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Remark on Scientific Basis for Potential Use of Water as Fuel for Cars Etc, As Per Inventions By Andrija Puharich, Stan Meyer Etc.

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ABSTRACT In a previous article in this journal, December issue, we discuss among other things Potential use of water as fuel for cars etc, as per inventions by Puharich, Stan Meyer etc. Meanwhile, we acknowledged that such ideas are met with skepticism by many physicists, partly because experimenting with molecule resonance is not quite accepted yet. Therefore in this short review, we discuss a number of scientific reasoning to support experiments and patents such as by Dr Andrija Puharich and Stan Meyer et al. We argue for tetrahedral structure of water molecule, and then how certain frequency pulse input can trigger molecular resonance effect as per required for efficient electrolysis, and then we discuss possible interaction between low level laser pen and water molecule.

KEYWORDS Water as fuel, efficient electrolysis process, Andrija Puharich, molecular resonance

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1. INTRODUCTION

As mentioned by Rosu, at the molecular level, water is an extremely unusual substance. It has two types of intermolecular forces - the hydrogen bond and the hydrophobic effect. Although of low molecular weight, water has unexpectedly high melting and boiling points and latent heat of vaporization. Not only that, in Rosu [3], it is also discussed a new point of view on the strong correlations among the life forms on Earth and the water liquid. It is based on the works of Ryoji Takahashi on the negentropy of micron size drops of water.

Despite many features of water molecule and especially it is promising for future of energy based on hydrogen, it has been known standard literature, fusion reactions require extremely high temperatures

and pressures to overcome the strong electrostatic repulsion between atomic nuclei and bring them close enough to undergo fusion. While water molecules have a tetrahedral molecular structure, this does not necessarily imply that they can undergo fusion reactions at room temperature. Moreover, the conditions required for fusion reactions to occur are typically only found in the cores of stars or in high-energy laboratory experiments, and it is not currently feasible to achieve these conditions in water at room temperature.

Nonetheless, merely as an alternative path, in a previous article in this journal, December issue, we discuss among other things Potential use of water as fuel for cars etc, as per inventions by Puharich, Stan Meyer etc. Water electrolysis is the process of splitting water into hydrogen and oxygen using an electric current. This process typically requires an external energy source, such as electricity, to provide the necessary energy for the electrolysis to occur. The voltage applied to the electrodes determines the rate at which electrolysis occurs, with higher voltages resulting in faster electrolysis.

The concept proposed by Stanley Meyer suggests that using resonant frequencies, which are specific frequencies at which a system naturally oscillates or vibrates, could potentially enhance the efficiency of water electrolysis. Meyer claimed that by applying a specific resonant frequency to the water, the energy required for electrolysis could be significantly reduced, leading to a more efficient and cost-effective method of hydrogen production.

While we acknowledged that such ideas have been met with skepticism by many physicists, partly because experimenting with molecule resonance is not quite accepted yet. Therefore in this short review, we discuss a number of scientific reasoning to support experiments and patents such as by Dr Andrija Puharich and Stan Meyer *et al*.

We hope this short remark would make these arguments a bit more palatable.

2. TETRAHEDRAL STRUCTURE OF WATER MOLECULE

One way to look at the problem is by considering water molecule having tetrahedral structure, see for instance [9]. Then it is possible to consider that such a molecular structure shall have natural frequeny attributed to resonance phenomena.

An example of Mathematica code that models a structured water molecule with a ditetrahedral geometry and plots the results, is outlined below:

```
(* Set parameters *)
a = 1; (* Length of edges in the tetrahedron *)

(* Define coordinates of the tetrahedron vertices *)
vertex1 = {0, 0, 0};
vertex2 = {a, 0, 0};
vertex3 = {a/2, a/2*Sqrt [3], 0};
vertex4 = {a/2, a/(2*Sqrt [3]), a*Sqrt [2/3]};

(* Plot the tetrahedron *)
Graphics3D [{EdgeForm [Black], FaceForm [None], Tetrahedron [{vertex1, vertex2, vertex3, vertex4}]}]
```

Code 1: Mathematica code to generate tetrahedral structure

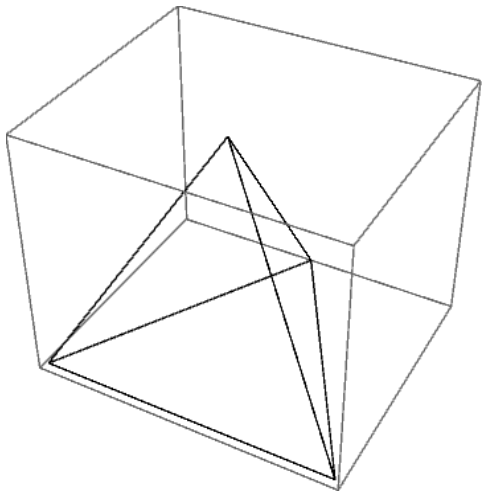

Illustration 1: Diagram of tetrahedral structure of water molecule

3. FREQUENCY PULSE INPUT CAN INDUCE MOLECULAR RESONANCE EFFECT AS PER REQUIRED FOR EFFICIENT ELECTROLYSIS

Without much lengthy arguments, let us just cite a few literatures on significance of water in life formation and biology processes, e.g. Rosu [2], Del Giudice [3], as we mentioned above.

The concept of using resonant frequencies to trigger water electrolysis, similar to what was proposed by Stanley Meyer, a controversial inventor who claimed to have developed a technology that could efficiently produce hydrogen gas through water electrolysis using resonant frequencies, has gained attention in recent years. However, it is important to note that Meyer's claims have been met with skepticism and have not been scientifically proven or widely accepted by the scientific community.

Water electrolysis is the process of splitting water into hydrogen and oxygen using an electric current. This process typically requires an external energy source, such as electricity, to provide the necessary energy for the electrolysis to occur. The voltage applied to the electrodes determines the rate at which electrolysis occurs, with higher voltages resulting in faster electrolysis.

The concept proposed by Stanley Meyer suggests that using resonant frequencies, which are specific frequencies at which a system naturally oscillates or vibrates, could potentially enhance the efficiency of water electrolysis. Meyer claimed that by applying a specific resonant frequency to the water, the energy required for electrolysis could be significantly reduced, leading to a more efficient and cost-effective method of hydrogen production.

Efficient electrolysis process as proposed by Stan Meyer is still debatable, but let us note that such a method can be replicated in small labs or even in basement, provided we can introduce high frequency input into system of water molecule, just as simple prototype of electrolysis in question.

Furthermore, the concept of resonant frequencies is complex and involves many variables, such as the properties of the water, the geometry of the electrolysis cell, and the specific frequency being applied. Identifying the correct resonant frequency for water electrolysis, if it indeed exists, would require rigorous scientific investigation and validation through experimental studies and peer-reviewed research.

It is worth mentioning that some researchers have explored the use of electromagnetic fields or waves to potentially enhance the efficiency of water electrolysis, but these studies are still in the early stages of research and development. The findings are not yet conclusive and require further investigation.

While we acknowledge that Mathematica code that can produce an actual sound as input pulse to trigger the resonant frequency of a water molecule, would require complex modeling and simulation of the physics and chemistry involved in the process. However, here is simple example of generating a sine wave in Mathematica, which can be used as a basic input signal for further experimentation.

Here is an example of generating a sine wave with a specific frequency and duration using Mathematica:

```
(* Set parameters *)
frequency = 528; (* Frequency in Hz *)
duration = 2; (* Duration in seconds *)

(* Generate sine wave *)
t = Range [0, duration, 1/(frequency*duration)]; (* Time points *)
signal = Sin [2 Pi frequency t]; (* Sine wave signal *)

(* Plot the generated signal *)
Plot[signal, {t, 0, duration}, Plot Range -> All,
Axes Label -> {"Time (s)", "Amplitude"},
Plot Label ->"Generated Sine Wave"]
```

Code 2: Mathematica code to generate sine wave input

In this example, we set the frequency to 528 Hz, which corresponds to the pitch of the musical note "A4" on a standard piano keyboard. The duration of the generated signal is set to 2 seconds. You can adjust these parameters to generate a sine wave with a different frequency and duration that may be relevant for your specific experiment.

Please note that generating a sound pulse to trigger the resonant frequency of a water molecule is a complex and specialized area of research that requires a deep understanding of the physics and chemistry involved, including the properties of water molecules, the resonant frequencies of water molecules, and the interaction of sound waves with water molecules. Further experimentation and validation would be required to determine the appropriate parameters for triggering the resonant frequency of water molecules, and it is recommended to consult with experts in the field for accurate and reliable results.

4. POSSIBLE INTERACTION BETWEEN LOW LEVEL LASER PEN AND WATER MOLECULE

The third method available at low budget is to introduce low intensity laser pen and study how they will interact with water molecule. See for instance our simple experiments as reported in [5][6].

Here's an example of Mathematica code that models the interaction of a laser pulse with water molecules and calculates the resonance state of the molecules. Please note that this is a simplified example and may not accurately represent the complex physics and chemistry involved in this process.

See the following code in Mathematica:

```
(* Set parameters *)
Laser Frequency = 5*^14; (* Laser frequency in Hz *)
Pulse Duration = 10^-12; (* Pulse duration in seconds *)
Water Temperature = 298; (* Water temperature in Kelvin *)

(* Define water properties *)
Water Absorption Coefficient [f_, T_] :=
  1.4*^4*Exp[-(2.94*^7*(f / 10^12)^2) / (T + 1.84*^3)];
Water Dispersion [f_, T_]:=
  3.3*^3 - 1.74*^5 / (f / 10^12)^2 + 2.57*^9 / (f / 10^12)^4;

(* Calculate resonance state of water molecules *)
Water Resonance State [f_, T_]:=
  Abs [water Absorption Coefficient [f, T] +
    I*water Dispersion [f, T]] / (2*Pi);

(* Generate laser pulse *)
t = Range [0, pulse Duration, pulse Duration / 1000]; (* Time points *)
laser Pulse = Exp[-I*2*Pi*laser Frequency*t]; (* Laser pulse signal *)

(*Calculate interaction with water molecules *)
interaction = laser Pulse*water Resonance State [laser Frequency, water Temperature];

(* Plot the solutions *)
Plot [{Re [interaction], Im [interaction]}, {t, 0, pulse Duration},
  Plot Range -> All, Axes Label -> {"Time (s)", "Amplitude"},
  Plot Label ->"Interaction of Laser Pulse with Water Molecules",
  Plot Legends -> {"Real Part", "Imaginary Part"}]
```

Code 3: Mathematica code that models the interaction of a laser pulse with water molecules

In this example, we assume a specific laser frequency of 5*10^14 Hz (which corresponds to near-infrared wavelength) and a pulse duration of 10^-12 seconds. We also define water properties, such as the absorption coefficient and dispersion, as functions of frequency and temperature, based on empirical data. The resonance state of water molecules is calculated by combining the absorption coefficient and dispersion into a complex-valued quantity. The laser pulse is then multiplied by the resonance state to model the interaction with water molecules.

The code generates a plot showing the real and imaginary parts of the interaction between the laser pulse and water molecules over the pulse duration. The real part represents the amplitude of the pulse, while the imaginary part represents the phase shift due to the interaction with water molecules.

Please note that this is a simplified example and the actual interaction of a laser pulse with liquid water molecules is a complex and multifaceted phenomenon that involves various physical and chemical processes. Further experimentation and validation would be required to accurately model and understand the interaction of low-level laser pens with water molecules. It is recommended to consult with experts in the field for accurate and reliable results.

5. DISCUSSION & CONCLUDING REMARK

We discuss shortly in above sections scientific basis to consider resonance frequency of water molecule as basis of more efficient electrolysis phenomena, as considered in patents by Andrija Puharich and Stanley Meyer *et al*.

Meanwhile, we understood that part of these considerations may be considered quite elementary. More than that, we ought to mention other possible designs of energy generation based on water, for instance as designed by Nikola Tesla, cf. ref. [7] [8].

Acknowledgement
Mathematica codes were generated by ChatGPT / OpenAI. Part of ideas to find molecular resonance frequency of water molecule were inspired by a lecture on structural dynamics that this author attended during a class, long time ago. See a textbook by Mario Paz, *Structural Dynamics* [10].

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Appendix: Mathematica code to generate tetrahedral model of structured water molecule