

**UNITED STATES COURT OF APPEALS
FOR THE FEDERAL CIRCUIT**

18-1122

MITCHELL R. SWARTZ, Plaintiff (now Appellant)
v. JOSEPH MATAL, Defendant

Appeal from the US District Court
for the Eastern District of Virginia
(Alexandria Division No. 1:17-cv-482)

APPENDIX

Appellant Mitchell R. Swartz, ScD, MD, EE,
pro se
Weston, MA

December 28, 2017

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**UNITED STATES DISTRICT COURT
DISTRICT OF MASSACHUSETTS**

Civil Action No. 2016-CV-12144-LTS

Mitchell Swartz, Plaintiff

v.

Robert W. Bahr, as an Individual and as an Officer,
Jack Keith, as an Individual and as an Officer,
Ricardo J. Palabrica, as an Individual and as an Officer,
Sharon Davis, as an Individual and as an Officer,
Michelle Lee, as an Individual and as an Officer,
Johannes P. Mondt, as an Individual and as an Officer,
Marshall P. O'Connor, as an Individual and as an Officer,
Kathy Matecki, as an Individual and as an Officer, Defendants

February 7, 2017

DECLARATION OF ROBERT SMITH

I, Robert E. Smith Jr., am a citizen of the United States and a Lt Colonel USAF (retired), and aver as follows:

1. I graduated from Purdue University (1959), and the Oak Ridge School of Nuclear Reactor Technology (1961), built the PM-1 Nuclear Power Plant, Sundance, Wyoming, and flew 234 missions in Vietnam in the F-4C/D Phantom jet fighter, before becoming flight test director for the television-guided Maverick missile, and project pilot and engineer for the AN/UPD-4 radar.

2. I have developed many weapons for the military and flew many combat missions. I initiated the AMRAAM missile and the AIM/9M Sidewinder missile programs, and the Air Defense Initiative in 1986, and served as the Program Manager for the SP-100 Space Nuclear Power System.

3. I personally observed two demonstrations of condensed matter nuclear science (CMNS) technology at MIT at the International Conference (ICCF-10) in 2003. One was operated and run by Dr. Mitchell Swartz from JET Energy/MIT; and in a separate demonstration in the same room, the second was conducted by Prof. John Dash from Portland State University, who was supported by several graduate students.

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4. The discussion of the demonstrations presented by Dr. Swartz was particularly noteworthy from an engineering sciences point of view. He explained how operating point manifolds, the inclusion of well-known controls, electromagnetic forces, and material properties of the supporting lattices, created the conditions for excess heat to be produced by the electrolytic CMNS devices. He further presented clear evidence that the output of the devices produced more energy than they consumed in the input operation of the devices. It made me wonder why the US Department of Energy was not investing substantially in this technology.

5. These condensed matter nuclear reactions have utility because they are radiation-less and do not have radioactive waste products. They produce clean products like helium, an inert gas. No smog, no increased carbon. The reactions are scalable, such that reactors of small up to very large can be designed. Therefore the practical applications of this technology are unlimited.

6. It is my professional as well as personal opinion that this field is real in spite of opinion of the Patent Office (USPTO). The real purpose here is for the USPTO to review carefully the conditions that are needed for proposed reactors and the written reviews and comments of the using organizations, such as DTRA, DARPA, DIA, USDOE, DOD, and NASA, which have the requirements and funding to further develop the technology. USPTO reviewers have an excellent source of relevant information for required understanding of this new science.

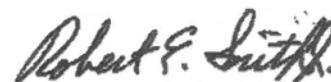
7. Patent protection for the intellectual property rights of developers is essential to investment in this technology by competent people and should not be questioned by uninformed US Patent Office reviewers.

8. Make no mistake that condensed matter nuclear science has numerous applications as has been determined by a detailed review of the US Air Force Energy Horizons requirements document. The number one application is nuclear propulsion of Aircraft reducing the requirements for fossil fuels.

I declare that all statements herein of my own knowledge are true and that all statements made on information and belief are believed to be true.

Date: February 7, 2017

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Robert E. Smith Jr.
Oakton, Virginia

**UNITED STATES DISTRICT COURT
DISTRICT OF MASSACHUSETTS**

Civil Action No. 2016-CV-12144-LTS

Mitchell Swartz, Plaintiff

v.

Robert W. Bahr, as an Individual and as an Officer,
Jack Keith, as an Individual and as an Officer,
Ricardo J. Palabrica, as an Individual and as an Officer,
Sharon Davis, as an Individual and as an Officer,
Michelle Lee, as an Individual and as an Officer,
Johannes P. Mondt, as an Individual and as an Officer,
Marshall P. O'Connor, as an Individual and as an Officer,
Kathy Matecki, as an Individual and as an Officer, Defendants

February 6, 2017

DECLARATION OF DR. FRANK GORDON

I, Frank E. Gordon, declare that I am a citizen of the United States of America, and aver as follows:

1. I received a Doctor of Engineering degree in 1971 from the University of Kansas. After that, I was employed at the U.S. Navy Research and Development Laboratory currently known as SPAWAR Systems Center in San Diego from 1971 until my retirement in July, 2009. I was a member of the Navy's Senior Executive Service from March, 1987 until I retired.. During that time, I served in a variety of senior management positions and at the time of my retirement, I was the head of the Research and Applied Sciences department, composed of more than 450 scientists and engineers and an annual budget of more than \$300 million.

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2. Access to sources of energy by the U.S. military at the location where it is needed is both a costly and tactical necessity. It has been widely reported that the U.S. Marines carry more weight in batteries for their equipment than ammunition.

Additionally, not only is transporting fuel to a remote base in theater expensive, it is also costly in terms of loss of life since the transportation vehicles become high priority targets for terrorists. A new source of energy that could replace even part of the current energy requirements would be very significant.

3. Three published U.S. Government reports both document and add credibility to the existence of this technology, called LENR (or LANR, or "cold fusion"). A report by the Defense Intelligence Agency (DIA) dated 13 November 2009 titled "*Technology Forecast: Worldwide Research on Low-Energy Nuclear Reactions Increasing and Gaining Acceptance*" documents experimental results from scientists throughout the world and states that "**This body of research has produced evidence that nuclear reactions may be occurring under conditions not previously believed possible.**" The report includes multiple uses for this technology and further states that "...LENR power sources could produce the greatest transformation of the battlefield for U.S. forces since the transition from horsepower to gasoline power."

4. In addition to the Defense Threat Reduction Agency (DTRA) Report discussed by Dr. Swartz in the above entitled complaint, a subsequent report from DTRA was issued in 2016 titled "*Investigations of Nano-Nuclear Reactions in Condensed Matter.*" The internal DTRA scientific and technical review process was completed and cleared for public release on June 7, 2016. Both the DIA and DTRA internal review/signoff process could be considered to be comparable to peer-review for a technical journal article.

5. In addition to the DIA and DTRA Reports, the U.S. Navy has issued reports documenting this technology, including **TECHNICAL REPORT 1862**, February 2002 [*Thermal and Nuclear Aspects of the Pd/D₂O System*, two volumes].

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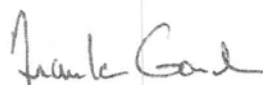
In the Foreword to that report, I wrote:

"As I write this Foreword, California is experiencing rolling blackouts due to power shortages. Conventional engineering, planned ahead, could have prevented these blackouts, but it has been politically expedient to ignore the inevitable. We do not know if Cold Fusion will be the answer to future energy needs, but we do know the existence of Cold Fusion phenomenon through repeated observations by scientists throughout the world. It is time that this phenomenon be investigated so that we can reap whatever benefits accrue from additional scientific understanding. It is time for government funding organizations to invest in this research.

6. Although additional research is required in order to develop and reduce it to commercial practice, I believe that LENR has the potential to be an extremely useful technology for a wide variety of applications.

I declare under penalty of perjury that all statements herein of my own knowledge are true and that all statements made on information and belief are believed to be true.

Date: February 6, 2017



Dr. Frank Gordon

San Diego, CA

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**IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF VIRGINIA Alexandria Division**

MITCHELL R. SWARTZ, Plaintiff

v.

JOSEPH MATAL, Performing the Functions and
Duties of the Under Secretary of
Commerce for Intellectual Property and
Director of the United States Patent and
Trademark Office.
Defendant.)

No. 1:17-cv-482
(LMB/TCB)

August 29, 2017

DECLARATION OF LAWRENCE P. G. FORSLEY

I, Lawrence P.G. Forsley, declare that I am a citizen of the United States of America and aver as follows:

1. I attended Nebraska Wesleyan University (Lincoln, Nebraska) in 1971 in Environmental Studies under a National Science Foundation Program; the University of Rochester, College of Engineering and Applied Science (Rochester, NY) until 1974 and the State University of New York, Empire State College in Computer Science (Rochester, NY) until 1980.
2. I was a research engineer and group leader at the University of Rochester, Laboratory for Laser Energetics between 1975 and 1988 as part of the DoE funded Omega Laser, Inertial Confinement Fusion research program, and lecturer at the University of Rochester in the College of Arts and Sciences and in the College of Engineering from 1984 to 1988.
3. I acted as a consultant to the DoE Lawrence Livermore National Mirror Fusion Test Facility (Livermore, California) from 1978 to 1987; a visiting scientist at the Max Planck Institut fur Plasma Physics (Garching, Germany) on the ASDEX

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Tokamak in 1983; a consultant to the Defense Nuclear Agency program at Physics International Corporation (San Leandro, CA) in 1980 through 1981 on a modular bremsstrahlung source to simulate an exo-atmospheric nuclear gamma ray burst; and a US DARPA reviewer on the distantly related field of sono-fusion.

4. I am familiar with the subject discussed in the above-entitled action because of my work as a principal investigator under multiple US Navy LENR Cooperative Research and Development Agreements, with the US Navy SPAWAR-Pacific, (San Diego, CA); Naval Research Laboratory, (Washington, DC); US Naval Air Weapons Station China Lake (Ridgemont, CA) and the US Naval Surface Warfare Center, Dahlgren Division (Dahlgren, VA)

5. I have been an experimental physicist with the NASA Glenn Research Center (Cleveland, OH) for the past four years pursuing fundamental research and its application in this field. I am co-author of over 25 peer-reviewed papers and several US Government technical reports regarding the field. I am also a research associate with the University of Texas, Austin, Nuclear Engineering Teaching Laboratory, where I have been conducting scaling operations of these devices.

6. In my opinion, the field of cold fusion whether called low energy nuclear reactions (LENR) or lattice assisted nuclear reactions (LANR) is real, scientifically significant, militarily important and possibly commercially useful. I have spent 27 years primarily researching and harnessing the energetic particles that give rise to the excess heat attributed to the phenomena and am engaged in scaling development for deep space power using the phenomena.

7. I observed videos of the technology described by Dr. Swartz during his open demonstration of his high-impedance aqueous Pd/D₂O/Pt Phusor-type CF/LENR component in 2003 at MIT in Cambridge MA during the 10th International Conference of this field [ICCF-10].

AIII

8. While operating under a US Navy NCRADA at the US Navy SPAWAR-Pacific, I was instrumental in setting up a meeting at SPAWAR to better acquaint the Defense Intelligence Agency with the field. Dr. Swartz was one of the participants of over 20 whom we invited to assess the state of the Cold Fusion/Low Energy Nuclear Reaction/Lattice Assisted Nuclear Reaction field. Subsequent to this meeting, the DIA published a report in 2009 [#DIA-08-0911-003 13 November 2009].

9. In January, 1939 the first paper on nuclear fission was published in the Journal *Naturwissenschaften*. Less than 7 years later the first nuclear weapon was tested and shortly thereafter ended the Second World War. Exactly seventy years later I co-authored a paper [1] in the same Journal demonstrating lattice assisted nuclear fusion. The US DoE paid for, and their staff co-authored, three LENR papers [2],[3],[4] with me. Yet, unlike nuclear fission that the USPTO has participated in since its inception, the USPTO has deliberately abridged LENR research and development for nearly 30 years at a cost this Nation can ill afford.

[1.] P.A. Mosier-Boss, S. Szpak, F.E. Gordon, and L.P.G. Forsley, "Triple Tracks in CR-39 as the Result of Pd/D Co-deposition: Evidence of Energetic Neutrons," *Naturwissenschaften*. **96** (2009) 135-142

[2] P.A. Mosier-Boss, J.Y. Dea, L.P.G. Forsley, M.S. Morey, J.R. Tinsley, J.P. Hurley, and F.E. Gordon, "Comparison of Pd/D Co-Deposition and DT Neutron Generated Triple Tracks Observed in CR-39 Detectors," *Eur. Phys. J. Appl. Phys.* **51** (2010) 20901

[3] P.A. Mosier-Boss, L.P.G. Forsley, P. Carbonnelle, M.S. Morey, J.R. Tinsley, J. P. Hurley, F.E. Gordon, "Comparison of SEM and Optical Analysis of DT Neutron Tracks in CR-39 Detectors", *Hard X-Ray, Gamma-Ray, and Neutron Detector Physics XIII*, edited by Franks, James, and Burger, **Proc. of SPIE Vol. 8142**, (2011) pp K1-K8.

[4] P.A. Mosier-Boss, L.P.G. Forsley, P. Carbonnelle, M.S. Morey, J.R. Tinsley, J. P. Hurley, F.E. Gordon, "Comparison of SEM and Optical Analysis of DT Neutron Tracks in CR-39 Detectors", *Radiation Measurement*, **47**, (2012) pp 57-66

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10. I am aware that the U.S. PTO has not been truthful with applicants who applied for US patents in this field. I submitted a patent to the USPTO and to the PCT for a fusion-fast-fission nuclear reactor that was cited by the USPTO as unworkable with no utility yet by the PCT as having utility but not novel and obvious.

11. I have read the above-entitled Complaint and am surprised that In re Swartz, used by the USPTO to stifle cold fusion, is actually about a vibrating sensor whose frequency is used to measure loading, and not about cold fusion, but relevant to it as to other things such as metallurgy.

12. In my opinion there is utility to inventions in this field. Heat producing and energetic particle production caused by these phenomena are militarily significant. Four of my US NCRADAs were funded specifically for military applications of either power production or energetics. NASA has funded several years of my research on NASA's and the Nation's behalf. Dr. Swartz's NANOR and PHUSOR type devices exhibit positive thermal gain and by scaling up would be militarily and commercially useful.

13. I have a patent issued in this field USPTO 8,419,919 that cites multiple patent applications by Dr. Swartz.

Lawrence P.G. Forsley

I declare that all statements herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements are made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code.

Lawrence P.G. Forsley

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**UNITED STATES DISTRICT COURT
for the Eastern District of Virginia**

Mitchell R. Swartz, Plaintiff

v.

Joseph Matal, Acting Under Secretary of Commerce for Intellectual Property and

Director of the United States Patent and Trademark Office, Defendant

Filed: August 30, 2017

DECLARATION OF DR. DAVID J. NAGEL

1. David J. Nagel, declare that I am a citizen of the United States of America and of the State of Virginia, and aver as follows:

1. I earned a B.S. degree in Engineering Science (Magna Cum Laude, University of Notre Dame, 1960), an M.S. degree in Physics (University of Maryland at College Park, 1969) and a Ph.D. in Materials Engineering (University of Maryland at College Park, 1977)

2. I served as an Officer in the U.S. Navy, with four years of active duty, 26 years of reserve service, and three tours as a Commanding Officer, and retired in 1990 with the rank of Captain in the U. S. Naval Reserve.

3. I also served on the civilian staff of the Naval Research Laboratory as an experimental physicist measuring x-ray emissions from nuclear weapons and plasmas, and as the leader of a group of 150 scientists and engineers. In the former role, I am the co-inventor of plasma x-ray lithography. In the latter role, I was a member of the Senior Executive Service (ES-4).

4. I have been a Research Professor at The George Washington University for the past 18 years. I lead a research group in our LENR Energy and Spectroscopy Laboratory.

5. I am very familiar with the subject of Low Energy Nuclear Reactions (LENR), having worked in the field since 1989 and chaired the international convention of the subject as its 14th meeting (ICCF-14) in Washington DC in 2008. I also have a company in this field (NUCAT Energy LLC), and have provided a commercial course on the subject.

6. I have observed the technology described by Dr Mitchell Swartz during his open demonstration of the high-impedance aqueous Pd/D2O/Pt Phusor in MIT in 2003 at the 10th international meeting (ICCF-10). Dr. Swartz is one of the leaders in the field of LENR, having published many papers on the topic, invented two major approaches to generating energy by LENR, and developed several techniques for confidently measuring energy from LENR.

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7. I went with Dr. Swartz, when he presented about this new field to the Defense Threat Reduction Agency in 2006. That meeting led to the DTRA report, which is now in evidence in this case.

8. In my opinion, the field of LENR is real due to many and strong experimental results from scientists in at least ten countries over the past 28 years. Operability of LENR has been demonstrated by the production of tritium, helium and other elements, none of which can be generated by chemical reactions. Thermal energy far beyond what is possible from chemistry has been measured many times by competent, well-equipped and careful scientists. That also points to the operation of nuclear reactions.

9. In my opinion, there is great utility to inventions in this field. LENR operate without dangerous prompt radiation, do not generate radioactive waste and do not produce greenhouse gases. Many civilian applications of heat from LENR are expected. The U.S. military would benefit greatly from the availability of small LENR generators for both installations and forward deployments. Generating heat and electricity in the field without a fossil fuel logistics tail would be a game changer for the U. S. Marine Corps and Army. Over 20 companies in nine countries are now seeking to commercialize LENR.

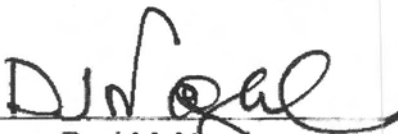
10. On 1 August 2017, my company published a 44 page NUCAT Energy LLC Report 2017-01, which cites laboratory evidence for the operability and utility of LENR. The title of the report is "Evidence of Operability and Utility from Low Energy Nuclear Reaction Experiments". The report is available by writing me at nucat.energy@gmail.com.

11. The industrial promise of LENR is so great, I co-founded LENRIA Corporation in 2015. It is a not-for-profit organization, which is serving as the Industrial Association for LENR companies globally. The Corporation is now organizing ICCF-21 to be held in 2018 in the U.S..

12. LENR (initially called "cold fusion"), which is operable and has great utility, was invented in the U.S. It is expected to be the basis for a new global industry. The U.S., given the proper basis of intellectual property, can be the global leader in the new industry.

I declare that all statements herein of my own knowledge are true, and that all statements made on information and belief are believed to be true; and further that these statements are made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code.

Respectfully submitted:


David J. Nagel

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Date

**UNITED STATES DISTRICT COURT
DISTRICT OF MASSACHUSETTS**

Civil Action No. 2016-CV-12144-LTS

Mitchell Swartz, Plaintiff

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Jack Keith, as an Individual and as an Officer,
Ricardo J. Palabrica, as an Individual and as an Officer,
Sharon Davis, as an Individual and as an Officer,
Michelle Lee, as an Individual and as an Officer,
Johannes P. Mondt, as an Individual and as an Officer,
Marshall P. O'Connor, as an Individual and as an Officer,
Kathy Matecki, as an Individual and as an Officer, Defendants

February 5, 2017

DECLARATION OF DR. BRIAN AHERN

I, Brian Ahern, declare that I am a citizen of the United States of America, and aver as follows:

1. I, Brian Ahern, declare that I am a citizen of the United States of America.
2. I am an expert in material science, quantum chemistry and nanotechnology. I received my PhD in Materials Science from the Massachusetts Institute of Technology (Cambridge, MA) in 1984. I am the inventor of over 20 patents.
3. I served at USAF Rome Laboratory evaluating new material systems with potential importance for military applications, as a senior scientist in the Electromagnetic Materials Division. From 1985 until 1995 I was the U.S. representative to NATO Panel III on Electromagnetic Materials where my duties were to establish collaborations among scientists in the seven member countries.

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4. In 1987 I was charged with the duty to survey the field of the new superconductors which were at first a great shock to experts in the field. I was selected for this work in part due to my M.S. thesis in the field of low temperature physics. It is merely coincidental that my thesis topic was based on loading palladium alloys with hydrogen and deuterium and measuring the superconducting transition temperatures. My two year survey concluded that the theoretical underpinnings of superconduction were sadly lacking. The BCS theory was not only incapable of predicting the occurrence of the YBCO materials, it was incapable of making a priori predictions for any arrangement of matter. This observation regarding the lack of understanding in low temperature physics is not widely known. This lack of first principles level of understanding has been of little concern to experimentalists and has not discouraged extensive research support.

5. I sympathize with Dr. Mitchell Swartz. I can understand his frustration with USPTO Examiner Ricardo Palabrica, who was an examiner for my filing of a patent application on an invention involving high energy density discharges and their intensification by high voltage pulses in liquids. For this invention, I drew on the vast experience of decades of exploding wire experiments and other high energy density studies. I based the invention on the same principle that is routinely observed in femtosecond laser-matter interactions. This invention was useful because energy could be extracted. My patent application was taken and reviewed by Examiner Palabrica.

6. Mr. Palabrica denied my application and dismissed all of my claims on the grounds that he deemed that it was "cold fusion". My technology, my scientific explanations, and my arguments were summarily essentially ignored and dismissed by him, as he appeared to have pre-judged my technology and invention as part of the cold fusion phenomenon. It was not. I did not even use those words. I did not even use the word "fusion" in my filing. I did use the metal palladium and heavy water, and the similarities ended there.

7. In discussions, Mr. Palabrica implied that if I removed all references to palladium and heavy water that a successive patent application would be allowed. Mr. Palabrica said that a new filing without the words 'fusion', 'palladium' and 'heavy water' would have a much better chance of moving forward. This was an odd request by Mr. Palabrica because to comply with his demand would have made a second filing useless by removing the very materials used. Because Mr. Palabrica apparently has the power to decide what an inventor's technology would be, I gave up in frustration even though I believed, and continue to believe, that the technology was sound.

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8. I have never experienced such a response from any Examiner before, like I have from Ricardo Palabrica. His response was inappropriate for a Patent Examiner. The comments involve attempting to change an invention by overstepping his directives and acting as a 'protector' of scientific knowledge.

9. The Applicant, Dr. Mitchell Swartz appears to be laboring under the same misuse of authority.

10. I have known Mitchell Swartz since 1991. I would like to express my strong support for the work being conducted by Dr. Mitchell Swartz in the field of isotopic fuel loading of metal lattices and lattice assisted nuclear reactions. I believe his investigations are some of the most thorough and precise yet conducted in isotopic loading and lattice assisted nuclear reactions, and that the thermal effects he is observing are real and will ultimately be useful on a large scale.

11. It is my professional as well as personal opinion that this field is real in spite of opinion of the Patent Office.

I declare that all statements herein of my own knowledge are true and that all statements made on information and belief are believed to be true.

Date: February 5, 2017

Brian S. Ahern

Brian Ahern, PhD

Acton, MA

02/07/17

Jeff Chavannes

A118



JEFF CHAVANNES
Notary Public
Commonwealth of Massachusetts
My Commission Expires March 23, 2023



UNITED STATES DISTRICT COURT
DISTRICT OF MASSACHUSETTS

Civil Action No. 2016-CV-12144-LTS

Mitchell Swartz, Plaintiff

v.

Robert W. Bahr, as an Individual and as an Officer,
Jack Keith, as an Individual and as an Officer,
Ricardo J. Palabrica, as an Individual and as an Officer,
Sharon Davis, as an Individual and as an Officer,
Michelle Lee, as an Individual and as an Officer,
Johannes P. Mondt, as an Individual and as an Officer,
Marshall P. O'Connor, as an Individual and as an Officer,
Kathy Matecki, as an Individual and as an Officer, Defendants

February 5, 2017

DECLARATION OF GAYLE VERNER

I, Gayle Verner, declare that I am a citizen of the United States of America.

1. My field of experience includes that of a journalist and educator. For over 18 years, I have been a nationally published journalist who has written extensively in many fields including science, medicine, and energy conversion. I have earned the degree of Master in Education from the Harvard Graduate School of Education. I have published (primarily for *People Magazine*, *USA Today*, and *American Health Magazine*) many articles for national and regional journals, newspapers, and newsletters. I make the following statements independently and not as a representative of any publication.

2. As a former professional journalist, I am highly experienced in poring through, sorting documents, and recognizing issues, the least of which is, legibility of documents; this is a nonsense, red-herring delay tactic that further obfuscates the Plaintiff's repeated requests for such documents as the official, up to date Docket—which so far has been denied.

A119

3. The Defendants have a long history of mischaracterizing facts. Their flurry of false allegations are inconsistent and created to make it all difficult to keep track of. As one example, in patent application '381, the Defendant Sharon Davis and her supervisor first claimed that timely submitted Evidence (scientific peer reviewed papers and other documents) was never received. This was simply untrue. I know this because I personally reviewed the materials, stapled them together, compiled them, and inserted them into the mailing envelope. I personally hand-delivered them to the post office clerk. In addition, to prove the Defendants mischaracterized facts, the stamp of the USPTO Postal Office on the card which was affixed to the top of the mailed group of the submitted documents indicated that they were all timely received. To say that they were not received is so far-fetched, that it defies imagination.

4. Then, when the Defendants were shown they were wrong with respect to the "receipt", the Defendants claimed the documents were "unreadable". When shown, citing line and verse, that they were wrong; in their assertions, and that the documents were both received and readable, the persuasive objective evidentiary exhibits were ignored. Then later she said that I had no probative value when I was the one directly involved. Despite the Defendants' repeated false statements, Dr. Swartz's documents were sent to the Office, and they were all readable, legible, and in proper form. I mailed them each time, and over and over the Defendants have falsely purported that they were not received.

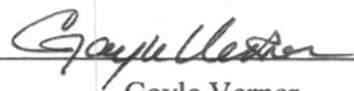
5. One conceivable reason for the Defendants to fabricate and switch the exact documents involved is to avoid any real examination and response to the submitted Evidence. A second possible reason is that to do so would also add credence to Dr. Swartz's position. It is, therefore, probable that this mischievous behavior by some at the USPTO was created for the sole purpose of harassing him, and thereby, discouraging the continuation of his patent application process.

6. The behavior of some of these defendants, such as Sharon Davis at the USPTO, cries out for correction by the federal court, especially since the USPTO's own judicial/administrative system has failed to do its job with respect to this matter.

I declare that all statements herein of my own knowledge are true and that all statements made on information and belief are believed to be true.

February 5, 2017

A120



Gayle Verner
USPost Office Address: P.O. Box 81135
Wellesley Hills, MA 02181

RESPONSE UNDER 37 CFR 1.116
EXPEDITED PROCEDURE - EXAMINING GROUP NUMBER 2204
IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

IN RE THE APPLICATION OF:

Inventor : Mitchell R. Swartz

Serial No.: 07/ 339,976

Filed: 04/18/1989

SYSTEMS TO INCREASE THE EFFICIENCY,
CONTROL, SAFETY AND ENERGY
UTILIZATION OF ELECTROCHEMICALLY

PAPER:

Group Art Unit: 2204

Examiner Anthony Chi

April 17, 1996

Commissioner of Patents and Trademarks
Washington, D.C. 20231

DECLARATION of ROBERT W. BASS, M.A. Oxon, Ph.D.

I, the undersigned Robert W. Bass, declare that I am a citizen of the United States of America.

1. I am an Inventor of U.S. Patents 4,235,668 (issued Nov. 25,1980), 4,236,964 (issued December 2, 1980) and 4,448,743 (issued May 15, 1984). I have also served as a Registered Patent Agent [29,130] with 18 years of experience in the practice of patent law before the PTO. This includes one year (1993) as a full-time Associate with the Intellectual Property Law firm of Poms, Smith, Lande & Rose in Century City, California, and a seventeen year practice as an avocation or part-time profession.

2. I am aware of this field both because I have continued to read the literature, because of my "hot" fusion inventions, because of my more recent QRT Cold Fusion invention [subject of a pending application filed in 1991], and because I have actually both personally drafted and submitted several cold fusion applications for, and also read numerous cold fusion applications by, other inventors who have submitted to the Patent Office. My "hot" fusion inventions include the Topolotron and the Plasmasphere which were issued patents.

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3. I, myself, as well as several collaborators in my fusion plasma confinement research and in my nuclear fusion reaction-rate equilibrium-stability optimization research have published many papers. These were published in both the *Proceedings of the Utah Academy of Arts & Sciences* and in the leading archival "hot" fusion journals, such as the APS *Physics of Fluids*, the IEEE *Transactions on Plasmas Science*, and the American Nuclear Association *Fusion Technology*. My inventions have been written up at length in the leading treatises on this subject, including Tom Dolan's 3-volume book "Fusion Research" and Reece Roth's book "Fusion Energy".

4. Academically, I have served on the Theoretical Division of Project Matterhorn at the Princeton Plasma Physics Lab ("hot" fusion) in 1957-59, and more recently have been a Professor of Physics & Astronomy at BYU (1971-81) and a Prof. of Aerospace Engineering Sciences at the U of Colorado, and of EE at UCLA (visiting Faculty member, 1986-87), and of Systems Engineering at the West Coast University.

5. Ever since the first patent applications on so-called "cold" fusion (or lattice-catalyzed low-energy nuclear fusion) I have noticed what has the appearance of an appalling pattern of deliberate conduct on the part of the Examiners in Art Group 220 and their supervisor, Mr. Garret. Before I had even met Dr. Swartz, and before I had even filed a "cold" fusion patent, I had complained verbally to Mr. Garret about the numerous inconsistencies in his Examiners pertaining to their treatment of "cold" fusion patent applications. Mr. Garret replied to me with what in retrospect appears to have been some brazen misstatements. Here are just two examples.

6. First, Mr. Garrett said that perhaps the PTO library did not subscribe to various technical journals cited by the "cold" fusion applicants, although a subsequent phone call to the PTO verified that every single one of the journals in question was in fact either subscribed to by, or maintained by, or located in, the PTO library.

7. Second, Mr. Garret vigorously - and with seeming plausibility - absolutely denied that there was any special "policy" pertaining to the handling of "cold" fusion patents. Mr. Garret claimed that each and every Examiner under him was acting on his own independent judgment without regard to any categorization. This erroneous claim appears to be contradicted by the Annual Report which was issued by Commissioner Lehman after his first year in office. Said Annual Report referred explicitly to "cold" fusion as an "emerging technology" and stated

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that there were some 400 applications in that category still pending and that none had yet been acted upon.

8. It now appears that this inaction is in contrast to the European Economic Community which will issue the Fleischmann-Pons patents, based upon the recent public statements by the European patent authorities. Japan is reported to have issued more than 100 Cold Fusion patents.

9. I have read the Notice from the Examiner Chi to Dr. Swartz dated March 29, 1996. In my opinion, the Examiner is in error in paragraph 1, claims must not be "patentably distinct", but "materially distinct" as Dr. Swartz has attempted to explain within the papers associated with above-entitled application.

10. With respect to these series of applications, there does not seem to be a genuine attempt to follow the directives of the Appeal Board to provide Dr. Swartz with a substantive response to the Briefs and Declarations already submitted.

11. There is a pattern of behavior here. I have read many complaints on the Internet by disgruntled "cold" fusion patent applicants, most of whom complain of the same things. These individuals appear to have independently arrived at the same and probably only possible conclusion -- that there is an organized effort under Art Group 220 to delay, obstruct, obfuscate, harass, hinder, and otherwise retard the issuance of patents in this category.

12. These efforts to delay and obstruct include examples of intellectual dishonesty in patent papers which I have examined in this field, and which attempted only to go through this Art Group.

13. In contrast to what I believe may be an abnormal pattern, I have seen cold fusion patents in the same field issue, but these were examined by OTHER Art Groups. Unlike this Art Group, those applications which were prosecuted before other art groups were issued.

14. Further consistent with this abnormal pattern, the PTO has issued, and continues to regularly issue, patents which purport to disclose how to nullify gravity or to attain an "anti-gravity" device. In fact, at last count, there were scores of such patents issued, all apparently with no difficulty. These devices do not work, while "cold fusion" does, as one can regularly read about its success in many research articles.

15. There is a lot wrong with this. Here are two problems. First, it is now well-known to, and generally believed by, the scores of inventors in the Cold Fusion field that the ONLY way to

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get fair treatment from the PTO is to word the patent application in such a way that the application does NOT get sent to Art Group 220.

16. Second, in this field, some applicants of inventions submitted to the Office avoid mentioning Drs. Fleischmann & Pons and even the words "cold" fusion. In my opinion, this is wrong, and is both inconsistent with, and a dereliction of duty from, the PTO's Canons of Professional Responsibility. The Office should never encourage, even implicitly, any lapse of the applicants' obligation of complete "candor". Any such application in this field should provide a full and complete citation of Drs. Fleischmann & Pons' work as prior related art.

17. In my opinion, the Appeals Board should ask Commissioner Lehman, as well as the Inspector Generals of both the General Accounting Office and of the PTO to initiate a serious, rigorous investigation into the conduct of Art Group 220. One should not forget that Admiral Short was Court Martialed for Dereliction of Duty for being asleep on his watch during Pearl Harbor.

I declare that all statements herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements are made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Respectfully submitted,

Robert W. Bass

April 17, 1996

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Signature of Declarant:

Dr. Robert W. Bass

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Inventor : Mitchell R. Swartz
Serial No : 12/589,258
Filed 10/20/2009

Examiner:
Dr. Ricardo Palabrica

For:

**Apparatus and Process
for Monitoring Loading**

This is a continuation of:

Serial No. 07/371,937, Filed 06/27/1989

[Continuation Serial No. 09/750,480 Filed: 12/28/2000;

Continuation Serial No. 11/099,677 Filed 4/6/2005]

December 15, 2010

The Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

DECLARATION OF PROF. PETER HAGELSTEIN

I, Peter Hagelstein, declare that I am a citizen of the United States of America.

1. My field of experience is theoretical, computational, and applied physics. I have taught at the Massachusetts Institute of Technology and led a research group that has focused on problems of atomic physics, plasma physics, x-ray lasers, and quantum optics.
2. I have closely followed, and participated in, the field of cold fusion since 1989.
3. The scientific results presented by Dr. Mitchell Swartz on his Phusor experiments, in which excess power and total energy is measured, looks very good. His results are competitive in terms of reproducibility and power gain with the

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best results obtained by other groups around the world. The reproducible energy gains that he has reported are the highest so far reported by any group.

4. Swartz demonstrated his Phusor experiment at MIT in connection with ICCF10 in August 2003. Data from this experiment show significant excess heat. Swartz has demonstrated his Phusor experiment in his Weston laboratory, in Weston, MA numerous times for me and for others.
5. Water heaters that run on electricity from household wall plugs are currently sold to produce hot water in parts of the country where oil delivery and natural gas delivery are unavailable or inconvenient. Electricity in the Boston area costs near \$0.20/kW-hr, which seems very expensive. Swartz's Phusor experiments have shown energy gains at least up to 10x. A Phusor-based water heater with an energy gain of 10x would be competitive with existing water heaters. I would buy one if available.
6. No one in the field considers Swartz's Phusor experiment to be the same as what Fleischmann and Pons did, or what others have done. It is clearly an original experiment distinct from all that have come before. The USPTO is simply mistaken if they assert otherwise.
7. The specification of "low paramagnetic, low conductivity deuterium oxide, 99.99%, from Cambridge Isotope Laboratories, Andover MA" adequately specifies what is meant by pure heavy water in the context of Swartz's Phusor experiment. Assertions to the contrary in this case by the USPTO are incorrect.

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8. Following the announcement of cold fusion by Fleischmann and Pons in 1989, many labs carried out experiments to see whether they could replicate the experiment. Unfortunately, important experimental details concerning the experiment were not available generally in 1989, and as a result, the large majority of these replication efforts failed. Subsequently, work at SRI and at other laboratories identified a number of experimental requirements for the Fleischmann-Pons experiment need to be satisfied for excess heat to be seen. These include: (a) Pd cathodes need to be highly loaded for 2-5 weeks prior to seeing excess heat. (b) The D/Pd loading needs to exceed 0.95 at some point during this 2-5 week period. (c) The D/Pd loading needs to exceed about 0.84 at the time for an excess heat event to be seen. (d) Excess heat is correlated in the Fleischmann-Pons experiment with interfacial deuterium flux. If we restrict ourselves to this subset of the SRI criteria, we find that none of the negative experiments published in 1989 and 1990 were done in regime where excess heat would have been expected. For example, the cathode loading in the experiments done at MIT did not reach 0.80. No cathode which loaded so poorly was observed to produce excess heat in any Fleischmann-Pons experiment in the SRI experiments. Therefore, D/Pd loading is very important, and monitoring it is of great utility.
9. I note that it becomes exponentially more difficult to achieve high D/Pd loadings above a loading of 0.70 near room temperature (due to the rapid increase in deuterium chemical potential). Hence, the achievement of a loading of 0.95 in the majority of replication experiments in 1989 and 1990, where no special effort was made to achieve high loading, and where the loading was not even measured in most of these experiments cited by the USPTO, would not be expected. The existence of such a requirement was not appreciated in 1989, except by Fleischmann, Pons, and a small number of other researchers.

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10. The USPTO continues the tradition of assigning significance to these negative experiments, which were not done in the relevant parameter regime of high D/Pd loading. Thus, rather than showing that the Fleischmann-Pons experiment could not be replicated, these insufficiently loaded experiments should be understood as producing the expected negative result (no excess power) in those regimes where we would expect no excess power to be seen.
11. Today, D/Pd loading is known to be very important. There have been numerous peer-reviewed published papers that show positive excess heat results in replications of the Fleischmann-Pons experiment. If the USPTO have asserted otherwise, they are simply mistaken.
12. Since the USPTO refuses to recognize the existence of the effect, patents cannot be obtained on the associated technology. Because of this, funding to develop the technology is generally unavailable, or very nearly so, which hinders its development. By following its misguided policy in this area, the patent office impedes the development of technology that would address the energy problem, that would impact the availability of fresh water, and that could provide a real solution to the climate change issues the world faces. The development of this technology could have a real impact on national security, as the instability which results from the current situation regarding the finite availability of oil in less than friendly regions could be mitigated with the new energy source this technology promises. The development of a new energy technology in this area would be expected to provide jobs, which are badly needed at this time.
13. According to the USPTO website, the mission is described as: The USPTO mission is to ensure that the intellectual property system contributes to a strong global economy, encourages investment in innovation, and fosters entrepre-

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neurial spirit. The USPTO promotes industrial and technological progress in the United States and strengthens the national economy by:

"Administering the laws relating to patents and trademarks.

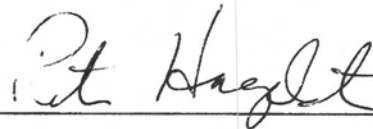
"Advising the Secretary of Commerce, the President of the United States, and the administration on patent, trademark, and copyright protection.

"Advising the Secretary of Commerce, the President of the United States, and the Administration on the trade-related aspects of intellectual property".

In the general area of the Fleischmann-Pons effect, the USPTO accomplishes exactly the opposite of its mission. The global economy is faltering, and this technology could make a difference, but is not allowed to do so because of the USPTO. The USPTO hinders industrial and technological progress, since patents generally are not allowed, because there is little or no investments (because intellectual property cannot be protected). In general, the USPTO prevents progress through its actions, contrary to its mission statement.

14. I declare that all statements herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements are made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Date: December 15, 2010



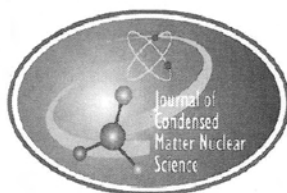
Peter L Hagelstein
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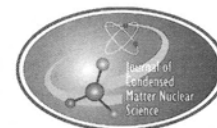
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Experiments and Methods in Cold Fusion

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Research Article

Demonstration of Energy Gain from a Preloaded ZrO₂–PdD Nanostructured CF/LANR Quantum Electronic Device at MIT

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Abstract

A self-contained, preloaded CF/LANR quantum electronic component, a NANOR[®]-type LANR device containing active ZrO₂–PdD nanostructured material at its core, showed energy gain during, and after, the January, 2012 IAP MIT Course on CF/LANR. The Series VI two terminal device featured new composition, structure, and superior handling properties. Most importantly it was preloaded so that LANR activation is separated from loading. The calorimeter had parallel diagnostics, including heat flow measurement, and calibrations included an ohmic (thermal) control located next to the NANOR[®]-type device. The preloaded LANR device demonstrated energy gain which ranged generally from 5 to 16. It was 14.1 energy gain while the MIT IAP course was ongoing. During February and March, through a range of experiments, the NANOR[®] continued to produce excess energy, confirmed by daily calibrations. This open demonstration has confirmed the existence, reproducibility, and improved control of CF/LANR reactions, and as importantly, has shown a possibly superior preloaded nanostructured LANR material and driving device.

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Keywords: Dry, NANOR, Preloading, Reproducibility

1. Introduction

Clean, high efficiency energy production is very important today, and in the foreseeable future, from whatever source. Lattice assisted nuclear reactions (LANR, also known as cold fusion and LENR) use hydrogen-loaded alloys to create heat and other products [1]. The “excess heat” is energy derived from what is believed to be deuteron fusion in aqueous, non-preloaded, earlier systems, and so the deuterons are the fuel and are extremely slowly consumed. LANR will

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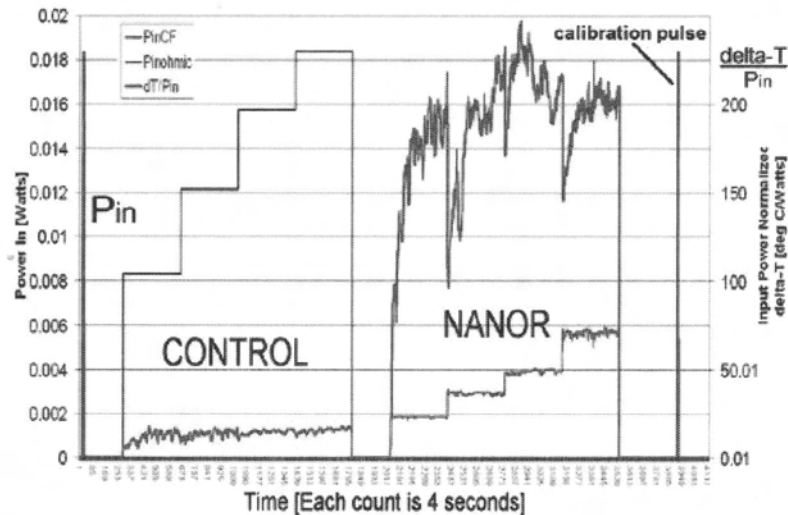


Figure 1. Input power and resulting output temperature rise (normalized to input electrical power) of a self-contained CF/LANR quantum electronic component Series 6–33; run EJan30B, a two terminal NANOR[®]-type device containing active preloaded ZrO₂–Pd nanostructured material at its core.

be an important source of energy for this planet, for artificial internal organs, for interstellar probes, and robotics, transportation, and electricity production. With LANR we also get to transfer the use of petrochemicals and gasoline into making useful pharmaceuticals and plastics and perhaps even nanomaterials. In the case of LANR, there can rarely occur, in a lattice under special conditions, the fusion of two heavy hydrogen nuclei to form a helium nucleus at near room temperature. The product helium-4, or simply helium, is *de novo* meaning that this helium-4 is created new and fresh, generated directly from two, driven by more, deuterons physically located within the loaded palladium, nickel or one of their nanostructured materials. These reactions were first reported as CMNS, LANR, LENR or cold fusion, and it involves a palladium-alloyed lattice where the process occurred irregularly at low efficiency. Most importantly, the product with LANR, helium, is environmentally safe and does not produce global contamination or warming. One such cold fusion device (PHUSOR[®]) was openly shown at MIT during August 2003 [2]. This paper reports a second open demonstration; confer Figs 1,3–5; and, therefore, it is important to compare this to the previous LANR demonstration and technology. For example, we previously demonstrated success in LANR aqueous systems, linked to high solution resistance (impedance) and shaped-metamaterial LANR devices, with power gains more than 200–500%; and short term power gains using codepositional high impedance devices DAP (Dual anode Phusor[®]-Type LANR device; Pd/D₂O, Pd(OD)₂/Pt–Au have reached energy outputs of up to ~8000% compared to input energy, where ohmic controls are defined as 100% [3–5].

The results of the previous open demonstrations of the PHUSOR[®]-type LANR devices including BOTH at MIT and later developed integrated larger systems involving paired Stirling engines driven by LANR to beyond 19 W of excess power [2]. These devices (cathode volume ~0.47 cm³, area ~6.4 cm²) yield significant excess heat after full loading, with a peak excess power production circa 1.5 W, and a peak power gain of ~2.4 or higher. Their output depends upon loading rate, loading achieved, and confinement time. The palladium Pd/D₂O/Pt devices demonstrate a critical threshold input electrical current density circa 1.5^{±0.3} mA/cm², and a possible activation energy of ~60.7 kJ/mol. Open circuit voltage (V_{oc}) greater than 1.8–2.70 V is useful and heralds excess heat. The mean excess power gain (compared

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