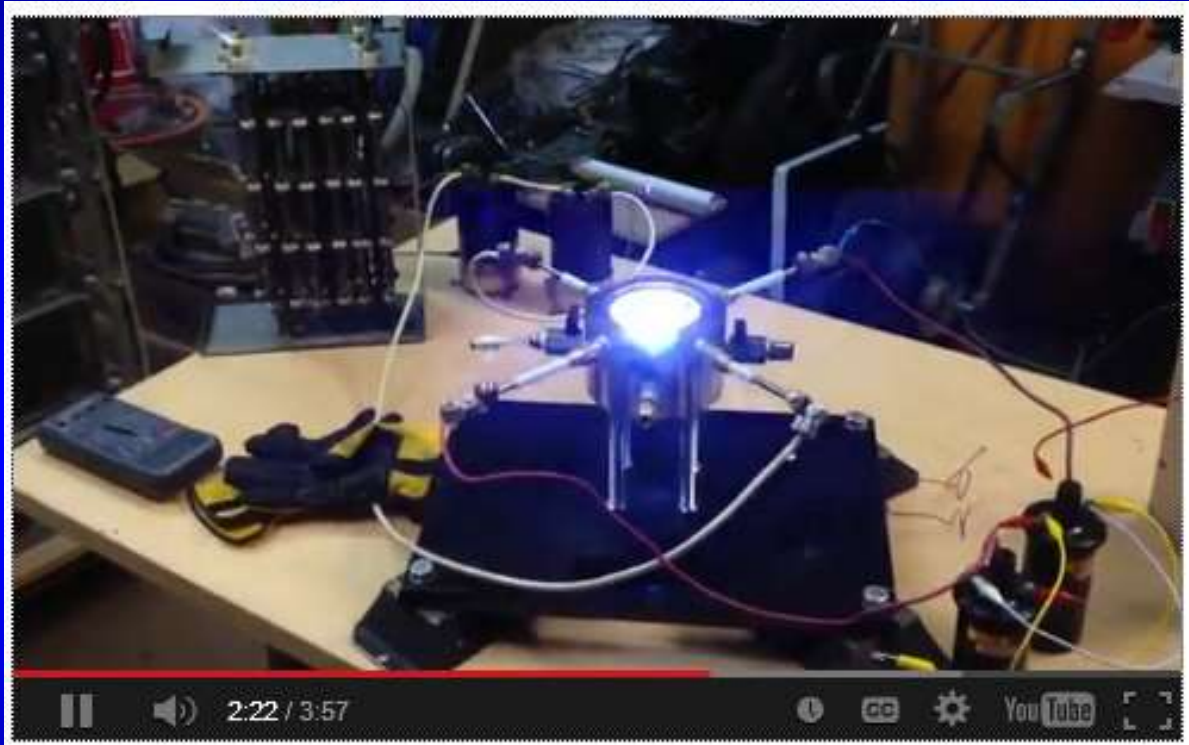
One fuel mixture known in the art is  
a combination by volume of

**35.6% helium,  
26.2% neon,  
16.9% argon,  
12.7% krypton,  
8.5% xenon**

Disclosed online by RWG

<u>Component</u>	<u>Nominal</u>	<u>Actual</u>	<u>Accuracy</u>	<u>Method</u>
Xenon	8.50%	8.50%	+/- 2% rel	Gravimetric
Neon	26.3%	26.3%	+/- 2% rel	Gravimetric
Krypton	12.5%	12.5%	+/- 2% rel	Gravimetric
Argon	16.9%	16.9%	+/- 2% rel	Gravimetric
Helium	Balance	Balance		

# Video of RWG Ignition Circuit



<http://preview.tinyurl.com/RWGREsearch>

Four minute video shows a superior ignition performance

# Rohner-Roberts Video

(Bob Rohner worked for Josef Papp)



Flash can be seen at bottom



Original Papp engine above

[http://www.youtube.com/watch?feature=player\\_embedded&v=zWJNyoFgJM](http://www.youtube.com/watch?feature=player_embedded&v=zWJNyoFgJM)

Or use → <http://preview.tinyurl.com/Rohner-Roberts>

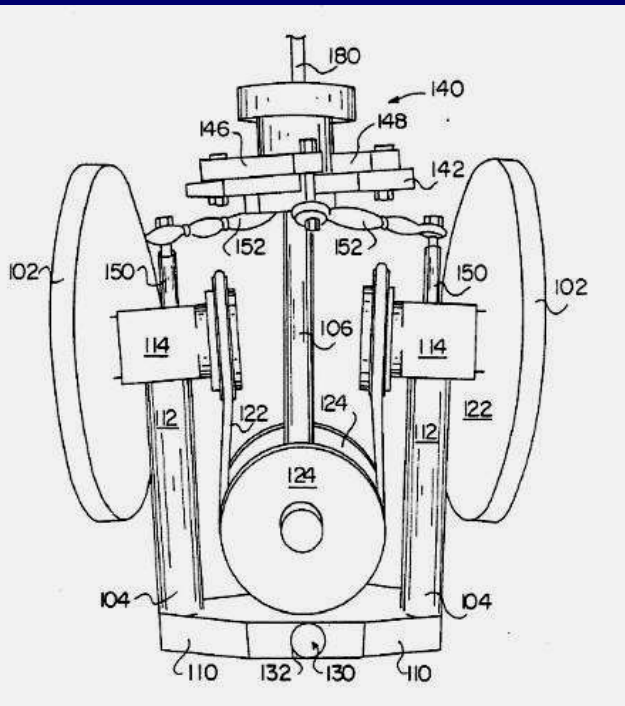
# **PROPULSION PROGRAM**

**THOMAS VALONE, PH.D.**

**PRESIDENT,  
INTEGRITY RESEARCH INSTITUTE**

**History Channel, "Ancient Aliens," 2011**

# IRI Inertial Propulsion Research



Kidd  
patent

A purely mechanical process of using rotating masses, such as “**scissoring gyroscopes**” to cancel or rectify centrifugal force and produce thrust in **ONE DIRECTION**, e.g., Kidd #5,024,112

Engineer **Mike Gamble** discloses in 2012 that Boeing has been using inertial propulsion (*scissoring gyros*) on its satellites “for years” at **COFE5** sponsored by **IRI**



# **Analysis of Electrogravitics and Electrokinetics for Aviation and Space Travel**

**Thomas Valone, PhD, PE**

**STAIF, Albuquerque, NM**

**[www.unm.edu/~isnps/staif/2006](http://www.unm.edu/~isnps/staif/2006)**

**February 16, 2006**

***and***

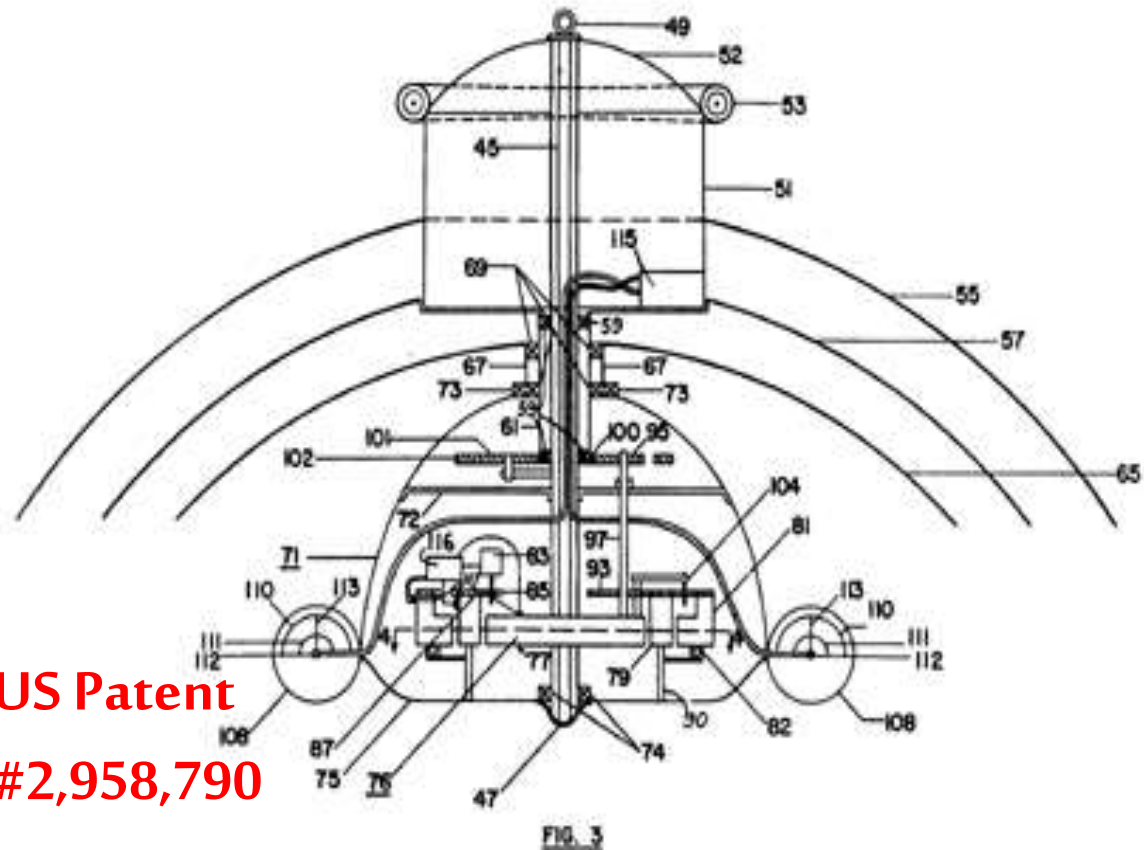
**AIAA, Joint Propulsion Conference,**

**Hartford CT**

**July 23, 2008**



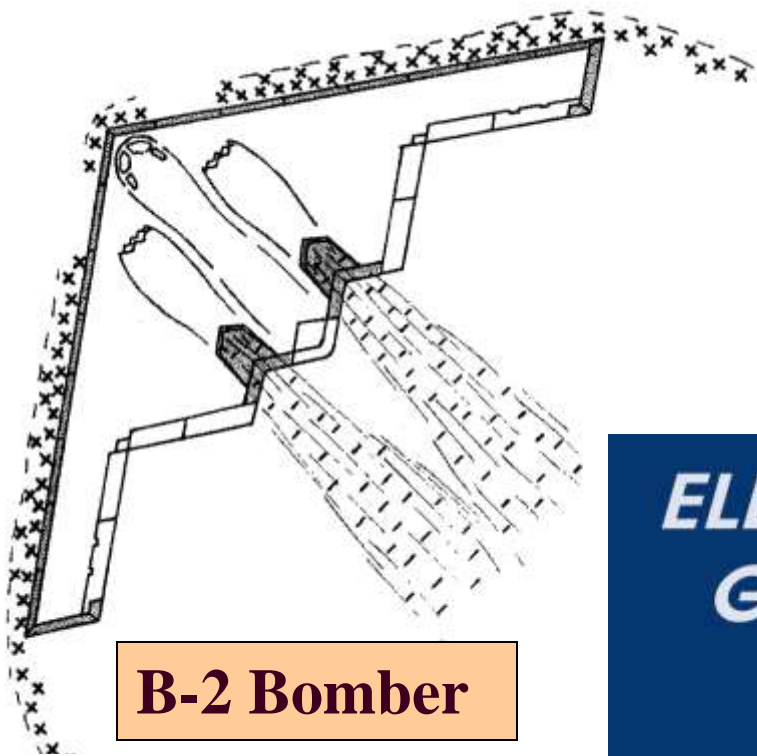
**Brown & Bahnson Lab  
studied electrogravitics  
designs and received over  
a dozen patents**



**US Patent  
#2,958,790**

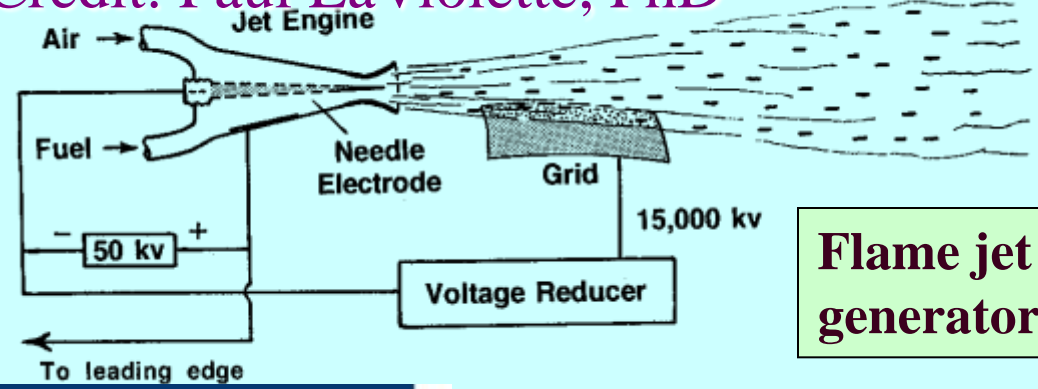


Experimental tri-groove ballistic electrode  
3 feet in diameter



**B-2 Bomber**

Credit: Paul LaViolette, PhD

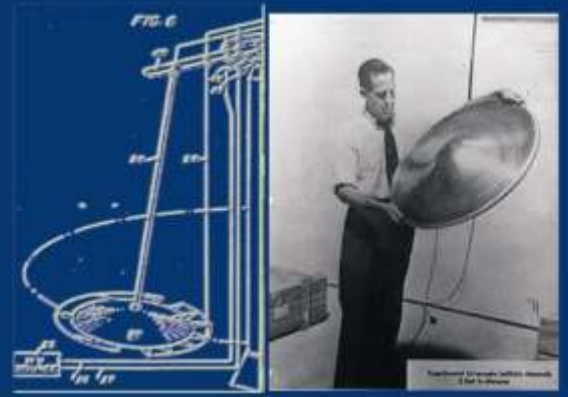


**Flame jet generator**

# ELECTRO GRAVITICS SYSTEMS

Volume I

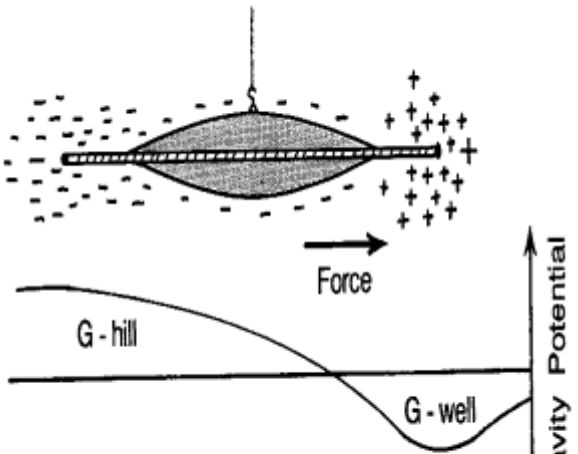
Thomas Valone, PhD



# ELECTRO GRAVITICS II

Validating Reports on a New Propulsion Methodology

Thomas Valone, PhD



**Charge distribution**

## Current Research

# Second Volume

- AFL report
- Honda Lab report
- T.T.Brown biography
- McCandlish Norton AFB hovercraft report
- *Valone interpretation of electrokinetic equation and its force predictions*
- Recent related patents

## *ELECTRO GRAVITICS II*

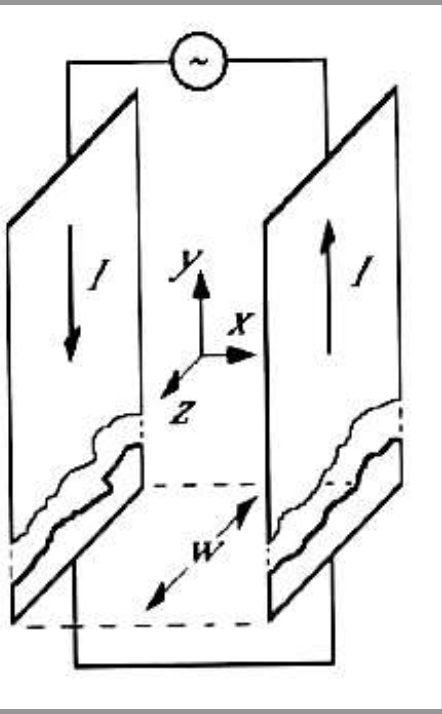
Validating Reports on a New Propulsion Methodology

Thomas Valone, PhD



# Jefimenko's Electrokinetic Equation

Professor, W. Virginia University



$$\mathbf{E}_k = -\mu_0 \frac{\partial I}{\partial t} \frac{x}{w} \mathbf{j}$$

- Time derivative of current
- Fast pulsed current with short rise time will produce the **largest force**

*Causality, Electromagnetic Induction and Gravitation*, Jefimenko, 2000

# Homopolar Generators are “a subject worthy of further research”

## The Homopolar Handbook

A Definitive Guide to Faraday Disk and N-Machine Technologies



Thomas F. Valone, PhD

Based on Sunburst: Return of the Ancients book by Norman Paulsen:



A ship over Giant Rock,



And the deputy sheriff who took the picture.

Giant Rock, Calif. saucer, photo & deputy sheriff who took the photo



“Magnets around the edge of a rotating disk”

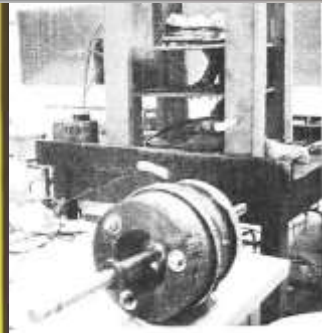
“generator would be self-perpetuating”

THOMAS VA  
DAS UNIPOLAR



German edition

EIN GRUNDLAGENWERK DER FREIEN ENERGIE:  
FARADAY-SCHEIBE UND N-TECHNOLOGIEN



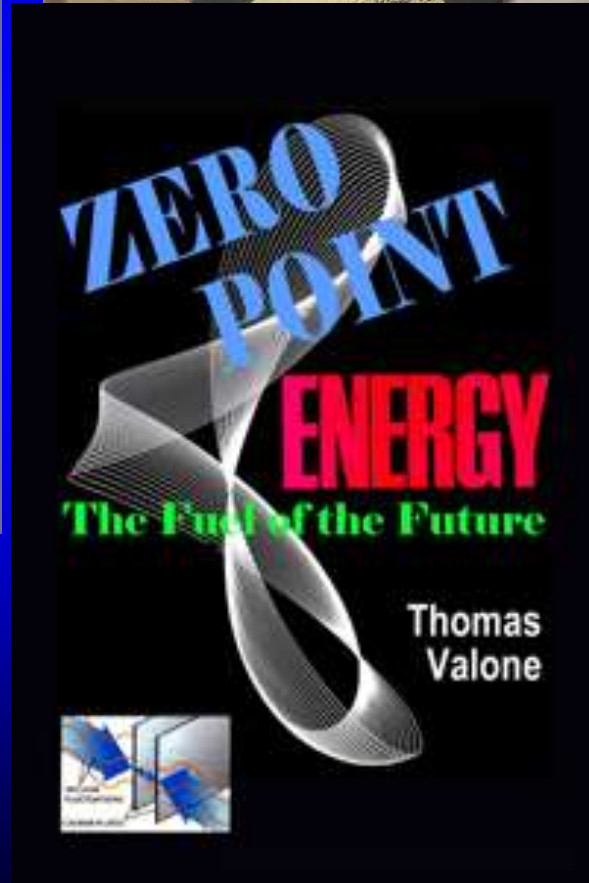
# Books that Contain Most of this Slideshow

“Future energy can  
do our work  
without working  
our undoing”

Join our IRI  
conversation at  
[Futureenergy.org](http://Futureenergy.org)  
to re-empower the  
world

## The Homopolar Handbook

*A Definitive Guide to Faraday Disk  
and N-Machine Technologies*



## ELECTRO GRAVITICS II

Validating Reports on a New Propulsion Methodology

Thomas Valone, PhD

## Bioelectromagnetic Healing A Rationale for Its Use

by Thomas Valone, Ph.D.

