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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
12/911,586	10/25/2010	Robert E. Godes	90276-794326(000120US)	1479
20350	7590	05/14/2012	EXAMINER	
KILPATRICK TOWNSEND & STOCKTON LLP TWO EMBARCADERO CENTER EIGHTH FLOOR SAN FRANCISCO, CA 94111-3834			MONDT, JOHANNES P	
			ART UNIT	PAPER NUMBER
			2894	
			NOTIFICATION DATE	DELIVERY MODE
			05/14/2012	ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

Docket@kilpatricktownsend.com  
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<b>Office Action Summary</b>	<b>Application No.</b> 12/911,586	<b>Applicant(s)</b> GODES, ROBERT E.	
	<b>Examiner</b> JOHANNES P. MONDT	<b>Art Unit</b> 2894	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1)  Responsive to communication(s) filed on 23 March 2012.
- 2a)  This action is **FINAL**.
- 2b)  This action is non-final.
- 3)  An election was made by the applicant in response to a restriction requirement set forth during the interview on \_\_\_\_\_; the restriction requirement and election have been incorporated into this action.
- 4)  Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 5)  Claim(s) 1-3,5,6,9,10,12,19 and 21-29 is/are pending in the application.
- 5a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 6)  Claim(s) \_\_\_\_\_ is/are allowed.
- 7)  Claim(s) 1-3,5,6,9,10,12,19 and 21-29 is/are rejected.
- 8)  Claim(s) \_\_\_\_\_ is/are objected to.
- 9)  Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 10)  The specification is objected to by the Examiner.
- 11)  The drawing(s) filed on \_\_\_\_\_ is/are: a)  accepted or b)  objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 12)  The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 13)  Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a)  All    b)  Some \*    c)  None of:
  - 1.  Certified copies of the priority documents have been received.
  - 2.  Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - 3.  Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948)                        | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114.

Applicant's submission filed on 3/23/12 has been entered.

### ***Response to Amendment***

2. The Amendment to the Specification filed 3/23/12 has been entered, only correcting a typographic error.

3. The Declaration under 37 CFR 1.132 filed is insufficient to overcome the rejection of claims 1-3, 5, 6, 9, 10, 19 and 21-29 based upon 35 USC 101 and 112 as set forth in the last Office action because: Declaration by applicant himself does not provide the requisite counter-evidence of utility and enablement: extraordinary claims require extraordinary evidence and substantiation. The Declaration does not provide such evidence as is necessary to render credible low energy nuclear reactions, in particular fusion reactions, given the overwhelming body of experimental data and theoretical arguments against fusion under circumstances well below the Coulomb penetration barrier.

### ***Response to Arguments***

4. Applicant's arguments filed 3/23/12 have been fully considered but they are not persuasive. Applicant states with regard to lack of utility and enablement

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that he is caught in a Catch 22 situation regarding enablement and utility.

Examiner disagrees. However, extraordinary claims require extraordinary evidence and substantiation. The finding of lack of utility and enablement may be overcome if an independent committee of peers in the pertinent fields, such as a third peer review by the U.S. Department of Energy, were to conclude that cold fusion or low energy nuclear reactions were shown by the basic research continued after the latest Review by the U.S. Department of Energy (December 1, 2004: see the Report made of record) to be reproducible and thus to have utility. Applicant could have his invention tested by such organizations as the U.S. Department of Energy or NIST. For lack of utility the test is whether there is a preponderance of evidence against utility or not. For these reasons and against this backdrop a statement by applicant not even providing true evidence is inadequate.

5. Regarding applicant's comments on traverse of the rejection under 35 USC 112 based on "closed loop control system", said argument are persuasive.

### ***Specification***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

6. The specification is objected to under 35 U.S.C. 112, first paragraph as failing to provide an adequate written description of the invention and as failing to adequately teach how to make and/or used the invention, i.e. failing to provide an enabling disclosure, and under 35 U.S.C. 101 as failing to provide sufficient evidence that the asserted utility is credible. The invention "relates generally to energy generation, and more specifically to energy generation using nuclear fusion" (see "Field of the Invention"). In particular, applicant's invention claims phonon-moderated nuclear reactions based on electron capture through quantum compression in a cold fusion type system (hydrogen isotopes in a palladium core). There is no doubt that applicant's mechanism would thus require nuclear reactions under condensed matter conditions. However, for the fusion and electron capture processes far more energy is needed than is available under condensed matter conditions according to standard theory and experimental data. Accordingly, the invention's asserted utility (energy generation) is not deemed credible.

There are many factors recognized by the MPEP that are to be considered when determining whether there is insufficient evidence to support a determination that a disclosure satisfies the enablement requirement, including the nature of the invention, the level of predictability in the art and the existence of working examples. See MPEP 2164.01 (a). The examiner has the initial burden of challenging an asserted utility. Once the examiner has provided evidence showing that one of ordinary skill in the art would reasonably doubt the

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asserted utility of the invention, the burden shifts to the applicant to provide rebuttal evidence. See MPEP 2164.07(B).

It is considered by the examiner that the invention of the present application is lacking in utility because disclosed in [0002] **“energy generating, and more specifically energy generation using nuclear fusion” with further disclosure presented in paragraphs [0011], [0012], [0015], [0029]**, (i. e. with release of the excess nuclear fusion energy above a spend one for activation by fusion of proton into  $4\text{He}$  in solid lattice at low temperature with phonon initiation, referred to as Quantum Fusion) that are not proven and are contradicted to a **modern nuclear physics and solid state physics**, to the current understanding of physics and because, even if it were possible to practice the invention, the applicant has not described the method credible used to implement it in sufficient detail to enable a skilled artisan to make and use it without undue experimentation. Neutron formation probability by fusion of an electron with a proton at low energy below threshold energy 0.78 MeV (in center of mass frame) is zero (according energy conservation law) and has very small probability above threshold energy because is determined by a “weak interaction”. In an industrial scale processing of water and polyethylene by low energy electron (0.1 to 3 MeV) is not considered a neutron generation by said electron-proton fusion and was not detected. In the industrial scale processing (purification) of hydrogen by palladium in condition similar to disclosed in the specification were not observed the neutron generation by said electron-proton fusion and was not observed a fusion of protons or deuterons into  $4\text{He}$ . Neutronization is important process at

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very high density such as in star core, but it is impossible in earth conditions (see for instance Baym et al, "Neutron Star Matter", Nuclear Physics A175 (1971) 225—271; presented in IDS).

It is possible to generate the net fusion energy, by metal hydride (deuteride, tritide) **activation with a very high power** density, such as thermal, electromagnetic, or the kinetic energy of particles as realized in a hydrogen bomb. Also it is possible to activate the fusion reactions by exposing such hydrides to the energetic particles (as used in a classical neutron generators), but energy, necessary for activation of hydrogen isotopes fusion is much higher than released from said nuclear fusion. Hydrogen isotope localization by metal lattice (and electron shielding) is close to hydrogen isotopes localization in other molecules and cannot increase probability of nuclear fusion significantly as demonstrated in recent experiments (F. Raiola et al, "Electron shielding in d(d,p) for deuterided metals and the periodic table", Physics Letters B, V. 547 (3-4), pp.193-199, 2002). Parameters of said "activation" are disclosed in many books related to nuclear Fusion for example in Knief, Nuclear engineering", Hemisphere Publishing Corporation, 1992, pp. 636,642. For net energy production in D-T reaction it is need to heat D-T (without heavier element impurity) compound up to 10 keV equal to hundred million degree Celsius and product of density to confinement time should be larger than Lawson criterion (page 641, lines 11+). The electron shielding decreases threshold energy for dd fusion very little and does not permit net energy production with low activation energy as necessary for enablement of disclosed invention.

Until now net energy production from solid hydrides were activated only by a nuclear explosion in a “hydrogen” fusion explosion.

Applicant’s statement of asserted utility: “[0007] Embodiments of the present invention provide a practical, controllable, source of fusion energy based on the mechanisms outlined below. This source is scalable from the Micro Electronic Mechanical System (MEMS) scale at the milliwatt / watt level to the 100- kilowatt level and possibility beyond in a single core device. In short, embodiments of the invention contemplate inducing and controlling phonon-moderated nuclear reactions.

[0008] Another aspect of the present invention provides the understanding required to design and build products based on the core technology, referred to as Quantum Fusion”.

The “Quantum Fusion”, disclosed in application cannot enhance an energy efficiency of nuclear fusion with low energy activation significantly up to possibility release of net nuclear energy (as discussed above) with a high rate of  $^4\text{He}$  nucleons production without high energy radiation.

The nature of the invention rests on certain basic concepts, including the following:

[0011] “In broad terms, embodiments of the invention are believed to operate as follows. Reactants (e.g., hydrogen ions from water surrounding the core) are introduced into the core (e.g., palladium), and phonons are induced in a controlled manner to provide sufficient energy to convert protons into neutrons via an electron capture mechanism. The phonon- mediated mechanism is sometimes referred to in this application as quantum compression, which is a coined term (to be discussed in detail below). The neutrons, so generated, are of sufficiently low energy to result in high cross sections for



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*neutron-hydrogen reactions.*

*[0012] This generates increasingly high-atomic-weight isotopes of hydrogen, resulting in  $4\text{H}$ , which beta decays to  $4\text{He}$ . It is noted that the data in the National Nuclear Data Center ("NNDC") database is all derived from experiments involving multi-MeV colliders leaving the resulting  $4\text{H}$  with enough momentum that it is energetically, the path of least resistance to simply eject a neutron. When there is little to no momentum involved, neutron ejection is not a viable decay path as there is no energy to overcome the binding energy no matter how small that energy is. In the NNDC data the neutron is carrying reaction energy away from the system in the form of momentum. The neutron absorptions and the beta decay are exothermic, and result in kinetic energy transfer to the core in the form of phonons, which is dissipated by a suitable heat exchange mechanism (e.g., the water that supplied the reactants)".*

1). Accordingly, there is disclosed a method of generating excess energy, with using a process: "phonons are induced in a controlled manner to provide sufficient energy to **convert protons into neutrons via an electron capture mechanism**" which has not a credible confirmation in modern nuclear and solid state physics.

There is no neutron detection in such process with disclosed methods of "Phonon induced". There is no credible explanation for a physical possibility of such process realization.

Observation of "excess heat" and "excess  $4\text{He}$ " formation disclosed in references presented in IDS filed at 1/29/08 were not confirmed by independent experiments (see for instance Isagawa, "Mass spectroscopic means for

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determining  $4\text{He}$  in the presence of large amount of  $\text{D}_2$ ", Vacuum, v. 47, n. 608, p.497-499, 1996).

Excess energy generation by fusion of deuterons into  $4\text{He}$  in palladium activated by phonons was claimed by Arata (Patent Application Publication US 2006/0153752 A1) but disclosed processes were not confirmed by credible information.

[0058] *"The space or room which is retained on a surface layer or in the inside of the host as the capsule is preferably of the nanometer order (e.g., the average diameter of the space regarded as the sphere is preferably about 0.002 to about 200 nm, or preferably about 0.005 to about 50 nm). The number of captured hydrogen isotopes/hydrogen condensate needs to be at least two.*

[0089] *By applying energy to the ultrahigh-density deuterated nanoparticle, a plurality of deuterium atoms react with one another to generate heat and helium molecules.*

*The reaction is represented by:*

[0090]  $2\text{D} + 2\text{D} = 2^4\text{He} + \text{lattice energy (23.8 MeV)}$ .

[0091] *The reaction does not generate a neutron and is a mild nuclear fusion reaction, and therefore, is desirably better than a DD nuclear fusion reaction described below.*

*Therefore, the ultrahigh-density deuterated nanoparticle of the present invention is recommended to be used for a nuclear fusion reaction in terms of the conservation of the environment. The well-known DD nuclear fusion reaction which causes a radical impact of deuterium atoms to generate T and neutrons is extremely dangerous, and therefore, is not desirable in terms of industrial applicability and conservation of the environment.*

[0092] *The reaction of deuterium generates high-temperature and high-pressure gas and*

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*helium gas in the reaction furnace 201. The high-temperature and high- pressure gas and the helium gas are removed via the gas outlet 205".*

The applicant claims that the heat generation and increased concentration of helium 4 was detected after hydride activation by ultrasound waves.

Activation of hydrides with hydrogen isotopes by ion beams and by discharge is a standard method of a nuclear fusion providing for neutron generation in a high quantity, but the fusion energy produced in this process is far below of energy used for said activation. There are no credible evidences that in Applicant's disclosed" method of heat generation" the excess heat generation is possible.

The specification does not disclose a credible source of produced energy.

The fusion of two deuterium nucleon into  $4\text{He}$  nucleus in a solid at low temperature with ultrasound material activation and without high energy radiation emission was claimed before by Hagelstein (US 2007/0286324 A1: "A method and apparatus employ stimulating a material to cause reactions in the material, wherein the material comprises deuterium, and wherein the reactions generate vibrational motion of the material, coupling the vibrational motion to a transducer that generates energy from the vibrational motion of the material, and directing the energy to an electrical device" (Abstract), and in WO 90/13129) but a possibility of existence of said process was not confirmed. A negative results of said process detection was reported by Dignan et al. ("A search for Neutrons from Fusion in a Highly Deuterated Cooled Palladium Thin Film", Journal of Fusion Energy, V. 9, No. 4,469, 1990).

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Below is presented conclusions of DOE 2004 Report of the Review of Low

Energy Nuclear Reactions:

*Reviewers expert in nuclear physics noted that the cold fusion mechanism put forward by proponents is not in accord with presently accepted knowledge of D + D fusion. Specifically, D + D fusion is accompanied by the production of protons, neutrons, tritons, <sup>3</sup>He, <sup>4</sup>He and high energy gamma rays, all in well known proportions. The fusion channel resulting in <sup>4</sup>He and high energy gamma rays occurs approximately only once for every 10<sup>7</sup> (D + D) fusion reactions. These characteristic proportions for the production of the fusion products are found for every energy of the incident deuteron measured so far, down to the lowest that has been measured. The review document and oral presentations made the argument that the branching ratios are different at low energies and that in cold fusion, <sup>4</sup>He fusion channel is predominant. According to the review document, no high energy gamma rays appear to accompany the <sup>4</sup>He, as is observed in D-D fusion reactions. Instead, the approximately 24 MeV in energy resulting from D-D fusion was purported to appear as heat in the material lattice. To explain these unusual characteristics, the reviewers were presented with a theoretical framework that purported to describe how collective energy from the material lattice couples to a deuteron pair to induce fusion, how the only fusion reaction channel that occurs would be the production of <sup>4</sup>He, and how all the energy is coupled back into the material in the form of heat instead of high energy gamma-rays. The reviewers raised serious concerns regarding the assumptions postulated in the proposed theoretical model for the explanation for <sup>4</sup>He production. The preponderance of the reviewers' evaluations indicated that Charge Element 2, the occurrence of low energy nuclear reactions, is not conclusively demonstrated by the evidence presented. One reviewer believed that the occurrence was demonstrated, and several reviewers did not address the question (page 4, lines 19+).*

*While significant progress has been made in the sophistication of calorimeters since the review of this subject in 1989, the conclusions reached by the reviewers today are similar to those found in the 1989 review (Page 5, lines 15+).*

*It is no any credible evidence for possibility of net energy generation by low energy activated fusion reaction with any catalyst.*

As stated in MPEP § 2164.03, the amount of guidance or direction needed to enable the invention is inversely related to the amount of knowledge in the state of the art as well as the predictability in the art. The art of the present invention (method of heat generation by proton and electron fusion into neutron in hydrogen in solid lattice and by nuclear fusion reaction is  $2D + 2D = 4He + \text{lattice energy}$  (23.8 MeV) is so new that it cannot be considered to have a body of knowledge associated with it, much less predictability of results). Applicant has

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only provided data that is based upon questionable science, and so that data is also questionable until such time that applicant rigorously proves that the applied concepts were plausible and the data statistically sound. Since Applicant has not established the operability of the presently claimed invention as discussed, it is considered that the invention is lacking in utility. Given the state of the art as discussed herein, it would be unreasonable to expect one skilled in the art to be able to make and use the claimed invention without undue experimentation. It is well established that where, as here, the utility of the claimed invention is based upon allegations that border on the incredible or allegations that would not be readily accepted by a substantial portion of the scientific community, sufficient substantiating evidence of operability must be submitted by applicant.

Simply stating that the concepts the inventor espouses are correct is not sufficient substantiating evidence. Sufficient substantiating evidence may be based on widely accepted scientific concepts (e.g., quantum nuclear physics, credible experiment), a working model, or a supporting opinion in a widely respected and peer-reviewed publication (existing credible publications do not support optimistic Applicant's assumptions).

It is thus considered that the examiner has set forth a reasonable and sufficient basis for challenging the adequacy of the disclosure. The statute requires the applicant itself to inform, not to direct others to find out for themselves. MPEP 2107.01. Note that the disclosure must enable a person skilled in the art to practice the invention without having to design structure not shown to be readily

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available in the art; In re Hirsch, 131 U.S.P.Q. 198.

Given the state of the art as discussed herein, it is unreasonable to expect one skilled in the art to be able to make and use the claimed invention without undue experimentation.

The claimed invention as a whole must be **useful** and accomplish a **practical** application. That is, it must produce a “useful, concrete and tangible result”. MPEP 2106, Section II. The purpose of this requirement to limit patent protection to inventions that possess a certain level of “real world” value, as **opposed to subject matter that represents nothing more than an idea or concept, or is simply a starting point for future investigation or research.**

MPEP 2106, Section II.

### **MPEP 2164.01(a) Undue Experimentation Factors**

There are many factors to be considered when determining whether there is sufficient evidence to support a determination that a disclosure does not satisfy the enablement requirement and whether any necessary experimentation is "undue." These factors include, but are not limited to:

(A) The breadth of the claims- *is broad and doubtful, because the invention alleges to solve a “fusion energy generation and helium production” by process (Quantum Fusion) contradicted to modern science.*

(B) The nature of the invention- *there is a method of heat generation through nuclear fusion with “low threshold activation energy”; the nature of the invention (Quantum Fusion) as disclosed thus involves very drastic change of hypotheses in the nuclear physics;*

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(C) The state of the prior art- *effects claimed by applicant's were not observed in many experiments with much, much higher scale of energy activation. There are no evidences, that a claimed process can be used for net fusion energy production (Hydrogen isotopes localization produced in hydrides is hundred thousand times larger than hydrogen isotope size and cannot enhance significantly a nuclear transmutation probability);*

(D) The level of one of ordinary skill- *there is no experience for strong enough nuclear fusion enhancement by hydrides (Quantum Fusion) with hydrogen isotopes;*

(E) The level of predictability in the art- *a possibility for nuclear fusion with low activation energy, and net energy generation by said (Quantum Fusion)n with a hydrogen isotopes as claimed are likely impossible.*

(F) The amount of direction provided by the inventor- *is wholly insufficient because, inventor presented assumptions, speculations related to nuclear fusion and heat and helium generation are not conformed in independent experiments.*

(G) The existence of working examples- **not exist**, *realization of heat and helium detection during activation of (Quantum Fusion)" contacting with hydrogen isotopes (D2) is not credible and does not have independent confirmations.*

(H) **The quantity of experimentation needed to make or use the invention based on the content of the disclosure- need undue experimentation and can have likely negative results.**

Even arguendo, and independent of in re Wands, since the invention as a matter of fact was found to lack utility the "use" prong in 35 U.S.C. 112, first paragraph ("...to make and use the same...") implies that as a matter of law the invention lacks enablement, since what has no utility cannot be used.

### ***Claim Rejections - 35 USC § 101***

35 U.S.C. 101 reads as follows:

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Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

7. **Claims 1, 2-3, 5-6, 9-10, 12, 19 and 21-29** are rejected under 35 U.S.C. 101 because the disclosed invention is inoperative and therefore lacks utility, as set forth in section 6 of this Office Action.

***Claim Rejections - 35 USC § 112***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

8. **Claims 1, 2-3, 5-6, 9-10, 12, 19 and 21-29** are also rejected under 35 U.S.C. 112, first paragraph. Specifically, since the claimed invention is not supported by either a credible asserted utility or a well established utility for the reasons set forth above in section 7, one skilled in the art clearly would not know how to use the claimed invention.

9. **Claims 1-3, 5-6, 9-10, 12, 19 and 21-29** are rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Claim 1 is not enabled by the disclosure as set forth above. The



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reason of this claim 1 rejection the same as the reason of the Specification objection as set forth above.

10. **Claims 1-3, 5-6, 9-10, 12, 19 and 21-29** are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Claim 1 is not enabled by the disclosure as set forth above. The reason of this claim 1 rejection the same as the reason of the Specification objection as set forth above.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

11. **Claims 1, 2-3, 5-6, 9-10, 12, 19 and 21-29** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The claims are vague, indefinite and incomplete, and its metes and bounds cannot be determined, particularly in regard to reason set forth in section 8 of this office action.

12. **Claims 1, 2-3, 5-6, 9-10, 12, 19 and 21-29** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

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The claims are vague, indefinite and incomplete, and its metes and bounds cannot be determined, particularly in regard to reason set forth in section 9 of this office action.

13. **Claims 1, 2-3, 5-6, 9-10, 12, 19 and 21-29** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The claims are vague, indefinite and incomplete, and its metes and bounds cannot be determined, particularly in regard to reason set forth in section 10 of this office action.

14. **Claim 25** is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The “means” “for electrolytically introducing reactants” (line 4) triggers 35 U.S.C. 112, sixth paragraph, but no structure or materials are disclosed in the specification that correspond to the recited function. Therefore, the metes and bounds of the claimed invention are additionally vague and ill-defined, rendering the claim indefinite.

### ***Conclusion***

15. This is a Request for Continued. All claims are drawn to the same invention claimed in the earlier application and could have been finally rejected on the grounds and art of record in the next Office action if they had been entered earlier. Accordingly, **THIS ACTION IS MADE FINAL** even though it is a

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first action in this case. See MPEP § 706.07(b). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no, however, event will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JOHANNES P. MONDT whose telephone number is (571)272-1919. The examiner can normally be reached on 8:00 - 5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kimberly D. Nguyen can be reached on 571-272-2402. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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