

## **Title Of The Research**

### **The Real Reason Why Plasma Cannot Be Confined & The Real Model For Inducing Ultra-High Energy Nuclear Reaction**

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This is a comprehensive and compact research paper. It contains sufficient theoretical arguments and overwhelming experimental evidences and observational data, "connecting the dots". It will be a very long reseach paper with three main parts.

#### **THE FIRST PART**

The first part will show and explain the misconceptions in the plasma theory, especially the theory of thermonuclear fusion. The most basic facts in nuclear physics and nuclear chemistry were twisted and mathematically modified in order to suit the arbitray assumptions of the 19th century Physicists and the proposal of Bethe (proton-proton and carbon-nitrogen cycle). This happened in spite of the fact there are too many evidences this type of reaction can not take place in the sun and such reaction between nuclei is practically impossible under laboratory conditions.

One has to keep in mind that interaction between nuclei at high energies will involve large angular momenta associated with strong centrifugal forces that will start playing a significant role. These forces impede a combining of both nuclei into a single system, and only allow for a boundary collision. More important, however, is why plasma components have a tendency to fly apart and cannot be contained over a sufficiently long time and why the Tokamaks have to be upgraded continuously with new heating modules. Physicists cannot understand the paradox that high energy collisions of the particles in the reactor would create new particles and new mass in the plasma instead of increasing the temperature. When the reactor plasma is heated to a high temperature, high velocity collisions will create electron positron pairs. "This is an absolute truth that will be experimentally proven in my proposed model". This problem can never be solved. This is a physical problem, not a technical one.

The other important question is weather or not the H-bomb is really based on thermonuclear reaction rather than on the mechanism of nonchain fission reaction where a large amount of uranium is irradiated at the same time by a high-intensity neutron flux (hydrogen bomb with a uranium shell). That will cause the release of a large amount of energy because of simultaneous participation of a large number of nuclei in the process.

This large amount of energy causes the deuteron to be heated to a fairly high temperature. The creation

of high energy particles where further heat will be generated which is due to the collective thermal motion of the particles, and the temperature will not be as high as what the theory of thermonuclear reaction predict.

Even though the temperature data of the hydrogen bomb blast and the laser experiment that modeled an H-bomb are kept confidential (state secret), one can calculate the temperature using well known laws like Maxwell equations and Faraday's law.

If the H-bomb is really based on the theory of thermonuclear reaction, the critical temperature of the blast is in the order of 35,000,000 Kelvin and the core temperature is in the order of 45,000,000 Kelvin, keeping in mind that the commonly believed temperature at the interior of the sun is 15,000,000 Kelvin. So the question is the following: is the hydrogen bomb explosion a self-sustained thermonuclear reaction of transient type or nonchain fission reaction type?

Recent revelations by India's nuclear scientist Dr.K.Santhanam about the failed H-bomb test, where he stated that the fusion device failed on many counts while the former device A-Bomb performed perfectly, can raise an important question.

## THE SECOND PART

The second part of this research contains extensive theoretical arguments but is also supported by so many experimental facts and observational data from different scientific fields which are related in certain areas to the basic argument of the research.

However, there are several new concepts that contradict common beliefs in physics like the relationship between mass and energy, photon properties, velocity or velocities of electromagnetic waves etc. The real model that can induce ultra-high energy nuclear reaction is presented at end of this section.

## THE THIRD PART

In this part the technical approach to verify the proposed model is presented in great detail.

That includes a concept design of the reactor with all the components such as the state and conditions of the material (fuel) inside the reactor vessel, the type of the energy beam that can best stimulates the reaction and also the type of working gas etc.

Publication Activity of the Applicant So Far:

1 - J. Mizsei, J. Shrair, I. Zolomy "Investigation of Fermi-level pinning at silicon/porous-silicon interface by vibrating capacitor and surface photovoltage measurements", Applied Surface Science 235 (2004) 376-388, 2004. /Published

2- J. Shrair, J. Mizsei, "Porous silicon on silicon: determination of interface properties by surface photovoltage and vibrating capacitor measurements" III International Seminar on Semiconductor Surface Passivation SSP'2003, Ustron, Poland, Sep 2003/published in poster form

3-J. Shrair, M. Reggente, A. E. Pap, J.Volk, A. Pongracz, Gy. Masa "Characterization of noble metal doped PSi/Si interfaces by scanning Kelvin probe, surface photovoltage (SPV) and SIMS analysis for gas sensing application|" International Workshop on Semiconductor Gas Sensors (SGS), Ustron, Poland, 10th-13th Sep 2006/published in poster form

- 4- J. Shrair<sup>2</sup>, A. E. Pap<sup>1\*</sup>, M. Reggente<sup>2</sup>, A. Pongracz<sup>1</sup>, J. Mizsei<sup>2</sup>  
“Novel method for Porous Silicon Gas Sensor Preparation Using Noble Metals”  
Submitted to Sensors and Actuators
- 5- J. Shrair, J. Mizse, A.E Pap, M. Reggente, Gy. Masa “Investigations of Pd-nanoclusters distributions in mesoporous-Si layers for H<sub>2</sub> gas sensor application” will be submitted to Applied Surface Science
- 6- Surface-Interface Characteristics of Psi-Si and Rb-Psi Structures. In process of being published. Will be submitted to the Journal of Porous Materials
- 7-Pd and Au doped P<sub>2</sub>S<sub>5</sub> Layers for gas-sensing application in process of being published
- 8- Green energy resources in the age of nanoscience technologies. Review paper in process of being written.
- 9-Green Nanoenergy Visions. Article published with the institute of nanotechnology.  
<http://www.nano.org.uk/articles/13/>, <http://www.nanonews.tv/documents/nanoforpeople.html>
- 10- Can Solid-State Nuclear Fusion Reactor Be the Ultimate Green Energy Solution. Published with Infinite Energy Magazine. Issue 88 (Nov/Dec 2009).  
<http://www.infinite-energy.com/iemagazine/issue88/index.html>  
[www.wbabin.net/science/shrair3.pdf](http://www.wbabin.net/science/shrair3.pdf)  
[www.mathaba.net/news/libya/solid\\_state\\_nuclear\\_fusion\\_reactor.doc](http://www.mathaba.net/news/libya/solid_state_nuclear_fusion_reactor.doc)
- 11-Developing an Efficient Low-Temperature Nuclear Fusion Reactor.  
<http://www.wbabin.net/science/shrair1.pdf>
- 12-The Most Civilized and Intelligent Method to Extract Nuclear Energy. Published as newspaper article. [http://www.mathaba.net/0\\_index.shtml?x=620454](http://www.mathaba.net/0_index.shtml?x=620454)
- 13-Theoretical models for developing an efficient low temperature nuclear fusion reactor using new hybrid nanostructured materials as fuel. In process of being written.
- \*The M.Sc research project involved the construction of a Cherenkov detector to investigate cosmic Muons.
- \*Currently the Ph.D thesis is experimental research in porous material and porous silicon gas sensor applications. The thesis is entitled The Significance of Noble Metals Nanoparticles for porous Silicon Gas Sensor Applications.