

Mechanism of Transmutation and Risk of its Commercialization

(Stanly Meyer's Brown's Gas Combustion can be a Real Free Energy)

Noriyuki Kodama
Independent Researcher

Abstract:- Dr. Ohmasa invented transmutation reactor to transmute tritium in tritium contaminated water from Fukushima power-plant, which electrode is Pd. He invented it after the discovery of Cold Fusion and probably he knows that Pd can transmute elements in H₂O, and he made comparison between the gas produced by his transmutation reactor and brown gas by his transmutation reactor. Transmutation reactor use the horizontal metal plates with vertical vibration to vibrate H₂O between the plate and H₂O move laterally along with metal surface after the collision on the metal surface. In Cold Fusion femto-D₂ is generated in the expandable T site in the metal surface with nano-roughness, and D⁺ is attracted by the negative charge inside Expandable T site, and D⁺ becomes D⁺, which attract another D⁺ to be D₂ in the expandable T site. By compression of D₂ transit electron of n=1 to deeper orbit at a few femto-meters from the nucleus, which is called femto-D₂. Femto-D₂ has the covalent electron at a few femto-meters from the nucleus, thus electron density between d-d is so high that it can shield coulomb repulsive force between d-d to cause Cold Fusion. In case of H₂ gas loaded in the positive metal, femto-H₂ is generated. Dr. Ohmasa's transmutation Reactor generate femto-H₂ which descends from the upper metal plate to collide the O in H₂O moving along with metal surface. He also did experiment to generate brown gas in his transmutation reactor without vibrating metal plate. In place of that, positive voltage pulse is applied between the metal plate, which is the condition of original brown gas generator by Stanley Meyer. This positive pulsed voltage also causes the vibration of H₂O and H₂O moves along with the metal surface to cause transmutation with femto-H₂ add two protons to oxygen-16, thus oxygen-18 is generated by the transmutation. And Brown gas also electrolyzes H₂O to generate H₂ and O₂. Mass histogram of brown gas has O-18 clusters and gas by the transmutation reactor with metal vibration also has O-18 cluster, which is very similar with the histogram of Brown gas.

Both Stanly Meyer's Brown gas and Ohmasa's gas by the transmutation reactor are claimed to have a free energy. The possibility is that femto-H₂ can be generated without extra energy and transmutation can generate oxygen-18 without extra energy thus the total number of oxygen increases, and the asymmetric electrode of Brown gas generator can increase the H₂ resulting in the complete combustion of all oxygen to increase the output

energy. Dr. Ohmasa claims that his OHMASA-GAS can reduce CO₂ emission when it mixed with fossil fuels and burned them in a gas turbine. Based on my Cold Fusion mechanism it is possible by the compression of O-C bond to be Si in the gas turbine.

Both of the two techniques will be used in the industry one is brown gas power generation and water-powered car. This new technology has the risk to change the isotope ratio of oxygen and reduce the oxygen on earth. Thus, I would like the governments and company to decide whether or not to accept the risk and commercialize the technology.

Keywords:- Cold Fusion, LENR, Femto-H₂, Femto-D₂, Brown Gas Transmutation.

I. INTRODUCTION

Author discovered the mechanism of Cold Fusion that femto-D₂ causes the coulomb repulsive force shielding to cause fusion because femto-D₂ is smaller molecules of D₂ with covalent electron orbit at a few femto meters from the nucleus. Author proposed transmutation reactors to generate helium-3 and oxygen-18 by the transmutation of H₂O with femto-H₂ generated in the positive metal electrode with FCC lattice.

Because water powered car has long been believed to be pseudoscience, but in recent years there seems to be a re-evaluation of it. In Japan OHMASA-GAS also has been told that it is a free energy, but official reports show that its energy efficiency is well below 100%, and there may be plans to industrialize It is claimed that mixing OHMASA GAS with fossil fuel gas and burning it in a gas turbine can reduce carbon dioxide emissions to zero.

Because Brown's gas has the potential to become a truly free energy source, depending on how it is used, and because it has a risk to change the isotope ration of Oxygen when it is used a lot commercially, I did not explain the mechanism of free energy of Brown gas in ref [1]. However Previous report on Brown gas did not include the detailed analysis of the mechanism of brown gas. However, there have been reports of plans to generate electricity by burning Brown's gas, and of cars that run on water, and here I will explain the mechanism of free energy and would like to warn of the risks of its large-scale use.

II. MECHANISM OF COLD FUSION AND TRANSMUTATION

➤ Expandable T Site on the Surface with Nano-Roughness

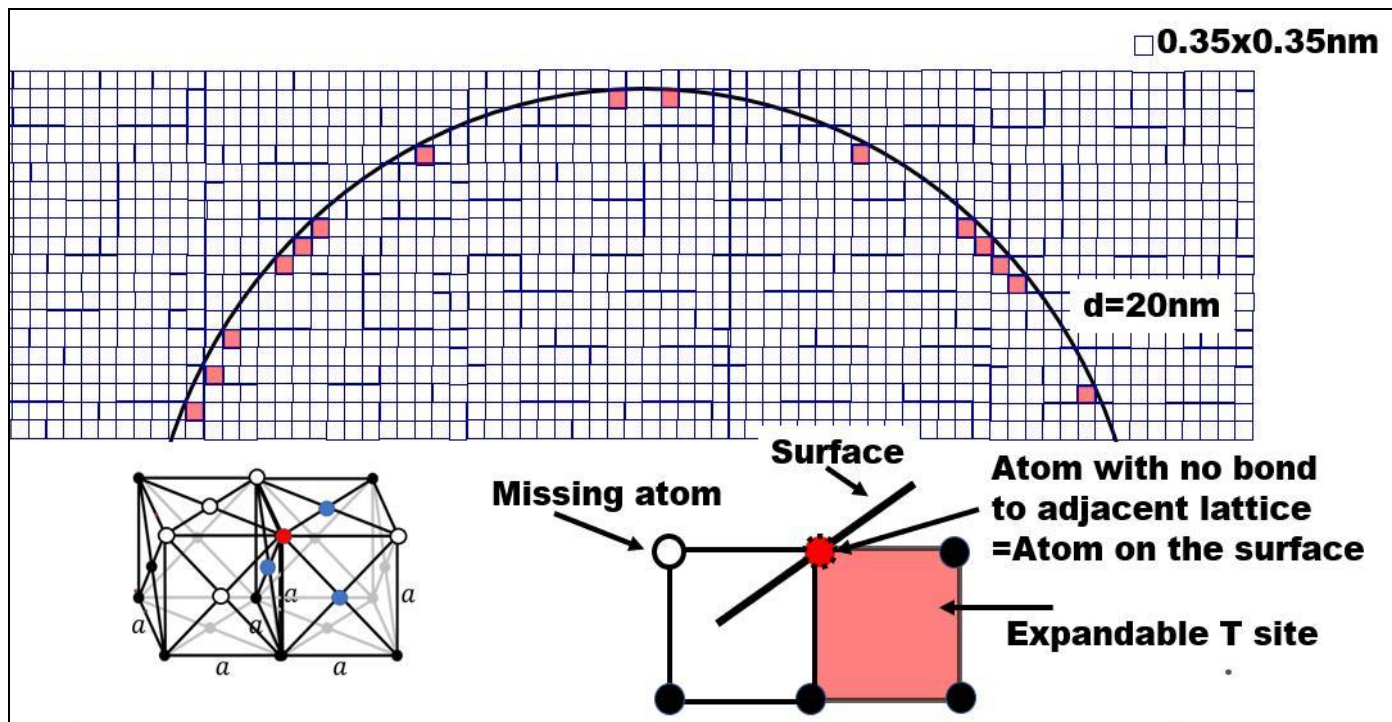


Fig 1 Expandable T Site on the Surface of Ni with Nano Roughness($r=20\text{nm}$) to show the Expandable T Site on the Surface.

I reported the new mechanism of hydrogen embrittlement based on my Cold Fusion Mechanism in ref [2], in which I explain the low temperature hydrogen embrittlement based on the volumetric expansion as is shown in this section.

Experiments have shown that cold fusion can occur on nano-roughened surfaces of metals with an FCC crystal lattice. Thus, author thought that Cold Fusion is caused by

the compression of D_2 (D-D bond) inside the space of the metal and first, the author considered whether there was a structure that would allow deuterium to be compressed as is shown in Fig.1. Vertex atom in the expandable T site (Colored) has no bond to the adjacent atom as is shown in Fig.1, so inside the expandable T site D-D bond is compressed by the nonbonding metal atoms.

➤ Femto- H_2 and Femto- D_2 Generation in Expandable T Site

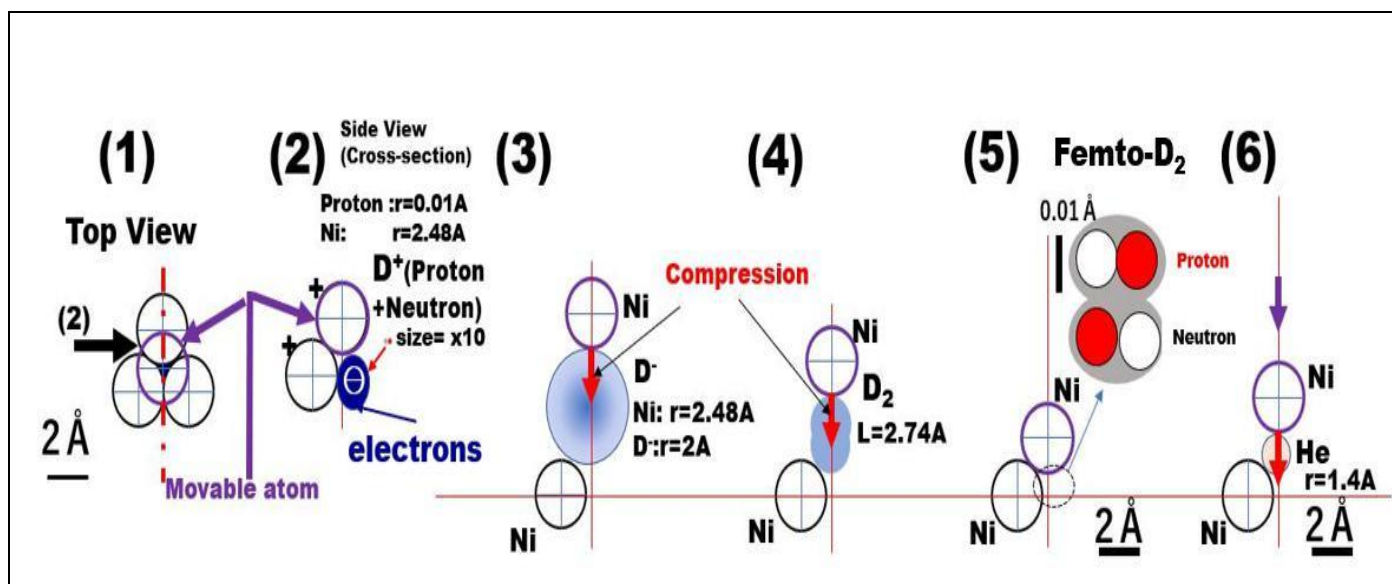


Fig 2 Mechanism of femto- D_2 Generation

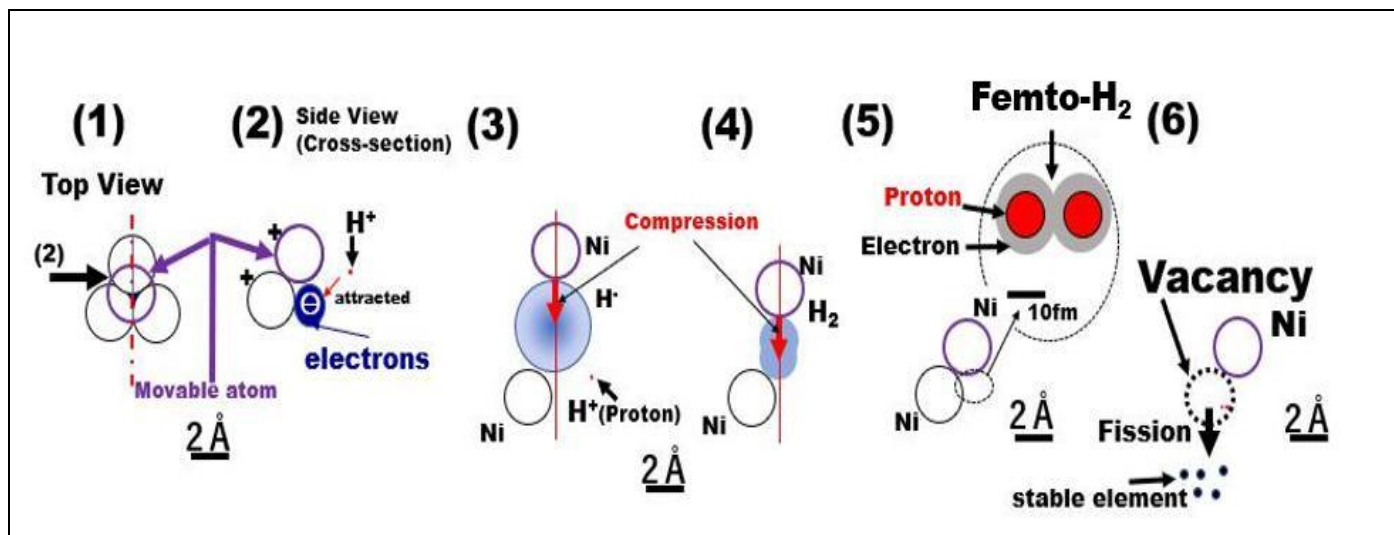


Fig 3 Mechanism of Femto-H₂ Generation

Because metal atoms tend to emit electron, center of the T site can be charged negatively, which attract positive D⁺ and D⁺ becomes D⁻ which size is by far larger than T site, and it expands the T site, and due to the negative charge of D⁻ attract another D⁺ and they combine to form D₂ molecule. Therefore, D₂ is compressed by the adjacent metal atoms to be femto-D₂; Femto-D₂ is the D₂ atoms with covalent electron in the deeper orbit than n=1, which is theoretically predicted [].

Because the electron density between d-d is so high that it can shield the coulomb repulsive force between d-d and by thermal vibration between d-d, it causes fusion of D+D.

In case of H₂, femto-H₂ is generated, and it descends by the gravity due to the no interaction between femto-H₂ and metal nucleus due to their small size. In case that the metal temperature is so high that femto-H₂ can fuse to metal nucleus and it transmute metal and generate vacancy and interstitial atom.

III. TRANSMUTATION REACTORS

➤ OHMASA-GAS Generator

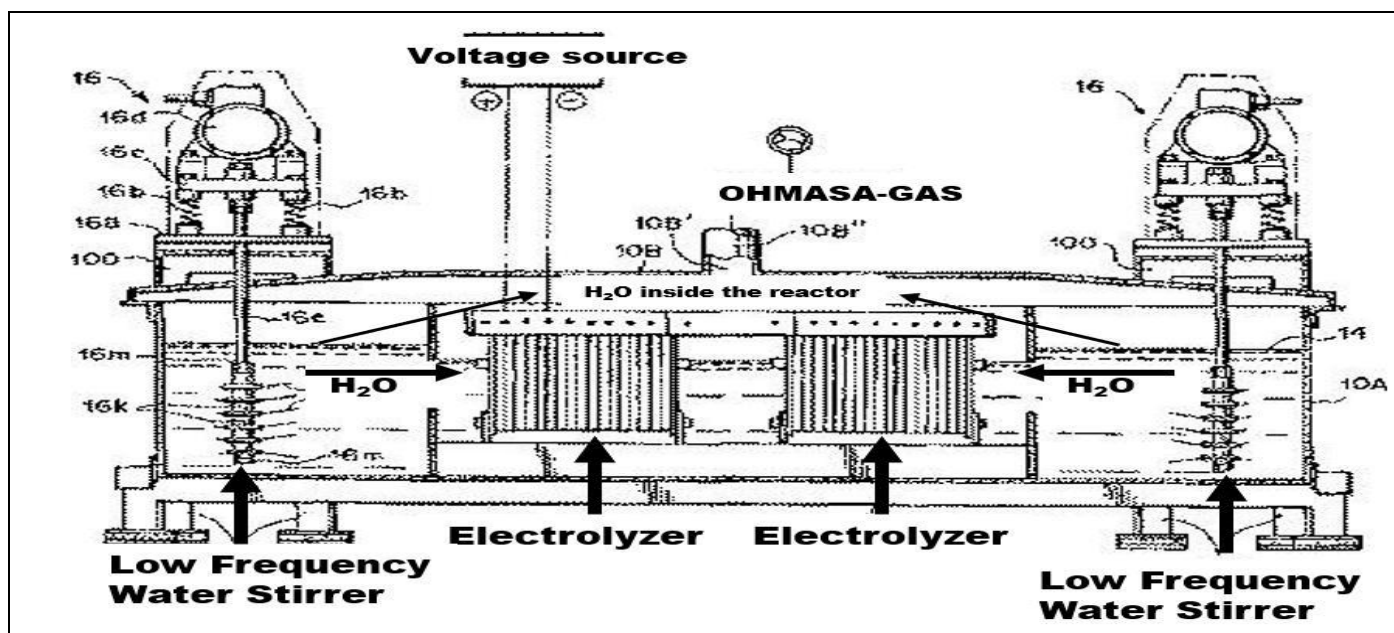


Fig 4 OHMASA-GAS Generator [3]

Fig.4 shows the electrolyzer with stirring water on left and right side to stir the H₂O to flow into the electrolyzer.

Thus, this is the high efficiency electrolyzer to generate H₂ and O₂. Note that this is not the brown gas but mixture of H₂ and O₂ gas. Ohmasa claims that this is OHMASA GAS, however I presume that this is a conventional mixed gas of H₂ and O₂.

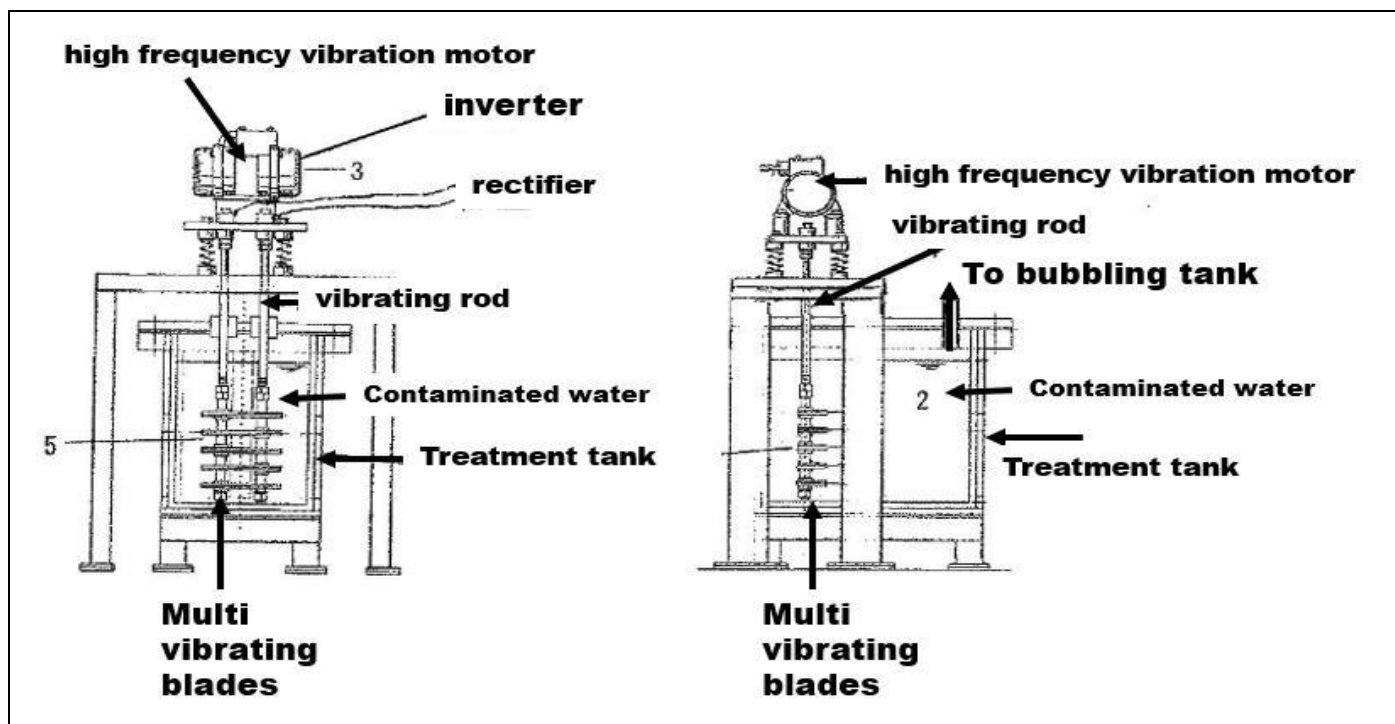
➤ *Transmutation Reactor with metal electrode vibration by Ohmasa*

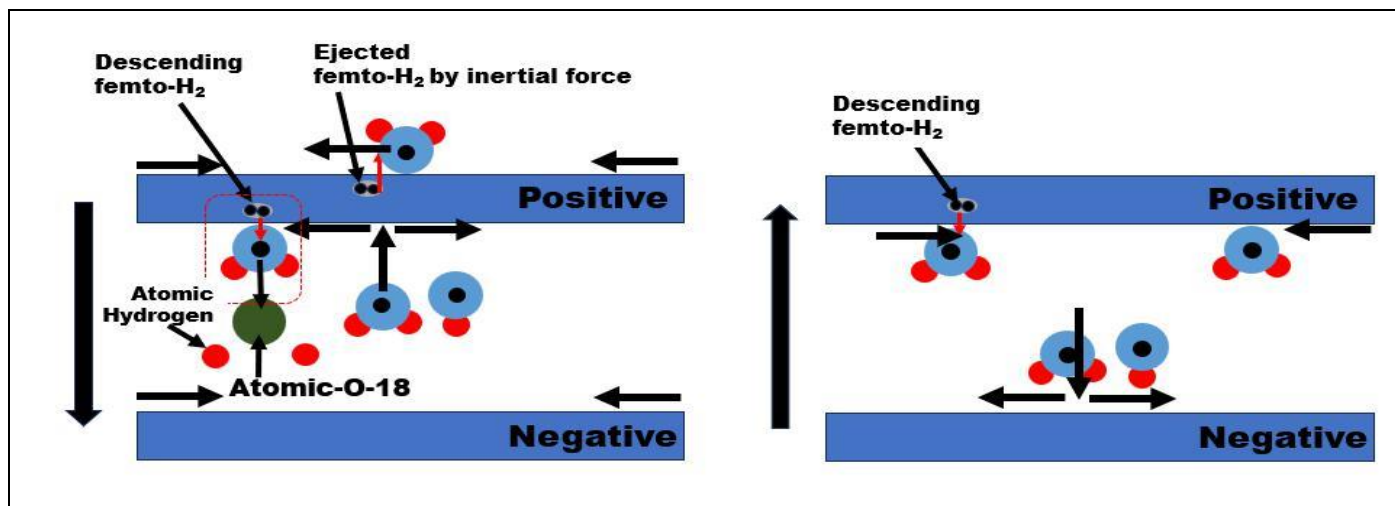
Fig 5 Transmutation Reactor by Dr. Ohmasa [4]

Fig.5 shows the transmutation reactor to transmute tritium in T_2O or THO with femto- H_2 . I call it brown gas generator because the mechanism is the same as is shown in the next section. The generated gas is brown gas contaminated by H_2O by stirring of Water.

IV. MECHANISM OF BROWN GAS GENERATION

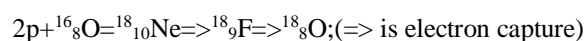
➤ *Femto- H_2 Generation*

As is shown in secII, Femto- H_2 is generated in positive metal in H_2O electrolyzer in case that positive metal has grain with FCC lattice structure. Note that some stainless steels have FCC grain.

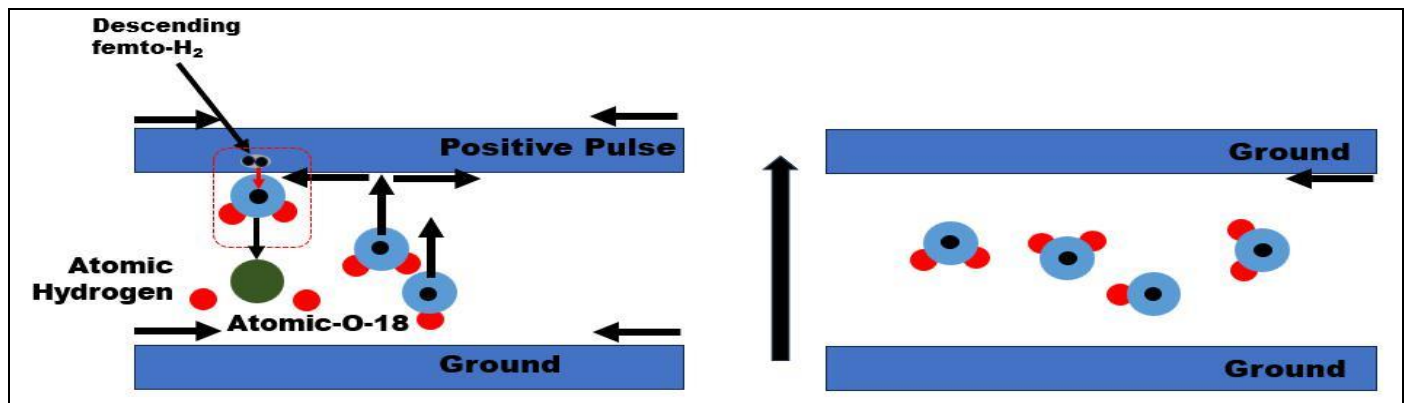
➤ *Mechanism of Transmutation by Plate Vibration*Fig 6 H_2O flow by vibration of metal plate

Because transmutation reactor by Ohmasa vibrates metal plate vertically. When it moves downward, H_2O moves upward relative to the metal plate, and it collides with the upper metal electrode, and flows along the electrode surface.

Therefore, the speed in the direction perpendicular to the descending trajectory of femto- H_2 is fast enough to collide O in H_2O and they fused to be oxygen-18.



➤ Mechanism of Transmutation by Pulsed Positive Voltage

Fig 7 H₂O Flow by Positive Pulse

Ohmura did experiment to produce brown gas in his transmutation reactor. Brown gas is generated by the positive pulsed voltage. In such case, H₂O is vibrated between the metal plate as is shown in Fig.7. Positive pulse moves HO- toward the positive electrode and so OH- moves H₂O toward

the positive electrode, and collision of H₂O onto the positive metal can move along with the surface of the positive metal plate. In case that H₂O flow is fast enough to collide the descending femto-H₂, they fuse to be atomic oxygen-18.

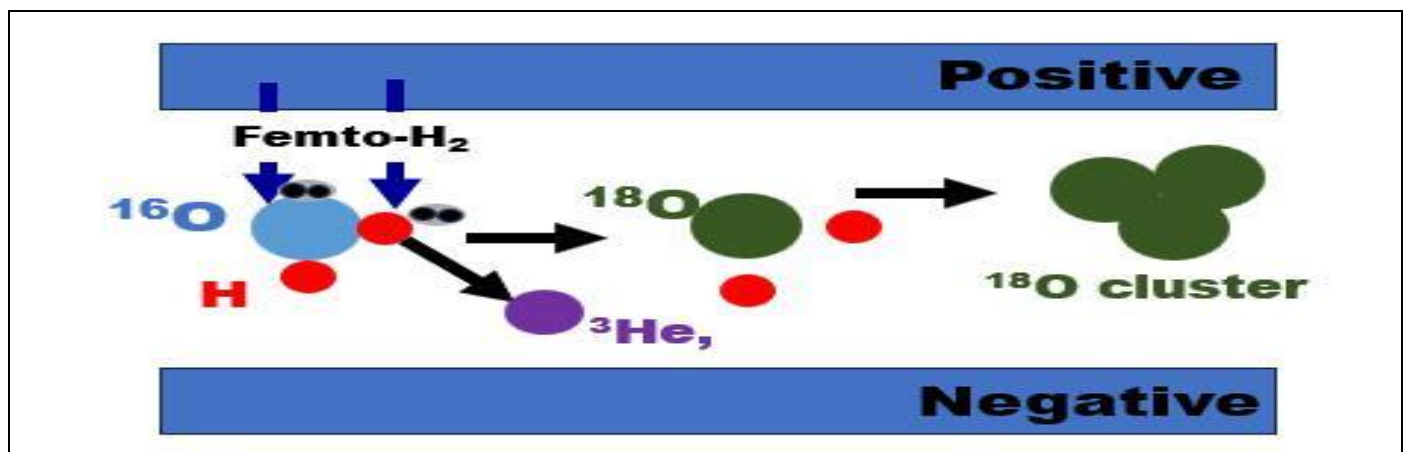


Fig 8 Mechanism of Atomic Oxygen-18 and Oxygen-18 Cluster Formation

During the transmutation of O in H₂O, O-H bond breaks and transmuted oxygen-18 is atomic, and atomic oxygen-18 can cluster.

➤ Evidence of oxygen-18 generation in mass histogram

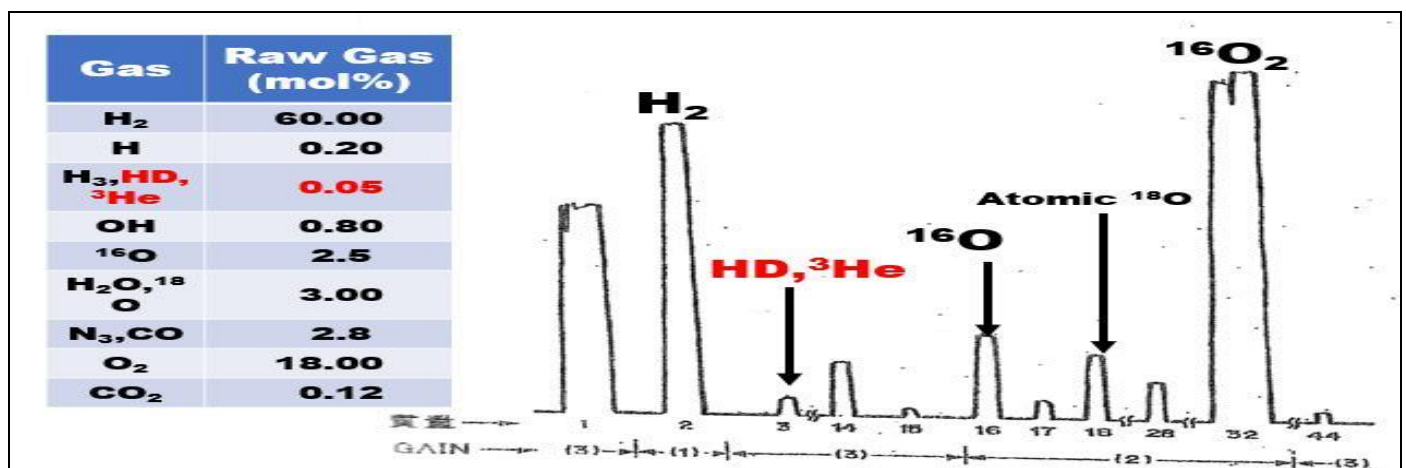


Fig 9 ICP MS analysis of gas by Transmutation Reactor

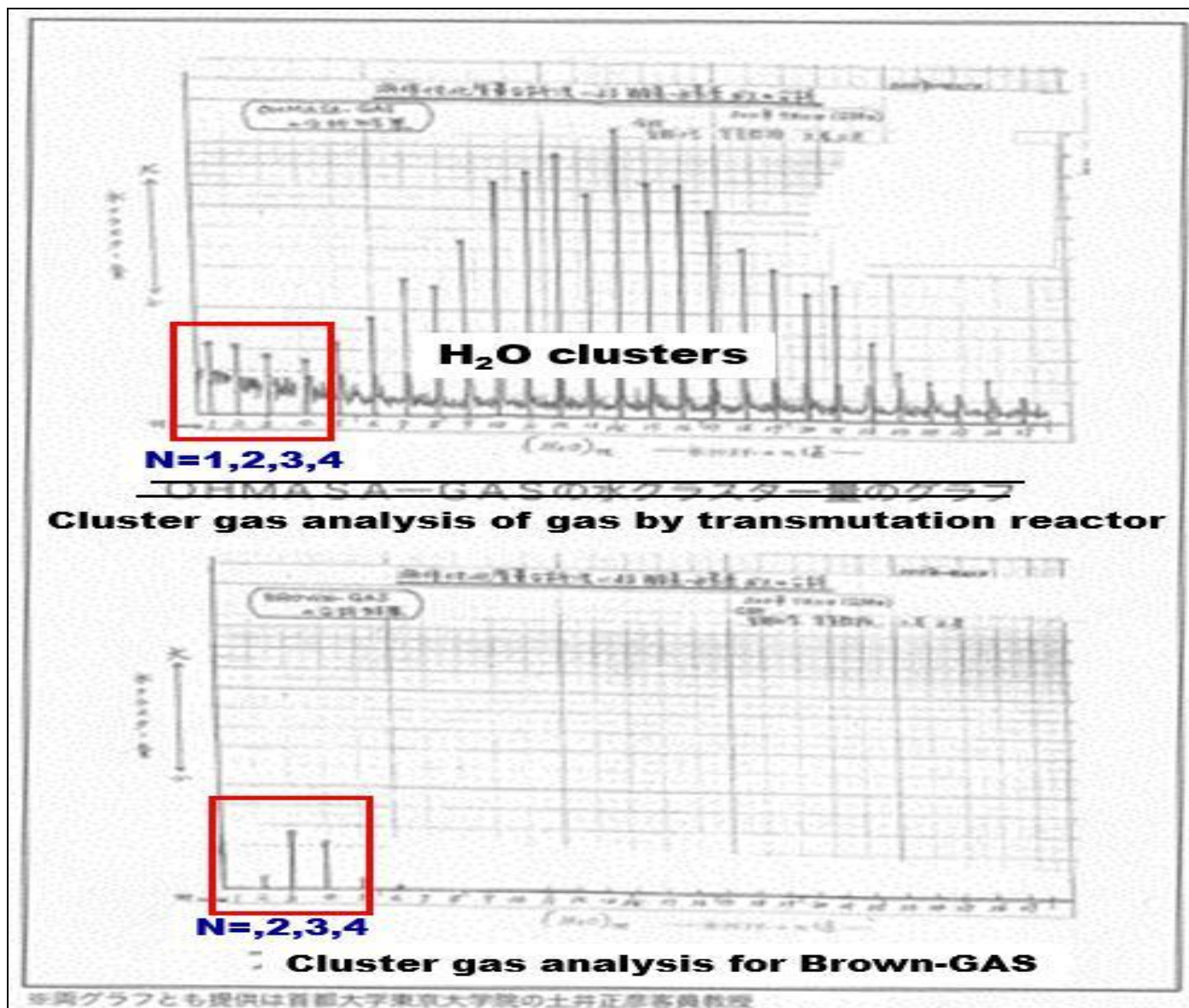


Fig 10 Cluster Gas analysis of Brown gas by Transmutation Reactor [5]

Although Ohmasa claims that his experiment is by OHMASA-GAS, I disagree with his claim because of the mass spectral of ICP MS in Fig9 and mass-18 clusters of Brown gas in Fig.10, and upper figure should be Brown gas because of the similarity of the peak of mass-18 clusters.

Upper figure in Fig.10 has the H₂O cluster because Transmutation Reactor vibrate H₂O and it cause the contamination of H₂O. Lower figure has no H₂O cluster, because Brown gas vibrate H₂O by positive pulse.

V. MECHANISM OF FREE ENERGY OF BROWN GAS

➤ Femto-H₂ Generation can need Extra Energy

Femto-H₂ is generated in the positive metal electrode and it may not consume current, therefore, femto-H₂ generates without extra energy.

➤ The Number of Generated Oxygen-18 also may be Generated without Extra Energy

In case that femto-H₂ generated without extra energy the generated oxygen-18 is generated without extra energy.

Thus, the number of oxygens increases without extra energy.

➤ Possibility to have Larger Number of H₂

Complete combustion of all oxygen molecules produced is possible in case that the amount of H₂ is large enough.

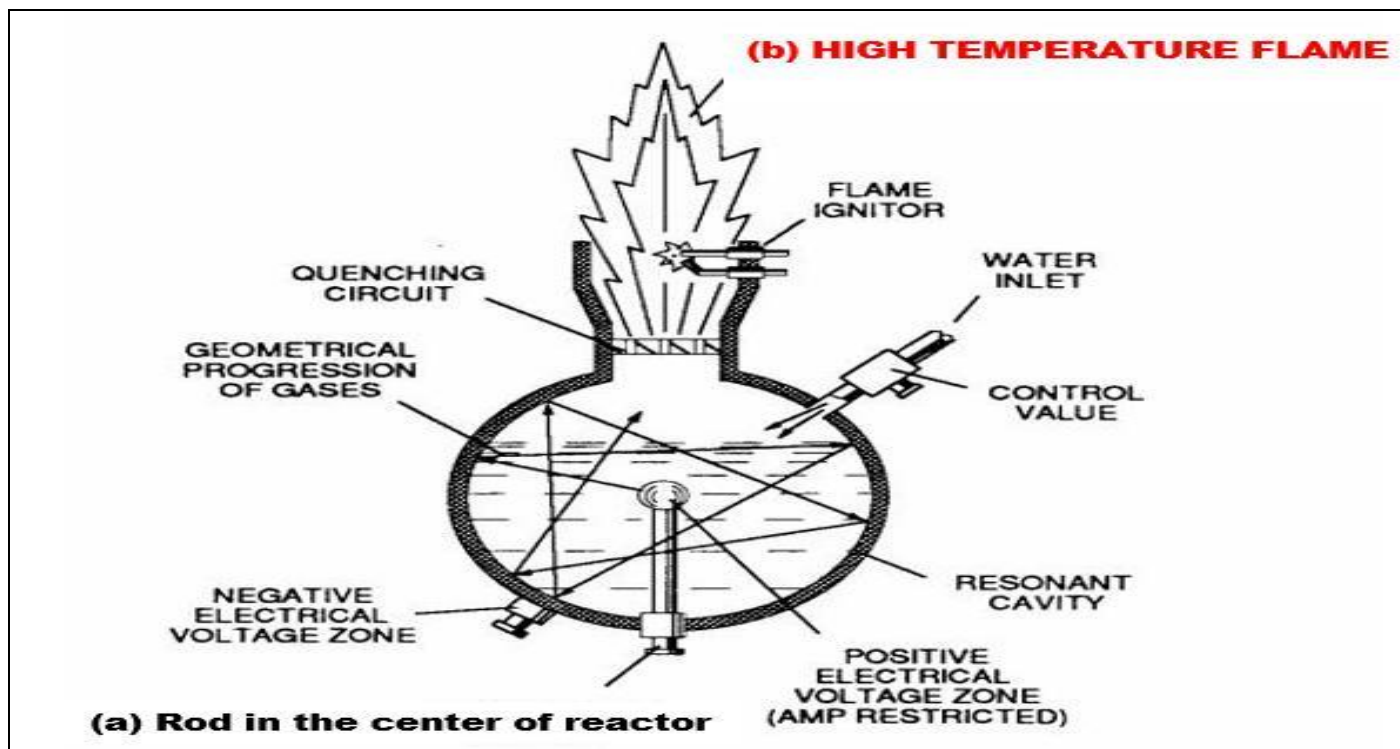


Fig 11 Schematics of Brown Gas Generator by Stanley Meyer[6],[7]

Stanly Meyer's Brown gas generator has a characteristics shape. Negative electrode is spherical, and the positive electrode is spherical and located at the center of the reactor. Generated gas is burned on the top of the reactor to increase the Water temperature.

Note that electrolysis efficiency is higher with higher temperature of water due to the high conductivity of current. Therefore, it improves the efficiency. The asymmetry of the electrode can cause the larger amount of Hydrogen gas.

➤ Possibility to have Larger Number of Oxygen-18 by the Vibration of Reactor

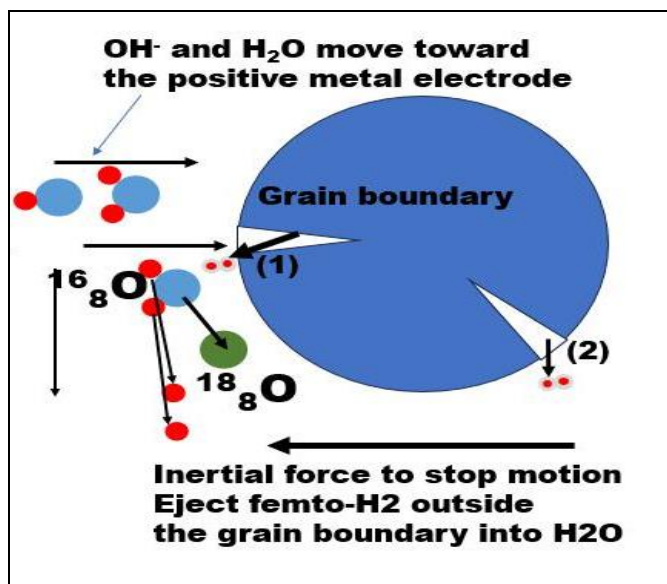


Fig 12 Femto-H₂ Generation and Ejection from Metal

Stanly Meyer's Brown gas generator is installed in a car, it also vibrates when the car vibrates. The vibration of the metal can eject the femto-H₂ from the metal surface by inertial force as is shown in Fig.12(1).

On the lower surface of the spherical electrode, femto-H₂ descends and comes out of the metal electrode as is shown in Fig.12(2).

For the above reasons, Oxygen-18 can be larger than the conventional brown gas generator. Therefore, it is important to consider not only the power input to the Brown gas generator but also the energy consumption due to these factors.

VI. CO₂ TRANSMUTATION IN GAS TURBINE

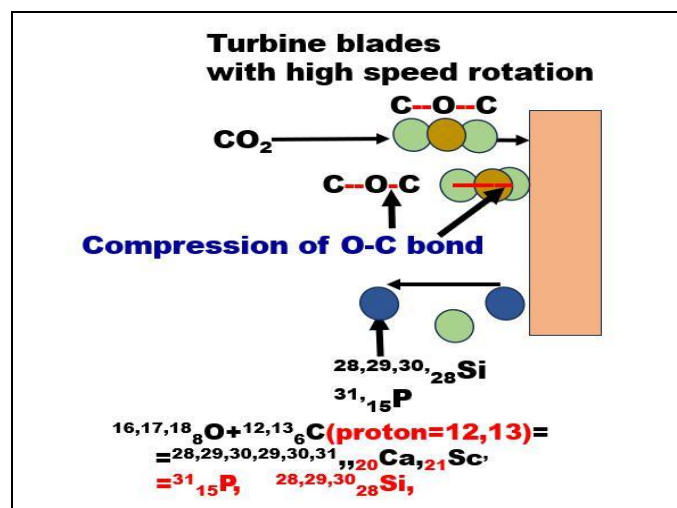


Fig 13 Mechanism of CO₂ Transmutation in Gas Turbine [8]

➤ *Bond Compression Causes the Fusion*

Dr Ohmasa claims that mixing OHMASA-GAS with fossil fuel gas and burning them in a gas turbine can reduce carbon dioxide emissions down to zero. Note that OHMASA-GAS is the mixture of H₂ and O₂ without O-18 because it is conventional H₂ and O₂ gas generated by high efficiency electrolyzer of H₂O with vibration of water inside the reactor without vibration of metal electrode.

However, based on my transmutation mechanism it is possible that compression of C-O bond to fuse C+O=Si. Thus, firstly I would like to request an analysis of the composition of exhaust gas and confirmation of increases or decreases in carbon dioxide concentration by mixing H₂ and O₂ with fossil fuel gas.

VII. DISCUSSION

➤ *Risk of Isotope Ratio Change and Reduction of Oxygen by Burning the Gas with H₂ and O₂ in Gas Turbine*

Because brown gas has the transmuted O-18 from O-16, thus isotope ratio will be changed in case that brown's gas is produced industrially in large quantities. In this case we must consider the advantage to use Brown gas.

Also burning fossil fuel gas mixed with H₂ and O₂ reduces Oxygen in the vast use.

Because I heard the project of Water-powered car, and power generation with Brown gas, I think this risk should be discussed.

Major problem is that currently Cold Fusion venture companies have not yet achieved the Cold Fusion Power Generator. Brown gas power generation has almost no advantages compared to cold fusion power generation, and the first priority should be to launch cold fusion power generation before the CO₂ reduction and Brown gas generation. As far as I research, there are currently many projects on Brown gas power generation, water powered car and CO₂ reduction.

Therefore, I would like the governments to study what projects are ongoing in the industry, and to discuss the regulation of these projects.

I also would like governments to study original contribution of water-powered car by Stanley Meyer to restore his honor because it can be a real free energy.

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