

A detailed Qualitative Approach to the Cold Fusion Nuclear Reactions of H/Ni

By prof. Christos Stremmenos

After several years of apparent inaction, the theme of cold fusion has been recently revitalized thanks to, among others, the work and the scientific publications of Focardi and Rossi, which has been conducted in silence, amidst ironical disinterest, without any funding or support. In fact, recently, practical and reliable results have been achieved based on a very promising apparatus invented by Andrea Rossi. Therefore I want to examine the possibility of further development of this technology, which I deem really important for our planet.

Introduction

I will start with patent no./2009/125444, registered by Dr. Ing. Andrea Rossi. This invention and its performance have been tested and verified in collaboration with Prof. Sergio Focardi, as reported in their paper, published in February 2010 in the Journal of Nuclear Physics [1]. In that scientific paper they have reported on the performance of an apparatus, which has produced for two years substantial amounts of energy in a reliable and repeatable mode and they have also offered a theoretical analysis for the interpretation of the underlying physical mechanism.

In the history of Science, it is not the first time that a practical and reliable apparatus is working before its theoretical foundation has been completely understood! The photoelectric effect is the classic example in which the application has anticipated its full theoretical interpretation, developed by Einstein. Afterwards Einstein, Plank, Heisenberg, De Broglie, Schrödinger and others formulated the principles of Quantum Mechanics. For the interactive Nickel/Hydrogen system it would be now opportune to compile, in a way easily understood by the non expert the relevant principles and concepts for the qualitative understanding of the phenomenon. Starting with the behavior of electrically charged particles in vacuum, it is known that particles with opposite electric charge attract themselves and “fuse” producing an electrically neutral particle, even though this does not always happen, as for instance in the case of a hydrogen atom, where a proton and a electron although attract each other they do not “fuse”, for reasons that will be explained later. On the contrary, particles charged with electric charge of the same sign always repel each other, and their repulsion tends to infinity when their distance tends to zero, which implies that in this case fusion is not possible (classical physics).

On the contrary, according to **Quantum mechanics**, for a system with a great number of particles of the same electric charge (polarity) it is possible that a few of them will fuse, as for instance, according to Focardi-Rossi, in the case of Nickel nuclei in crystal structure and hydrogen nuclei (protons) diffused within it, Although of the same polarity, a very small percentage of these nuclei manage to come so close to each other, at a distance of 10-14 m, where strong nuclear forces emerge and take over the Coulomb forces and thus form the nucleus of a new element, either stable or unstable.

This mechanism, which is possible only in the atomic microcosm, is predictable by a quantum-mechanics model of a particle put in a closed box. According to classical physics no one would expect to find a particle out of the box, but in quantum mechanics the probability of a particle to be found out of the box is not zero! This is the so called “tunneling effect”, which for systems with a very large number of particles, predicts that a small percentage of them lie outside the box, having penetrated the “impenetrable” walls and any other present barrier through the “tunnel”! In our case, the barrier is nothing else but the electrostatic repulsion, to which the couples of hydrogen and nickel nuclei (of the same polarity) are subjected and is called Coulomb barrier.

Diffusion mechanism of hydrogen in nickel: Nickel as a catalyst first decomposes the biatomic molecules of hydrogen to hydrogen atoms in contact with the nickel surface. Then these hydrogen atoms deposit their electrons to the conductivity band of the metal (Fermi band) and due to their greatly reduced volume, compared to that of their atom, the hydrogen nuclei readily diffuse into the crystalline structure of the nickel, including its defects. At this point, in order to understand the phenomenon it is necessary to briefly describe the structure both of the nickel atom and the nickel crystal lattice.

It is well known that the nickel atom is not so simple as the hydrogen atom, as its nucleus consists of dozens of

protons and neutrons, thus it is much heavier and exerts a proportionally higher electrostatic repulsion than the nucleus of hydrogen, which consists of only one proton. In this case, the electrons, numerically equal to the protons, are ordered in various energy levels and cannot be easily removed from the atom to which they belong. Exception to this rule is the case of electrons of the chemical bonds, which along with the electrons of the hydrogen atoms form the metal conductivity band (electronic cloud), which moves quasi freely throughout the metal mass.

As in all transition metals, the nickel atoms in the solid state, and more specifically their nuclei, are located at the vertices and at the centre of the six faces of the cubic cell of the metal, leaving a free internal octahedral space within the cell, which, on account of the quasi negligible volume of the nuclei, is practically filled with electrons of the nickel atoms, as well as with conductivity electrons.

It would be really interesting to know the electrons' specific density (number of electrons per unit volume) and its spatial distribution inside this octahedral space of the crystal lattice as a function of temperature.

Dynamics of the lattice vibration states

Another important aspect to take into consideration in this system is the dynamics of the lattice vibration states, in other words, the periodic three dimensional normal oscillations of the crystal lattice (phonons) of the nickel, which hosts hydrogen nuclei or nuclei of hydrogen isotopes (deuterium or tritium) that have entered into the above mentioned free space of the crystal cell.

It could be argued that the electrons' specific density and its spatial distribution in the internal space of the crystal structure should be coherent with the natural frequencies of the lattice oscillations. This means that the periodicity of the electronic cloud within the octahedral space of the elementary crystal cell of Nickel generates an oscillating strengthening of shielding of the diffused nuclei of hydrogen or deuterium which also populate this space.

I believe that these considerations can form the basis for a qualitative analysis of this "NEW SOURCE OF ENERGY" and the phenomenology related to cold fusion, including energy production in much smaller quantities and various reaction products.

Shielding of protons by electrons

In the Focardi-Rossi paper the shielding of protons provided by electrons is suspected to be one of the main reasons of the effect, helping the capture of protons by the Ni nucleus, therefore generating energy by fusion of protons in Nickel and a series of exothermic nuclear reactions, leaving as by-product isotopes different from the original Ni (transmutations). Such shielding is one of the elements contributing to the energetic efficiency of the system. From this derives the opportunity, I think, to focus upon this shielding, both to increase its efficiency and to verify the hypothesis contained in the paper of Focardi-Rossi. Of course, what we are talking of here is a theoretical verification, because the practical verification is made by monitoring the performance of the apparatus invented and patented by Andrea Rossi, presently under rigorous verification by many independent university researchers.

In my opinion, the characteristics of the shielding of the proton from the electrons should be defined, as well as the "radiometric" behavior of the system.

In other words, the following two questions should be answered:

1. Which is the supposed mechanism that overcomes the powerful electrostatic repulse (**Coulomb barrier**) between the "shielded proton" and the Nickel nucleus?
2. For what reason there is almost no radiation of any kind (experimental observation), while according to the Focardi and Rossi's hypothesis there should have been some γ radiation (**511 KeV**) produced by the predicted annihilation of the β^+ and β^- particles that are being created during the Fusion?

I believe that some thoughts based on general and elementary structures, data and principles of universal scientific acceptance, might shed some light to this exciting phenomenon. More specific, I refer to **Bohr's hydrogen atom, the speed of nuclear reactions (10-20 sec) and the Uncertainty Principle of Heisenberg.**

I will take Bohr's hydrogen atom as a starting point (figure 1a), which stays at its fundamental state forever in the absence of external perturbations, due to De Broglie's wave, accompanying the sole electron.

As stated before, in contact with the metal, these atoms lose their fundamental state, as their electrons are being

transmitted to the conductivity band. These electrons, together with the “naked nuclei” of hydrogen (protons), form a freely moving cloud of charges (plasma at a degenerate state) inside the crystalline lattice. That cloud is being defused through the surface to the polycrystalline mass of the metal, covering empty spaces of the non-canonical structure of the crystalline lattice, as well as the tetrahedral and octahedral spaces between the molecules. As a consequence, the crystalline structure is covered by “**delocalized plasma**” (degenerate state), which is consisted by protons, electrons produced by the “absorbed atoms” of hydrogen, as well as by the electrons of the chemical valence of Nickel of the lattice, at different energy states (Fermi’s band). (Fig. 2)

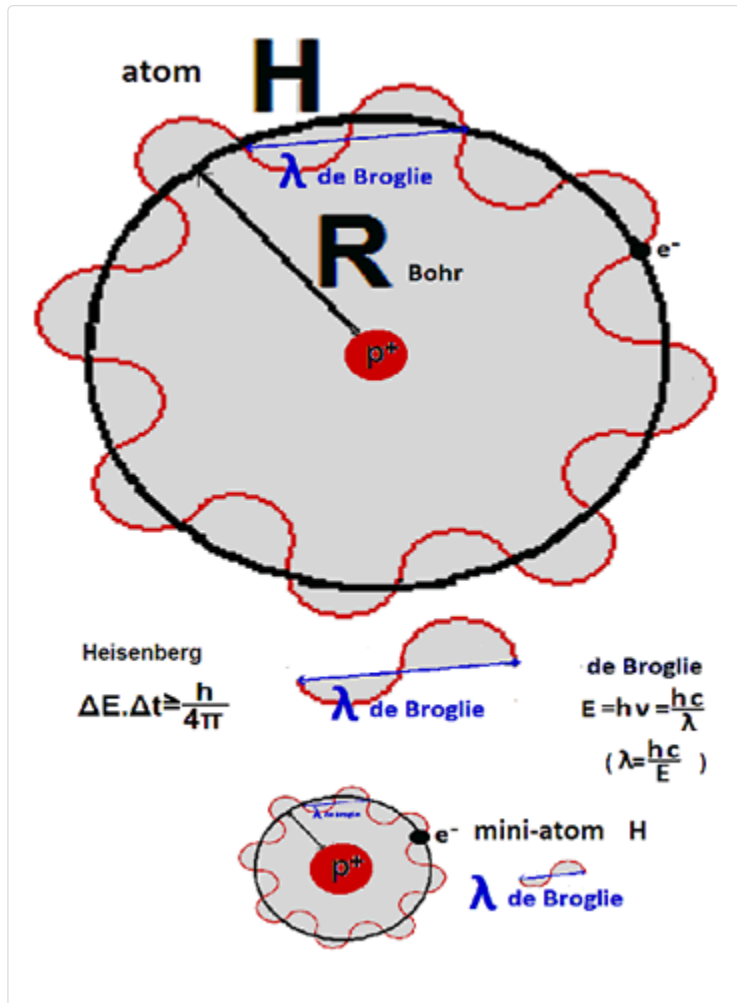


Fig.1b

In this system, if one considers the probability of the creation **inside the crystalline lattice** of temporary (not at the fundamental state) “**pseudo-atoms**” of hydrogen with neutral charge, for example at a time of the order of 10^{-17} sec, then that possibility is not completely ill-founded. (Fig 1b)

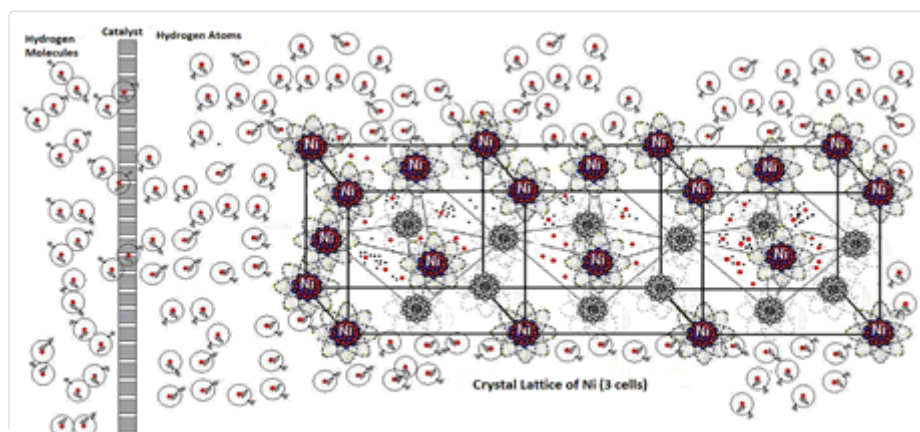




Fig.2

According to the Uncertainty Principle of **Heisenberg**, the temporary atoms of hydrogen will cover during that small time interval Δt , a wide range of energies ΔE , which means also a wide range of **atomic diameters** of temporary atoms, satisfying the **De Broglie's condition**. A percentage of them (at first a very small one) might have diameters smaller than 10^{-14} m, which is the **maximum active radius of nuclear reactions**. In that case, **the chargeless temporary atoms, or mini-atoms, of hydrogen** together with high energy but short lived electrons, are being statistically trapped by the Nickel nuclei at a time of 10^{-20} sec. In other words, the high speed of nuclear reactions permits the fusion of short lived **but neutral** mini-atoms of hydrogen with the Nickel nuclei of the crystalline lattice, as during that short time interval **the Coulomb barrier (of the specific hydrogen mini-atom) does not exist**.

Afterwards, it follows a procedure similar to the one described by Focardi and Rossi, but instead of considering the capture of a shielded proton by the **Ni58** nucleus, we adopt the hypothesis of trapping a neutral temporary atom, or a mini atom, of hydrogen (with a diameter less than 10^{-14} m) which transforms the **Ni58** nucleus into **Cu59** (copper/59, short lived isotope*).

It follows the predicted " **β decay**" of the nuclei of the short lived isotope of copper, accompanied by the emission of **β^+ (positrons)** and **β^-** (perhaps the electrons of the mini atoms trapped inside that nucleus during the fusion). These particles are being annihilated with an emission of γ radiation (two photons of γ of energy 511 KeV each, for every couple of **β^+** and **β^-**).

In other words, whoever has experimented with this system should have suffered the not-so-harmless influence of those radiations, but that never happened. The radioactivity measured at the experiments is almost zero and easily shielded.

In any case, a rigorous, in my opinion, theoretical approach for the interpretation of that phenomenon with quantum mechanical terms, would give clear quantitative answers to the above stated models. With my Colleges of theoretical chemistry, we are already planning to face the problem using the time-dependended quantum mechanical perturbation theory, bearing in mind the following:

1. The total **wave function** (of the nucleus and the electrons) of temporarily, non-stable states.
2. The total time-dependended Hamiltonian, for temporarily states.
3. Searching for the **resonance conditions** at that system.

Such an approach had a successful outcome at a similar problem of theoretical chemistry and we hope that it will be valid in this case as well.

Let's go back to the intuitive, with ideal models, approach, in order to give a qualitative explanation for the (almost) absent radiations of the system, by using:

- First of all the **Boltzmann's distribution** (especially at the asymptotic area of high energies).
- **The photoelectric effect**
- **The Compton effect**
- **The Mössbauer effect**

We have already mentioned that from the temporary mini atoms of hydrogen, the ones with diameter less than 10^{-14} m, have a larger probability of fusion. But, in order for them to be created, high energy bond electrons should exist at the "delocalized plasma" of the crystalline lattice.

1. Boltzmann's statistics:

There are reasons to believe that the H/Ni system, at first at temperatures of about 400-500oC, contains a very small percentage of electrons in the "delocalized plasma" with enough energy to create (together with the diffused protons), according to the wave-particle duality principle, the first temporary mini atoms of hydrogen, that will trigger the fusion with the nickel nuclei and the production of **high energy γ photons** (511 KeV).

2. Photoelectric Effect:

It is not possible, the HUGE amount of energy (in kW/h), that the Rossi/Focardi reactor produces, as measured by unrelated scientists in repeated demonstrations (at one of them by the writer and his colleagues, Fig 3), to be created due to the **thermalization** of the insignificant number of γ photons at the beginning of the reaction.

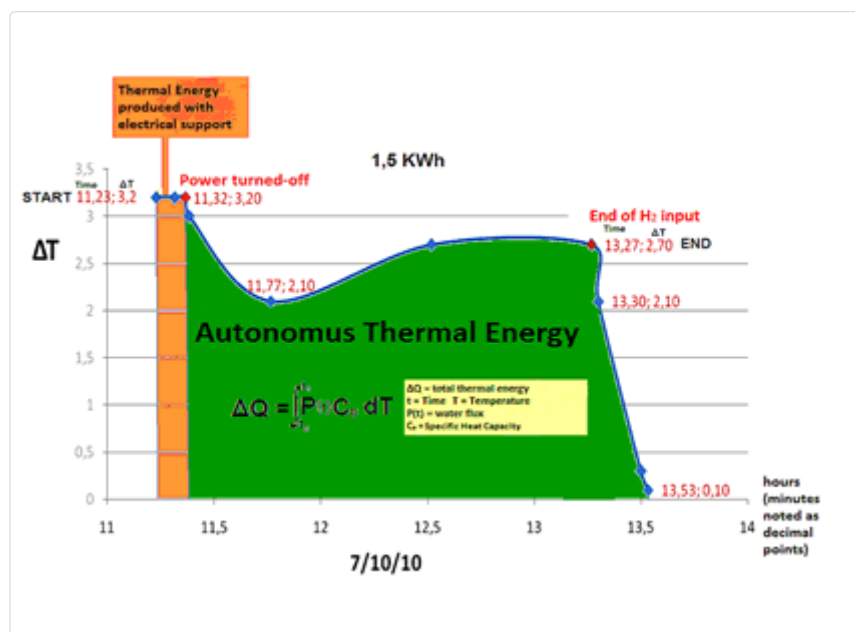


Fig.3

I believe that, as stated above, these photons are the trigger of fusion at a multiplicative series, **based on the photoelectric effect inside the crystalline structure.**

The two γ photons can **export symmetrically (180°)** two electrons from the nearest Nickel atoms. The stimulation, due to the high energy of γ , concerns electrons of internal bands of two different atoms of the lattice and has as a prerequisite the absorption of **all the energy of the photon**. A small part of that energy is being consumed for the export of the electron from the atom and the rest is being transformed into kinetic energy of the electron (thermal energy).

The result of that procedure is to enrich the “delocalized plasma” with high energy electrons that will contribute multiplicatively (by a factor of two) at the progress of the cold fusion nuclear reactions of hydrogen and nickel and at the same time transform the hazardous γ radiation into useful thermal energy.

3. The Compton Scattering:

It gives the additional possibility of multiplication, this time due to secondary photons γ , in a wide range of frequencies, as a function of the angular deviation from the direction of the initial photon of **511 keV**. **That has as a result the increase of the export of electrons, due to the photoelectric phenomenon at the crystalline mass, in many energy/kinetic levels, which gives an additional possibility of converting the γ radiation into useful thermal energy.**

4. The Mössbauer effect:

It gives another possible way of absorbing the γ radiation and transforming it into thermal energy. It is based on the principle of conservation of momentum at the regression of the new **Cu59** nucleus/ from the emission of a γ photon. Relative calculations (Dufour) showed that this mechanism has an insignificant (1%) contribution.

It follows that, according to given data, the Photoelectric phenomenon and the Compton Effect, could explain the absence of radiations in the Focardi-Rossi system, which, from the amount of producing energy versus the consumption of Ni and H₂, as well as from the experimental observation of element transformations, lead undoubtedly to the acceptance of hydrogen cold fusion.

ACKNOWLEDGEMENTS: The author wishes to acknowledge Aris Chatzichristos for the contribution in formulating this paper in English

References:

(1)www. journal-of-nuclear-physics.com /Focardi Rossi/ (A new energy source from nuclear fusion)

* I believe that the phasmatometric tracing of copper is the most definitive sign of nuclear fusion: From the relative bibliography (HANDBOOK OF CHEMISTRY AND PHYSICS, 66TH edition), it follows that the stable non radioactive isotopes of nickel are the following five:

58, 60, 61, 62 and **64**. These, when fused with a hydrogen nucleus, are being transmuted relatively to **Cu-59, Cu-61, Cu-62, Cu-63** and **Cu-65**. From these isotopes of copper only the last two (**Cu-63** and **Cu-65**) are not radioactive, i.e. they are stable. The other three **Cu-59, Cu-61, Cu-62**, are being transmuted again to Nickel, with an average life expectancy of some hours and the most unstable Cu-59 in 18 seconds.

By prof. Christos Stremmenos

May 25th, 2011 | Category: [Publication](#)

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twmemphis

[June 24th, 2011 at 6:11 AM](#)

Hi!

I read in some reports from January that the E-Cat requires 400W of electrical power to reach up to 15kWh at its Peak. A great value!

Now I watched the video of Mr. Krivits visit and it showed a power-consumption of 770Wh with a heat-output of only 4906Wh.

I still think this is a fantastic result, but what is the reason for the big difference to the January numbers?

Regards,

TW

Andrea Rossi

[June 24th, 2011 at 5:18 AM](#)

AFTER THE REQUEST ARRIVED FROM MANY READERS, WE MADE THE ENGLISH TRANSLATION OF THE COMMENT RECEIVED ON 2011/ 06/ 23 REGARDING THE MEASUREMENT OF STEAM PRODUCTION: IS IMPORTANT, BECAUSE IN A VERY SIMPLE WAY EXPLAINS THE ISSUE. THE AUTHOR IS A PROFESSIONAL THERMOTECNIC .

TRANSLATION

The humid steam is made by liquid droplets suspended in the steam. It is the same steam to push the droplets upward. The humid steam does not exist, exists the saturated steam. The water droplets that are formed in the saturated steam are due to water molecules which combine between themselves releasing heat to the room, but those droplets exit from the boiling water, absorbing the necessary heat.

We must remember that in a mass of saturated steam exists a part of molecules of water with a higher temperature and another with a lower temperature, subject to micro-condensation, but the average temperature is the one of the boiling point of the water at room pressure. In the dry steam such microcondensations are irrilevant, but this is due to the fact that they have higher thermal energies, with calculus approximations pro E-Cat, but, again, it is necessary that the boiling process is not turbolent, and this is not the case.

Professors Levi, Kullander, Essen, Focardi and Dr Rossi made an excellent set up of the testing system: they weighted the water in the reservoir, say 8 kg, pumping in the E-Cat 8 kg/h exactly and regularly: the more is regular the water flow, the less are possible turbulent boiling processes and mistakes, which anyway could be minimal.

To become steam water needs 0.6275 Wh/ml, or 0.6275 Wh/g, being 1 g/ml the density of water. Therefore, every liter (or kg) of water consumes 6275 Wh; therefore, presuming a power of the E-Cat of 5 kW, are necessary 8000 ml, or g, of water boiled in 1 hour.

About the steam flow, the sight of it is not significant, because the visible part are just the droplets; besides, in that pipe there is also a strong condensation of water.

END OF THE TRASNSLATION

H. Hansson

June 24th, 2011 at 2:06 AM

Dear Stavitskiy Igor,

It's great to welcome a Russian to the e-cat fans. The question is how well the E-cat will be Received in Mother Russia? The whole of the Russian nomenklatura build his power base on the export of raw energy (including oil, gas and coal) and to some extent.. old nuclear power.

I believe that Moscow's attitude, initially, will be somewhat different from yours .. lukewarm (to put it nicely). Just make sure that you don't end up in Gulag, where you will do no good at all.

The Russian prison system is full of oil-oligarchs who have tried to compete with Moscow. Not to mention foreign investors who had their businesses confiscated or been forced to sell their business to the Russian government.

Andrea Rossi

June 24th, 2011 at 2:04 AM

Dear Eernie 1:

Please contact me in the first week of October, to invite you to visit the 1 MW plant.

Warmest Regards,

A.R.

Andrea Rossi

June 24th, 2011 at 1:58 AM

Dear Sari (Patricia) Swensen:

USA is the Country I chosen to reside in. I owe my life to the USA. I do not remember me to have made the statement you say, probably it was in a particular context. In any case, I feel, living mainly in the USA, that the USA will exit soon from this world economical crisis: I feel it from the enormous effort that our People is making in their job. I hope my technology will help, as well as most of Americans, that in this moment are thinking more to what they can do for their Country than to what their Country can make for them. This is the real strength of the USA. By the way: we, the taxpayers of the USA, are spending mountains of dollars to pay for the defense of the NATO members. And ours, mainly, is the blood of the casualties. ISAF is the acronym for "I Saw Americans Fighting". Our momentarily crisis comes also from this issue, that cannot go ahead for ever. So, let's struggle together, I will do my part with this technology, born in the USA, which will have two poles of development: USA and Greece.

Warm Regards,

A.R.

Andrea Rossi

June 24th, 2011 at 1:44 AM

Dear Fabrizio P.:

We will work as much as possible to put the E-Cats in households, but we need time, mainly for certification issues. For industrial plants it is easier.

Warm Regards,
A.R.

Fabrizio P.

June 24th, 2011 at 1:31 AM

Vedo con piacere che le cose procedono come da pianificazione.

E' da tempo che seguo con trepidazione ogni notizia su di Lei e l'e-cat..

non so se ricorda ma tempo fa avevo Le chiesto di averne uno da installare nel mio giardino..

Sono felice per Lei e i suoi collaboratori, da profano (mi occupo di sviluppo di software) posso solo immaginare gli ostacoli che avete dovuto affrontare per arrivare fin qui.

Fin da ragazzo ho sempre sognato un futuro incentrato sulla tecnologia e forgiato dall'uomo.. poi ho visto i limiti del progresso, il contendersi le risorse energetiche.. Ora Lei da nuova linfa vitale ai miei sogni.. grazie!!

Tenga duro Rossi, i detrattori spariranno come d'incanto appena accenderà quella centrale in Grecia. Mi piacerebbe esserci.

Ah, dimenticavo.. per quell'e-cat in giardino.. sto preparando un piccolo vano.. 😊

Buon lavoro

Sari (Patricia) Swensen

June 23rd, 2011 at 8:49 PM

Dear eernie1,

I hold extreme gratitude & respect for all that you've done! Mistakenly, I had thought that you were Anti-American, as I'm multi-lingual and see very frequently those that wish to bash us. The reason that I felt this way, was because of your commenting, "my feeling is that most Americans have no problems with their energy supply. It is relatively cheap, reliable and in existence for such a long time that they regard it as a no problem situation." I automatically assumed that you must be referring to those of us Americans, that live for free on welfare. As I was incapable of thinking that anyone here working, would give you this belief. I hadn't thought of the opposite side of the spectrum, where you could be wealthy enough not to care. Although I am considered more on the above-average in my country's statistics financially, the majority of my friends are middle income. Previous to reading your comment, I had read a comment from a friend decisive whether to take the last \$10 dollars he had to either feed his family or take his truck full of produce 2 1/2 hours away to bring to market. He chose market, but ran out of fuel on the way, Thank God for a good citizen that stopped & gave him the money to continue, his journey. I can promise you that there are two things that people absolutely need: food & shelter. I apologize for coming so forcefully to you, but us un-rich, not excepting welfare... Americans are struggling!!!! I took to offense that we don't care, when meanwhile every person I know has been effected & trust me, WE CARE!!!!

Paul Story

June 23rd, 2011 at 8:15 PM

Dear Andrea Rossi,

You must be both excited and exhausted. Please keep going in good health. There are an ever-growing number of the world's people cheering you on.

The Xanthi Press appear to be saying that President Obama and Berlusconi had official (parliamentary?) questions because Greece got the world rights. Not sure if that is a translation problem or if there is something to it. Please enlighten us, if you can. The hope that people who matter are sitting up to take notice is a dream that may or may not be true.

It makes you wonder if today's oil price fall is not coincidence. We can but wish. Info on Xanthi Article and oil drop at <http://www.ecatnews.com>

Good luck on this amazing adventure.

Daniele Passerini

June 23rd, 2011 at 5:29 PM

I advise to all the readers of JoNP these two videos:

Low Energy Nuclear REVOLUTION (with all the protagonists of the E-Cat's history!)

Andrea Rossi's 'E-cat' nuclear reactor: a video FAQ (with Nobel Brian Josephson)

Andrea Rossi

June 23rd, 2011 at 5:02 PM

Dear Prof. Stavitskiy Igor:

Please contact me

info@leonardocorp1996.com

to let me invite you to attend the operation of our 1 MW plant in Greece, next October.

Warm Regards,

A.R.

Andrea Rossi

June 23rd, 2011 at 5:00 PM

Dear Mr Pana,

There are three Countries for which I am ready to fight up to the maximum of my possibilities: Greece, Sweden, USA.

Why? Because here I found help when I really needed it.

Of course my work will be concentrated here. Nevertheless I appreciated extremely the courage with which the University of Bologna has honestly sustained the work they made to test our effect and this is the reason why we have chosen the University of Bologna as the center of our R&D program. And, believe me, the Professors of this University are among the best in the World in the field of Physics.

Warm Regards,

A.R.

Andrea Rossi

June 23rd, 2011 at 4:49 PM

Gent. Maurizio:

Grazie. Per prezzi e stuff commerciali ci contatti in Novembre.

Cari Saluti,

A.R.

Andrea Rossi

June 23rd, 2011 at 4:46 PM

Dear Neil Taylor,

Thank you, very interesting. Can you send a proposal? I can buy one to test it immediately.

Warm Regards,

A.R.

eernie1

June 23rd, 2011 at 4:42 PM

Rossi; Like famous soccer stars when a single name Rossi is used everyone now knows who Rossi is. You are famous. What convinced me that your device is real and commercially ready is your ability to designate a delivery date (last two weeks in October). In the dozens of development projects I was involved with, I could only specify a firm product delivery date when I was sure that the product would work as advertised. To me, when you first announced the date of the 1MW device was when you were sure you had a working device. The date

then was determined by your investors marketing department who needed the time to assemble the best combination of demonstrations and news releases to achieve maximum interest. They have performed superbly and are to be congratulated on a job well done. Car manufacturers have done this type of marketing for many years. When their new models were ready they designated a date when they would be available for purchase. My new 2011 car was available in July of 2010. We are all looking forward to October!! Good luck.

Daniele Passerini

June 23rd, 2011 at 3:15 PM

Dear ing. Rossi, a very interesting comment by my blog, in italian sorry.

Rampa ha detto...

TIA scrive...

Il vapore umido è costituito da vapore e da acqua liquida in forma di microgocce sospese nel vapore.

E' il vapore stesso a sospingerle in alto.

Il vapore umido non esiste, esiste il vapore saturo. Le goccioline di acqua che si formano nel vapore saturo sono dovute a molecole d'acqua che si uniscono tra loro cedendo calore all'ambiente, ma quelle goccioline sono ben uscite dall'acqua che bolle, portandosi via il calore necessario.

Ricordo che in una massa di vapore saturo esiste una parte di molecole d'acqua con maggior temperatura e un'altra con minore temperatura (soggette a micro-condensazione) ma nella media la T è quella dell'ebollizione per quella pressione ambientale.

Nel vapore secco queste micro-condensazioni sono praticamente inesistenti, ma questo è dovuto al fatto che sono dotate di energie termiche più elevate, con errori di calcolo per difetto (pro E-Cat quindi)

Mi ripeto: è necessario che l'ebollizione non sia tumultuosa e qui non mi pare il caso.

Rossi sta facendo un ottimo lavoro nella taratura dei suoi apparecchi: pesa 8kg di acqua per ognuno ognivolta e comanda alla pompa di erogarli nell'E-cat in un'ora, regolarmente. Più regolarmente viene erogata l'acqua, meno sono possibili ebollizioni tumultuose ed errori (minimi comunque). Queste molto probabilmente sono state le istruzioni (perfette) di Levi e Co. Per evaporare l'acqua consuma (e ripeto a qualsiasi temperatura !!!) 0,6275 Wh/ml (o grammo, che è lo stesso, con buona pace per Krivit).

Ogni litro consuma 6275 Wh e se presumi che l'E-Cat sia da 5 kW, ne devi buttare dentro 8000 gr o ml, 8 litri in un'ora, lentamente, per favore, per non incasinare il tutto.... lavola, lavola...

Ora, quando Krivit è stato accettato nel capannone di Rossi come ospite curioso (questo penso sia stato il convincimento di Rossi nei confronti di colui), egli stava tarando un E-cat da 5 kW e Rossi gliel'ha mostrato semplicemente, 8 litri e tubo di vapore con pompa tarata per erogarli in un'ora.

Se Rossi stava barando in quel momento, lo stava facendo con se stesso: solo un deficiente barerebbe con se stesso.

Rossi si è aperto come un libro, fiduciosamente.

E si è sentito tradito... comprensibile umanamente il suo disappunto.

Il flusso del vapore non è convincente per Krivit ? Ha una dispersione enorme quel tubo e le condensazioni interne sono altrettanto enormi.

Krivit voleva una dimostrazione scientifica, mentre Rossi gli ha solo illustrato un apparecchio in funzione di prova.

Avesse voluto ingannare Krivit, Rossi si sarebbe preparato in modo migliore.

Rossi lo credeva un giornalista, mentre Krivit si crede uno scienziato, ma ne deve studiare di cose per capirci in termodinamica...

21 giugno 2011 22:08

Neil Taylor

June 23rd, 2011 at 12:56 PM

I ran across this article today and this new breakthrough could help to revolutionize the E-Cat conversion of steam heat directly to electricity very efficiently. Check it out at:

http://www1.umn.edu/news/news-releases/2011/UR_CONTENT_343439.html

I hope that Mr. Rossi and his team becomes aware of this.....

Maurizio

June 23rd, 2011 at 11:55 AM

Egregio Signor Rossi.

Complimenti per i risultati ottenuti e per quelli che verranno.

Non so se si è reso conto dell'importanza di tale tecnologia, che lei ha creato.

Grazie a tutto questo, si creeranno innumerevoli nuovi posti di lavoro in tutto il mondo, ci saranno milioni di ecat in tutte le case/aziende.

Posso solo dire grazie e continui così, senza badare a commenti poco opportuni.

Resterò in attesa di ulteriori novità su prezzi, disponibilità ecc.

Buone cose.

pana

June 23rd, 2011 at 10:51 AM

egregio Signor Rossi, lei è stato perseguitato dalla giustizia italiana con tanti processi ed è poi volato negli Usa dove si è riscattato fondando la Leonardo Corporation, ma perche allora torna in Italia per sviluppare l E-Cat? io anche solo per ripicca sarei rimasto negli Stati Uniti e avrei collaborato con le universita americane.

Oggi avete un presidente proiettato nel futuro e illuminato come BARACK OBAMA (in maiuscolo per il max rispetto)che ha detto chiaro e tondo "invece di sussidiare l'energia del passato , investiamo nell energia del futuro " credo proprio che siamo all'alba di una nuova era negli States, non piu guerre per il petrolio ma energiapulita a basso costo..

Che differenza con al nostra classe politica cosi chiusa su se stessa e sorda ai nuovi sviluppi, ma lo sa che CARLO RUBBIA lo hanno mandato via perche ha litigato con Scaloja? ora è in Spagna dove sviluppa il solare a concentrazione..

auguri e buon lavoro

H. Hansson

June 23rd, 2011 at 7:52 AM

Dear giovanni guerrini,

It is quite clear that you thought much and long on this issue. Although this invention will eventually be accepted as the most essential invention since the discovery of the wheel.

However, it will Initially means that the old balance will not work anymore. Historically, we know what that means: WAR!

Stavitskiy Igor

June 23rd, 2011 at 7:28 AM

Dear Mr. Rossi,

my partner, prof. Lebedev, general director of Russian Technical and Scientific Center of Expertise and

Projects, which works in the sector of nuclear power, took an interest in Your invention and would be interested to be invited in Your presentation of prototype in October (Italy).

Apart of this, there could be proposal on collaboration in the way of certification of your E-Cataliser.

Please, contact me to arrange a meeting in Italy or where it is convenient.

Best regards,
Igor Stavitskiy

giovanni guerrini

June 23rd, 2011 at 4:53 AM

Possibili effetti economici e sociali conseguenti la tecnologia da reazioni nucleari a bassa energia.

EFFETTI ECONOMICI E SOCIALI.

L'avvio della produzione di energia a basso costo senza oneri futuri di ricadute ambientali e smaltimento scorie, definisce indubbiamente l'avvio di una nuova era.

In uno scenario globale di stallo economico per mancanza di spazio di crescita l'abbattimento progressivo dei costi della filiera energetica sulla produzione industriale, genera risorse per investimenti per l'apparato produttivo e l'ottenimento da parte dei consumatori di nuova disponibilità economica per l'abbattimento delle spese in energia. Nei paesi come Cina ed India in cui lo sviluppo è rapido e massivo questa nuova risorsa va a soddisfare la fame energetica svincolando dai freni del protocollo di Kyoto, accelerandone l'arrivo ad un tenore di vita ai livelli dell'occidente. Giungendo così allo stesso futuro stallo economico in cui oggi noi ci troviamo. Attualmente si è visto chiaramente, dalla crisi dell'autunno nero del 2008, come il tentativo di drogare i consumi attraverso l'apertura di linee di credito ai consumatori sia alla lunga (e neanche tanto) fallimentare e dannoso alla società. Come del resto la erogazione di incentivi pubblici al consumo che scaricano sulla collettività il sostegno alle industrie creando un effetto di feedback di stallo ancora maggiore, anche per la ulteriore saturazione di un mercato già poco recettivo. Oggi il terzo mondo detiene la maggior parte delle risorse energetiche e fino ad ora l'occidente industrializzato le ha controllate colludendo con i vari dittatori di questi paesi. Ma si è visto bene negli ultimi tempi come l'avvento della libera informazione e comunicazione, grazie ad internet, stia generando una reazione a catena evolutiva e di presa di coscienza organizzata tra i giovani in quei luoghi. Certo, continueranno anche i futuri governi democratici a scambiare idrocarburi con tecnologia e know how, ma l'ottenimento di queste risorse non sarà mai più sotto il nostro diretto controllo. Nella transizione all'utilizzo di questa nuova tecnologia energetica, il terzo mondo potrebbe utilizzare le residue risorse derivanti dal petrolio e gas per evolversi scolarizzando le masse e poter così in una generazione parificarsi al nostro mondo divenendo quindi sì un competitor, ma nel contempo anche un nuovo enorme mercato. Questo porterebbe anche ad interrompere il flusso migratorio da questi paesi che sta divenendo sempre meno sostenibile.

STRATEGIE.

Vediamo ora quale potrebbe essere una opportuna strategia delle nostre imprese a fronte di questa nuova tecnologia.

Abbiamo già considerato come l'abbattimento dei costi della filiera energetica porti alle imprese nuove risorse. La natura intrinseca della tecnologia delle reazioni nucleari a bassa energia, porta alla possibilità dello stravolgimento del sistema produttivo e distributivo della energia. Da un sistema di produzione centralizzata e distribuzione canalizzata, si passerebbe ad un sistema a rete. Tutti potrebbero produrre energia immettendola in rete e attingere da essa col sistema dello scambio sul posto. I primi reattori avranno la capacità di 1Mw, ma ricordiamo che sono composti da moduli da 10Kw. Le imprese dovrebbero essere le prime ad avviare il processo dotandosi, anche societariamente, di queste macchine stipulando accordi con il GSE in quanto anche in assenza di contributi la vendita di energia così prodotta sarà altamente remunerativa. Quindi altre risorse per le aziende. Questi nuovi capitali possono essere ripartiti tra la diminuzione del prezzo del prodotto finito, alimentando così i consumi, ed investimenti in ricerca e sviluppo di alti contenuti tecnologici. In particolare la ricerca sulla robotica e informatica (vedi ricerche giapponesi e computer quantici e organici), avviando così un mutamento nel sistema produttivo che porti ad aver meno lavoratori, ma più specializzati e meglio pagati donando un bilancio positivo alle aziende in termini di costi di mano d'opera. Negli ultimi 20 anni il potere di acquisto dei lavoratori è diminuito anche per il presentarsi sul mercato di una offerta di mano d'opera a costi inferiori proveniente dall'estero, oltretutto culturalmente e per necessità poco propensa a reimmettere nel circuito economico il proprio salario destinandone una parte ad aiutare i familiari in madre patria. Il cambio di strategia sopra descritto porterebbe alla inversione di questo processo brevimirante, migliorando le condizioni economiche dei lavoratori e la solidità delle aziende per ripresa dei consumi.

CONCLUSIONI E RIFLESSIONI.

La domanda iniziale è se siamo al cospetto dell'inizio di una nuova era. Era di che cosa? Come è fatto l'universo e come funziona? E con esso i sistemi umani. E' governato dal caos e dal caso probabilistico della visione quantistica, o vi è una intelligenza immanente (come si potrebbe pensare dimostrando la teoria delle stringhe) che governa se stessa evolvendo la materia in modo automaticamente intrinseco, portando alla nascita di quella autocoscienza in grado di raccontare se stessa di cui l'uomo è la massima espressione che conosciamo?

Se vediamo l'universo organizzato ed intelligente e non casuale, possiamo definirne il suo stato iniziale non come "caotico", ma come semplicemente "agitato" e nella agitazione vi è conflitto, mors tua vita mea, nella logica naturale della trasformazione di ogni cosa.

Così accordata da queste leggi la vita si evolve attraverso il conflitto della agitazione cosmica, donando vantaggio all'individuo più forte e più adatto così che possa prevalere anche sul suo simile, homo homini lupus, divenendo sempre più potente grazie al vantaggio evolutivo più grande, l'intelligenza. Questo è male? E' bene? O semplicemente non è né l'uno né l'altro, ma solo è così. In fondo nulla si crea nulla si distrugge, semplicemente tutto si trasforma.

Appare evidente come nel suo iter evolutivo l'universo divenga sempre meno agitato (entropia), quindi sempre meno conflittuale. Se l'uomo è parte di questo, e lo è, allora ciò vale anche per i sistemi umani. Fino ad oggi il sistema socio economico ha funzionato seguendo le naturalissime leggi del conflitto, generando il più grande strumento di potere, il danaro, quindi il capitalismo, il consumismo, nella logica intrinseca e necessaria della crescita economica. Questo perché i più "forti" detengono il controllo delle risorse che necessitano ad ognuno. Tutto ciò è estremamente naturale, infatti questo sistema ha vinto sul tentativo comunista di governo della società in quanto era semplicemente innaturale, forzando l'uomo verso un sistema di giustizia sociale per il quale non era ancora pronto. Marx stesso, nelle sue premesse, fu molto chiaro nel dire che un sistema socioeconomico di equilibrio tra risorse e consumi e moralmente equo, sarebbe potuto funzionare solo se la società fosse composta da una massa critica di uomini "adulti". Cosa rende adulti, l'età? La capacità di essere più lupo di un altro lupo? Sappiamo che non è così. Penso che intendesse l'aver raggiunto il grado evolutivo che consente di essere ciò che definiamo come "umano". Quindi la consapevolezza di essere un tutt'uno con il tutto, il sentire l'esterno a sé, quindi anche l'altro, senza soluzione di continuità con sé stessi. A ciò abbiamo dato un nome, amore, e tutti gli uomini che sanno e sentono questo sono coscienti che Dio è amore e amore è dio, l'universo è dio, l'universo è amore e così via per l'attimo eterno.

La tecnologia, frutto della intelligenza, ci ha globalizzati e sempre più l'evoluzione della specie umana riguarda le masse e sempre meno l'individuo nel suo particolare ambiente, perché l'ambiente di ogni entità è divenuto il pianeta.

Nuova era? Sì. Per questo dobbiamo imparare sempre più a ragionare in termini collettivi, per il bene comune, perché in questo scenario l'unico bene dell'individuo sarà sempre più solo il bene di tutti. Forse i nostri nipoti o pronipoti, vivranno in un mondo naturalmente libero ed equilibrato scaturito da un processo in cui le macchine facevano macchine, l'energia abbondava e le risorse e i mezzi di produzione non rendevano più danaro, quindi potere, in quanto gli uomini si trovarono disoccupati in massa sostituiti da quella meccanizzazione voluta dalla produzione in quanto allora remunerativa. Disoccupati in massa con un sistema produttivo efficiente ed autoalimentato.

E così non resterà che far arte, filosofia, scienza ed ingegneria, ché fatti non fummo a viver come bruti ma.....

E l'amar il prossimo tuo come te stesso, sarà il più grande vantaggio evolutivo, in un mondo globalizzato ed estremamente potente.

E il lupo giacerà con l'agnello...

Ringrazio per lo spazio e l'attenzione. Saluti.

Andrea Rossi

June 23rd, 2011 at 1:19 AM

Dear Nick Pourmi:

1- no

2- no: we need one more year to make electricity.

Warm Regar4ds,

A.R.

Andrea Rossi

June 23rd, 2011 at 1:12 AM

Dear Maryyugo,

If you go to the Focardi-Rossi paper you will find the same tests that Prof. Levi eventually made to replicate them. During the work of Levi he made operations we deem confidential, this is why we have to make some cut that now I have not the time to make.

Warm Regards,
A.R.

Andrea Rossi

June 23rd, 2011 at 1:07 AM

Dear Bob Dingman:

Dr Brian Ahern and his team have a strong preparation , and they do not need my help. I believe they will be first in the race to be my competitors in the market.

Warm Regards,
A.R.

Bob Dingman

June 22nd, 2011 at 10:42 PM

Dear Senor Rossi:

Concerning the test cell of Brian Ahern, Congratulations to Brian on achieving something the Pons Fleishman apparatus to date never has: Repeatable independent verification of results.

Senor Rossi, Would you be so kind as to suggest a minor modification to the apparatus of Brian Ahern that will give a substantial boost to the heat output? Such a modification need not give away the key, but may prove useful to demonstrate to the dim witted or to the dishonest that you are the true discoverer of this phenomena. Also, what are the limiting factor(s) in his apparatus?

Best Regards,
Bob Dingman

Nick Pourmi

June 22nd, 2011 at 4:50 PM

Dear Andrea Rossi,

Relating to your last efforts to generate electricity from your E-Cat, here's a recent link that MIGHT interest you for a potentially future collaboration:

http://www1.umn.edu/news/news-releases/2011/UR_CONTENT_343439.html

With best wishes, from Romania,
Nick Pourmi

Keith Thomson

June 22nd, 2011 at 3:06 PM

I thank you for the many years of work you have dedicated to bringing this Technology forward. From the indications shown in early experiments you recognised the potential for what could be developed, you have found a method of producing a viable powdered fuel, nano-powder nickel modified with a bit of magic (chemistry), you have selected a device size that could be combined with a control method to produce a safe stable heat source, you have developed a "cold fusion" device to the point of introduction to the mass market, congratulations.

Once the 1 MW E-Cat module is successfully demonstrated in October, showing a new heat source that could be of a lower cost than all other fossil fuels, there will be great demand for the E-Cat units, this demand will

rapidly outstrip supply.

Would you give consideration to persuading your industrial partners to direct early production E-Cat's towards hospitals, schools, care homes for the old, and other government facilities, hospitals require heat for buildings, heat for laundries, steam for sterilisers, the costs of heating all these facilities compete with the services they provide, as energy costs escalate so services tend to be cut, with the E-Cat governments could cut energy costs to provide more services. This would go a long way towards your wish of helping the younger generation.

Directing E-Cats towards government facilities will give them an incentive to introduce this technology to the mass market, it gives them an incentive towards relaxing any restrictive legislation / industrial standards or at least guiding the E-Cat through them, in comparison to industrial plants government facilities have a lot less technical specifications and are more likely to take "of the shelf" E-Cat modules, many large industrial users will demand custom built heating units complying with extensive technical specifications, regarding how they want pressure systems built (specific pressure codes ASME VIII / AD 2000 or other), they will direct you to specific suppliers of pumps, motors, valves, controls (they have single source agreements), also how the controls will have to interface with their plant software, they also employ contract engineering companies to engineer and expedite, all very time consuming and not always profitable.

Government facilities are also less likely to have people who will interfere with the E-Cat units or pass them on to third parties.

Fergal

June 22nd, 2011 at 1:00 PM

Dott. Rossi,

I know you are busy but you might be interested in this new alloy for harvesting electricity from waste heat:
http://www.eurekalert.org/pub_releases/2011-06/uom-uom062211.php

Best of luck.

maryyugo

June 22nd, 2011 at 11:37 AM

Dear Mr. Rossi,

Thank you for the reply. I have difficulty understanding why the actual data used to calculate energy balance in the Rossi-Focardi paper (or in similar experiments in which the E-cat heated liquid water rather than produced steam) can't be released now. Surely, the data exist and were preserved. Can you say why you won't provide these data or encourage Dr. Levi to do so? And then I promise to leave you alone about this issue 😊

Thanks and best wishes for progress with your work.

M. Y.

eernie1

June 22nd, 2011 at 11:34 AM

Dear Sari;

I am an 80 year old well educated retired millionaire who worked in research and development for more years than you are old. I also served in the US army during a shooting war and am proud of my service record and those who served then and now. Most of my friends are well educated rich and influential. My son is a doctor and my daughter a vice president for a large corporation and both richer than I. If anyone is more proud and appreciative of our country I have not met them. You cannot find enough intelligent people on welfare or unemployed to propagate any complex bit of technology (15% of population). If you want to publicize this method of power production, have Rossi issue an IPO to the investment public. I guarantee that the word will spread rapidly. Do not let your ideology get in the way of reality. You should be proud of your service record and I appreciate all you have contributed.

Nick Pourmi

June 22nd, 2011 at 10:24 AM

Dear Andrea Rossi,

In a response on this blog to Paul Segers you disclosed that "In the USA we are manufacturing other 2 plants of 1 MW of power."

1. Are you allowed, in regard of your agreement with partners, to reveal the location of the 1 MW plants in the USA?
2. Under the agreement, are you (or your partners) trying to produce electricity (at least) in the second plant?

Congratulations on choosing wisely – the path of showing the world a real, working product and not arguing with theoreticians in futile considerations. I profoundly appreciate your everyday hard work.

With deepest gratitude,
Nick Pourmi

P.S. "Those who say it cannot be done should not interrupt those who are doing it." (George Bernard Shaw)

Andrea Rossi

June 22nd, 2011 at 10:01 AM

Dear Marcia Pires:

Yes, we can modulate the power. About the steam plume: if the steam is dry, it is also not visible.

Warm Regards,
A.R.

Andrea Rossi

June 22nd, 2011 at 10:00 AM

S\Dear Michael Cox:

Sure, I will participate. I do not know what will happen, I just will stand by my Customer.

Warm Regards,
A.R.

Andrea Rossi

June 22nd, 2011 at 9:58 AM

Dear L.

Send to me

info@leonardocorp1996.com

your questions.

I will help you.
Warm Regards,
A.R.

Andrea Rossi

June 22nd, 2011 at 9:56 AM

Dear Charles Richer:

Send your paper to

info@dpinformatica.it

Warm Regards,
A.R.

Charles Richer

June 22nd, 2011 at 9:50 AM

I have a very preliminary paper to submit for discussion. What is the best method?
Merci.

L

June 22nd, 2011 at 9:21 AM

Dear Mr Rossi.

If I want to get my PhD in LENR, and unfortunately I cant move to Bologna, where do you suggest I go within the U.S.

Thank You Kindly,

L

michael cox

June 22nd, 2011 at 8:38 AM

Mr. Rossi,

will you be present tomorrow at the Defkalion press conference? What will be the matter of the conference? Will there be a video live streaming of the event somewhere?

Regards

Marcia Pires

June 22nd, 2011 at 8:14 AM

Dear Andrea Rossi,

Thank you for your kind answer! Your openness and objectiveness is surely overlooked by the Snakes and Clowns! I can see you have sincere interests in helping suffering children... But if a child wants to see your e-cat working, he might get burned with that fast steam! 6m/s! Children may be injured! So, can you decrease the speed of the steam to show the children how the e-cat works?

Although a normal 2500KW e-cat have a slower steam, it must be 3m/s? If you can reduce the speed, how much can you reduce it and for how long before the reactor overheats? After all, there might be a class of very curious children, and they like to see with attention!! Maybe you could put a valve for controlling the exit speed?

Best wishes,

Marcia Pires.

Sari (Patricia) Swensen

June 22nd, 2011 at 2:12 AM

Dear Eernie1,

Unfortunately you are not speaking with the intelligent United States Citizens. Most likely you are speaking to those that sit wastefully on welfare, while us hard-working taxpayers take on their useless burden. I suggest that you find better friends. The real reason that Americans don't seem to care, is because our media has yet to mention this. Our media if you could call it that, seems to only care about someone's hairstyle or clothing. It disgusts me! I have made it my sole endeavor to enlighten all around me of this scientific advancement. I will continue to do such & will take on all of the "doubters" thrown my way. Please look at the link that I posted here earlier, a video that cost me days to make in order to spread truth. I beg for you not to make a summary of us "Americans" as we are all very much different. I served my country honorably for 8 years in the military, I am very proud of the majority of our citizens... appalled by our media.

Andrea Rossi

June 22nd, 2011 at 1:36 AM

Dear Maryyugo:

In the R&D program of the University of Bologna they will make a lot of this stuff. Gotta get fun.

Warm Regards,
A.R.

Andrea Rossi

June 22nd, 2011 at 1:32 AM

Dear Dr Joseph Fine:

As I said to another Reader, I would have to explain how the reactor works to answer...Ni doesn't reach the melting temp., with exception of some of it, where it has to...stop.

About the "question time": you are right, is very difficult, this is why I can't answer more times to the same questions: our Readers must be patient and when they do not find their questions approved, means I already answered to the same question many times, all they have to do is read the blog.

Warm Regards,
A.R.

Andrea Rossi

June 22nd, 2011 at 1:28 AM

Dear CJC:

Please do not change your programs regarding the purchase of a heating system for your household, because for such application we need more time, mainly for the certifications. We will start with industrial applications, starting from 1 MW power plants.

Warmest Regards,
A.R.

Andrea Rossi

June 22nd, 2011 at 1:24 AM

Dear Paul Segers:

To answer to your questions I should disclose confidential infos. Sorry.

Warm Regards,
A.R.

Paul Segers

June 21st, 2011 at 11:07 PM

Dear Mr. Rossi,

I was hoping you could answer a few quick questions. You stated the following in a recent post:

"The operating temperature inside the reactor reaches 1,600 Celsius. We are working hard to make also electric power, it is not far from now the moment we will be able to."

- 1) I thought you said earlier that for safety reasons, the reactor did not exceed 500 Celsius?
- 2) Isn't the melting temperature of nickel about 1,450 degrees Celsius? I thought you stated that the nickel melting would be very bad.
- 3) What methods of electricity generation are you currently researching? I thought you already had that all figured out, with a set price and everything.

Thanks,

Paul

CJC

June 21st, 2011 at 9:38 PM

Dear Sir-

I think it important for you to know that I have been postponing the purchase of a new furnace and air-conditioner for our home (though they are both desperately needed) in anticipation of your alternative. I appreciate your proceeding with the introduction of the machine in spite of the feet dragging going on at the patent office. I hope to be first in line when they are available. Could I trouble you to respond with the information necessary for me to purchase it when it does indeed become available. Please send it directly to my e-mail address. Keep your chin up and please know the masses are hungry for this and it will be welcomed. Get the word out as best you can for the more of us that are aware the harder we will be to defeat! God bless, CJC

Joseph Fine

June 21st, 2011 at 6:39 PM

Andrea,

You told Olaf M. that the operating temperature in the reactor reaches 1600 degrees Celsius. Is that normal operation or just before or after it melts or explodes (heaven forbid), or did you mean the temp. reaches 1600 degrees Kelvin (or 1327 degrees C). Nickel melts at 1455 degrees Celsius, and without going into principles of operation, Nickel would be liquid at 1600 degrees C.

By the way, how do you manage to do all of your work, answer all of your readers (both here and on Facebook) and deal with your "Esteemed or Steamed" visitors?

J.F.

Manik Sahai

June 21st, 2011 at 6:31 PM

Dear Andrea Rossi,

Congratulations on your fantastic invention & discovery! Best wishes from the land of rishis and munis -the scientists of ancient India (who researched and discovered the fantastic biological energy of KUNDALINI in humans linked to consciousness).

It seems you have solved one of the grand challenges for engineering in 21st century as identified by USA's National Academy of Engineering

- * Make solar energy economical
- * Provide energy from fusion
- * Develop carbon sequestration methods
- * Manage the nitrogen cycle
- * Provide access to clean water
- * Restore and improve urban infrastructure
- * Advance health informatics
- * Engineer better medicines
- * Reverse-engineer the brain
- * Prevent nuclear terror
- * Secure cyberspace
- * Enhance virtual reality
- * Advance personalized learning
- * Engineer the tools of scientific discovery

<http://www.engineeringchallenges.org>

Now only 13 other remain. Other than the magnitude of the potential impact of your invention i am really impressed about the way you are dealing with your interactions with people and how solidly you are following the correct process of revealing to the world. I have also seen other claims on the internet of exotic forms of energy but your invention is worlds apart from them – firstly you are very near commercialisation – secondly you have support of many teams of people – with many investors backing you (through defkalion and ampnergo)- thirdly believing in taking everyone together with integration of all the existing energy technologies for solving energy problems of humanity-

basically as i see it with this new invention a new kind of ecosystem has to evolve leading to creation of jobs for millions of people in all the different countries-many hundreds of companies being setup to cover the different functions necessary for the heavy demand-many new kinds of applications being developed.

I was just wondering:

Do you foresee the applications and ways in which your invention could fuel new series of scientific

breakthroughs to solve these other challenges of the 21st century?

Do you foresee a new wave of innovation and scientific discoveries emerging from the breakthrough you have attained?

I am also seeking your opinion on a philosophical matter: what is the basis of scientific discoveries? what factors could enable the emergence of new inventions and discoveries on massive societal basis? Is it really just creative persistent hard work coupled with luck and intuition that a discovery happens? Is continuous trial and error the best way to stumble upon something new? What has been your personal process of discovery? I am asking like Einstein had intuitive imagination – his thought experiments – which he converted to mathematical equations – the ability to think and experience a perception like no one has ever done before. Similarly for Newton, Faraday, Tesla. Or Ramanujan the mathematician had so much intuitive flashes of genius that he attributed to some goddess telling him in dreams.

Anyways I just wanted to tell you I have become your biggest fan. And since I see myself as a future researcher and scientist I wanted your opinion on a most important field of research in the coming decades – relating to consciousness – kundalini, yoga and tantra. Some important seminal work has been done by eminent researchers, scientists and sannyasins. For example the following seminal book (Kundalini Tantra)

<http://www.amazon.com/Kundalini-Tantra-Re-print-Satyananda-Saraswati/dp/8185787158>

by Swami Satyananda Saraswati of Bihar School of Yoga

describes the whole process of genius and altered states of consciousness as a side-effect or by product of awakening of kundalini energy in human biological system.

some excerpts:

“Kundalini Yoga is a part of the tantric tradition. Even though you may have already been introduced to yoga, it is necessary to know something about tantra also. Since ancient times, the wise have realised that mind can be expanded and that experiences do not necessarily depend on the object. This means that if somebody is playing music, I can hear it, and if somebody has painted a picture, I can see it, but I can also see if there is no picture, and I can also hear if there is no music. This is also a quality of man's personality which has been ignored in the last 150 to 200 years.”

“Everybody should know something about kundalini as it represents the coming consciousness of mankind. The present consciousness of man is dependent on the senses and the objects, but beyond that is the power of kundalini. Kundalini is the primal power which is in every human being. It is situated at the root of the spinal column, at the coccyx or tailbone. In the masculine body it is in the perineum, between the urinary and excretory organs. In the female body its location is at the root of the uterus, in the cervix.”

“In the course of his investigations, man came to understand that within every individual there is a special form of energy. He saw that in some people it was dormant, in others it was evolving and in a very small minority of people, it was actually awakened. Originally, man named this energy after the gods and goddesses. Then he discovered prana and called it prana shakti. In tantra they called it kundalini.”

“Yoga and tantra have been stressing time and time again, that within the human being there is an inherent intelligence which is known as kundalini. This kundalini is the sleeping consciousness which exists in every human being, and each person has the chance to awaken this potential divine force. The ordinary mind is controlled by sensory experiences, but with the awakening of this great shakti known as kundalini, man's consciousness undergoes a process of metamorphosis. When the elements of the mind are transformed, the quality of knowledge is extraordinary.”

“There are many souls who are born with awakened kundalini, they are the prophets and saints, inspired artists and musicians, poets and writers, clairvoyants and messiahs. Their quality of mind, behavior and consciousness is exceptional. There are many different processes of the mind, involving both progression and regression. For example, some children become retarded, and in others, the brain regresses and they are sent to mental hospitals. On the other hand, in some children there is a sudden progression in the mental development and they become brilliant.”

“With the awakening of kundalini, the greater intelligence is aroused from its sleep and you can give birth to a new range of creativity. When kundalini awakens, you are not only blessed with the vision of God, you could become a brilliant designer, a wonderful cook, an excellent father, husband, wife or son. Or you could become an outstanding leader, prime minister, governor or president. Therefore, the awakening of kundalini affects the whole area of the human mind and behavior.”

“Kundalini is not a myth or an illusion. It is not a hypothesis or a hypnotic suggestion. Kundalini is a biological substance that exists within the framework of the body. Its awakening generates electrical impulses throughout the whole body and these impulses can be detected by modern scientific instruments and machines. Therefore, each of us should consider the importance and the benefits of awakening kundalini, and we should make a resolve to awaken this great shakti.”

The book then goes on to present a systematic and pragmatic approach to the awakening of kundalini, which

arouses greater intelligence from it's sleep and one can give birth to a new range of creativity. It talks about Tantra which derives from two Sanskrit words: Tanoti – expansion of mind and Trayati – liberation of energy exactly as in physics.

It seems Kundalini is the connecting link between all kinds of processes of discoveries by an individual on a personal and intimate level- and many questions need to be asked and answers sought, studies and researches to be made.

Well, just wanted to share some thoughts. Once again, many many congratulations to you and waiting eagerly for your technology to reach Indian shores. And looking forward to meeting you if and when you come to India after showcasing your 1 MW plant in Greece in October.

Faithfully,

Manik Sahai.

eernie1

June 21st, 2011 at 5:54 PM

To all the people who wonder why the device is not a big deal in America as of yet, my feeling is that most Americans have no problems with their energy supply. It is relatively cheap, reliable and in existence for such a long time that they regard it as a no problem situation. If it isn't broken don't fix it attitude. When I discuss it with them I get a response that can be summarized as they are interested but consider power supply a minor problem and are more worried about their jobs. The effort to change power inputs and appliances for them is more trouble than it is worth. Even the cost of gasoline is not very bothersome only a minor irritation. Most Americans don't worry about global warming, depletion of resources or environmental damage. This attitude, at least among people I talk to is prevalent and is not something to worry about. Rossi's device if found to be acceptably more advantageous, will be implemented slowly at the convenience of the general public. Perhaps business interests will be awakened first since they may consider the possible profit an incentive. This is why in my estimation light bulbs took so long to be made a standard means of producing illumination.

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