Functions on the Plants and Seeds with the Weak Energy of Water after Dissociating Hydrogen Bond

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Abstract

The essential matter is to use water or a specific device using the water that is dissociated hydrogen bond. The water itself and or some devices activated by the water were employed on the mulberry trees, rice field, radish, mushrooms and meats. We discuss the effects on silkworms that they ate the leaves of the activated tree resulting in the more significant amount of the silk thread, and roots of the rice plants grew up more in the activated field. Furthermore, the germination of radish was also distinguished much and no dripping from the chicken meats wrapped in the activated bag when they thaw. Besides such pieces of evidence, we discuss the fundamental explanation from the standpoints of quantum mechanics of the water and how substances can change by the water.

Keywords: Dissociation of a Hydrogen Bond; Water vs Terahertz; Lactic Acid Bacteria Under High Pressure; Silk Thread; Quantum Physics of Water

Introduction

There are many studies concerning water as well known, especially, people are interested in application to every day’s issues, and they bind water to a business grater or less, just in dispensable to life. However, there are many fundamental theme existing in the water. We also carried out a variety of field experiments besides a bench test; mulberry tree, rice field, mushroom (in shiitake fungus bed). We found the differences as compared with a control one. Initial bench tests were to keep foods fresh by devise a container (activated or not). These pieces of evidence by the water have been reported many times ever, 2011 (maintaining foods fresh) [1]. However, our central theme concerning with water was deactivation of contaminated soils since 2011 in Fukushima nuclear power plant accident.

We reported employing with the SP water (Spin Information Gauge field Network=SIGN water named by Sugihara---activated one) to rice fields in Fukushima [2].

Meanwhile, the variety of fundamental studies of water have been published, too [3] showing the atomic orbital and establishment of the wave function. The structure of quantum water dimer was discussed given hydrogen bond angle and potential energy surface [4] in fundamental theory. There are a few of spectroscopic researches in infra-red [5] and terahertz vibration-tunneling spectroscopy is a unique study [6]. However, there have been a few kinds of research to connect some kinds of visible evidence with the underlying physics of water. Despite numerous methods employed so far to study water, its structure, let alone its functionality, are not yet understood. Aquaphotomics research studies showed is that NIR spectroscopy, significantly contributing to the field of water science and a better understanding of molecular water systems [7].

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We reported several fundamental studies of the water using computer simulation, too [8]. Our theme is a wide range from bacteria [9] to the nucleus with the water [10]. We propose the elucidation of water in terms of the information rather than energy given to the water by dissociating hydrogen bond, which generates the presumed particle, infoton $<\text{H}^+\sim\text{e}>$. The particle may transfer to the captioned materials by dipping to the water and or to keep the materials by the side of the activated one at a certain distance for a couple of days depending on the size of a material. The material or the device that we call possesses the information of the water hereafter. Finally, we will discuss the infoton that the water has after braking hydrogen bonds in terms of quantum physics as possible as we can.

**Experimental Methods**

Tap water is pressurised at 200 MPa for 10 minutes (we call it the specially-process, SP water) in Niigata prefecture. Some time we employed at 147 MPa where the test facility for the in-depth sea research of Science Technology Agency in Japanese Government, and then analyses with H-NMR to evaluate physical state, and transmission of the information of the water evaluated in the region of THz wave done by Institute of Physical and Chemical Research, although it is not elucidated concisely here. In Fukushima city, we tested the mulberry trees wrapped with the ropes that were activated by the water, and silkworms ate the leaves in the farmer’s warehouse. The farmer in Kumamoto city planted the rice in the field where was stretched with the activated ropes by the SP water and another field was a control one so that we can compare the products.

**Results and Discussion**

We wrap the rope around a stem of a mulberry tree for approximately three months before harvest, and then the tree sucks up water quickly because the SIGN water is a size of a picometer resulting in the expectation of active photosynthesis; namely active synthesis of chlorophyll in the leaves. Now, silkworms eat the leaves resulting in a bind to a more substantial amount of 20% rather than typical harvest of silk generated by the silkworm, and higher yield continues for three years, according to the farmer reports. We tested the high pressure of 147 MPa to the commercial milk in a glass bottle (200 mL). The result shows that general bacteria count ($5.29 \times 10^5/g$), lactic acid bacteria ($1.55 \times 10^9/g$) and fungal count ($1.13 \times 10^4/g$) besides *Staphylococcus aureus*, *Coliforms*, *Bacillus cereus*, *Salmonella*, *E. coli* (O-157) are negative according to the report by Japan Functional Food Analysis and Research Center (2015/11/6). The count of the lactic acid bacteria is said to be in a body $10^7 \sim 10^9/g$ usually. Namely, they are active even under high pressure.

![Figure 1: Mulberry trees wrapped around with the ropes (about 2m).](image-url)
Another example is that we stretch the activated ropes in the rice field (30 × 30m) where rice seedlings are planted in May of a season. After the harvest of the rice plants in the autumn, we took the roots to compare with them in a control rice field. The roots are shown in figure 2.

There are remarkably different between them, leading to a large number of roots harvested from the activated rice field. The mechanism can be easily elucidated step by step; the activated rope that possesses the information of the water may give the nature to the field, and then the rice plants improve a function to suck up the water due to smaller size molecule (exactly, atomic level) resulting in much growth. This mechanism is generally applied to plant growth. Microscopically speaking, any plants have aquaporin protein that led water to absorb into a plant, and the smallest width of it is only less than 1.5 × 10^{-10} m (1.5d angstroms). The size of water has the calculated order of picometer (10^{-10} m) so that they can quickly put into the plant. We can elucidate the same mechanism for the radish, as shown in figure 3, where the plastic container is activated or not (control).

In the unique experiment concerning meats, we found no drips from meats when they are defrosted, as shown in figure 4. The meats are maintained in the specially-process package which is activated with the weak energy of the water. Herewith, the meats might be activated through the package, strictly speaking, the water in the meat activates. Then, we can throw without cell destruction due to the small size of the water so that the drips from meats can be avoided.

**Figure 2:** Rice roots from the activated field and control one (2019/10). SP: Activated Rice Field and CON indicates the normal water provided.
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**Figure 3:** Germination and growth of radish. Left; five days after sowing seeds, and Right; after some hundred and eight days. The left containers are the normal one, and the rights show activated ones.

**Figure 4:** Dripping from chickens. In activated film, no drippings, no smell, while spoil and color changes in an ordinary film besides dripping. Test conditions; for 8 days at 8°C.

Mushrooms are kept in the activated bag and control bag for five days at room temperature. The gases were measured in real time. The results are shown in table 1.

In the activated bag, mushrooms breath to leading to oxygen generation and reduce carbon dioxide, meanwhile it was ruined smell without breath in control bag as shown in table 1.

Table 1: The change of mushrooms kept in a bag for five days at room temperature.

<table>
<thead>
<tr>
<th>Gas content (%)</th>
<th>Control bag</th>
<th>Activated bag</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oxygen</td>
<td>0</td>
<td>5</td>
</tr>
<tr>
<td>Carbon dioxide</td>
<td>37</td>
<td>16</td>
</tr>
</tbody>
</table>

The mechanism can be briefly explained in figure 5.

Now we have to discuss the reasons why there are many functions of the water and the mechanism are fundamental explanation in terms of physical science.

Figure 6 depicts the behavior of infoton as the wave and particle, in particularly, when infoton access to cesium atom resulting in forming electromagnetic potential and gauge field. Gauge field is defined to change the substance in elementary particle physics. This Dirac’s wave function includes the part of a transverse wave in the second parenthesis, and the last term corresponds to a longitudinal wave which associates with emitting of far-infrared (far-IR) and terahertz wave (THz). Namely, infoton possesses both natures of a transverse and longitudinal wave.

The characteristics of the water emitting both waves bounds to the function of infoton transversing even in space as information that it possesses. The THz wave is usually absorbed with water but the water containing infoton can transvers a little in the specific region of the THz wave indicated in figure 7. Namely, the longitudinal wave progressing directly toward proceeding direction can transmit through THz region due to the small particle of the water, and then it will contribute to the function of the activated material, for instances, activated polyethylene bag can maintain food fresh to transfer the information of infoton from the activated bag resulting in anti-oxidation as shown in figure 5.

![Figure 7: Transparency against THz wave (0 ~ 20) in the water of the THz spectrum.](image)

It is quite interesting that we look at how small the energy of the water; one THz is calculated 0.04 eV that is very close to the binding energy of hydrogen bond in water.

The nature of the water can transfer the information not only in space with THz wave but also can transfer between materials directly contacting as depicted previously, such as between mulberry tree and rope, a polyethylene container and radish through soils where the water intervene in a tree and soils. Concerning information transfer from the water, here is exciting literature where they indicate the most direct probes of the dynamics of the network with the infrared spectrum of OH stretching vibration in the hydrogen bond of liquid H$_2$O [10] although our particle, infoton, may not visualise with infrared.

Finally, we discuss the activation of nitrogen, which means to strengthen the reduction ability of nitrogen; Infoton activates N$_2$ in the air or water, as shown in figure 8.

![Figure 8: The model of forming infoton particle from two water molecules.](image)
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We previously reported the model of the water after braking hydrogen bonds [11]. Now we discuss the activation of nitrogen gases with infoton which may result in photosynthesis as follows:

A proton in infoton <H^+~e^-> attacks nitrogen gas to activate. Then the mediator such as -N* = N-<H^+~e^-> may form and it attracts carbon dioxide as following:

\[
\begin{array}{c}
\text{C} = \text{O} \cdots \text{N} = \cdots \text{H} \cdots \text{e}^- \\
\text{C} \\
\text{H}
\end{array} + \text{H-O} \rightarrow \text{H-C=O} \quad \text{(formaldehyde)}
\]

The binding energies in this reaction are 8.3, 2.1, 4.4, 3.9 and 4.2 eV for C = O, O–N*, N*=N, mediator and C–H, respectively. Namely, activated nitrogen possesses the smallest energy that is 2.1 eV so that the part will break at first, leading to the formation of aldehyde. As a result, the chemical reaction formula is well known as following:

\[
\text{CO}_2 + \text{H}_2\text{O} \rightarrow \text{HCHO} + \text{O}_2
\]

Conclusion

We introduced that the water pressurised at 200 MPa produced a variety of phenomena in both microscopically and macroscopically. The essential function comes from the particle after hydrogen bond dissociation, which easily squeezes into aquaporin protein in living organs resulting in more significant growth of a plant. Moreover, the information the water possessing can transfer to other substance even in a space apart, with THz wave.

We discussed the fundamental nature of infoton according to quantum mechanics.

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Conflict of Interest

There is no conflict of interest.

Bibliography


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