

## Effect on Agriculture Science of Chemical Reduction and Element Changes with Infrared and Terahertz Wave

Sunao Sugihara<sup>1\*</sup>, Hiroshi Maiwa<sup>2</sup> and Kunihiro Hatanaka<sup>3</sup>

<sup>1</sup>Shonan Institute of Technology, Fujisawa, Japan (General Inco. Assoc. Green Earth Again, SIGN water research Lab. Yokohama)

<sup>2</sup>Department of Human Environment, Shonan Institute of Technology, Fujisawa, Japan

<sup>3</sup>MCM Co. Ltd. Osaka, Japan

**\*Corresponding Author:** Sunao Sugihara, Shonan Institute of Technology, Fujisawa, Japan (General Inco. Assoc. Green Earth Again, SIGN water research Lab. Yokohama).

**Received:** October 21, 2021; **Published:** November 01, 2021

### Abstract

There is little basic research for water although many a study has been reported for a macroscopic viewpoint of water, H<sub>2</sub>O molecule itself, the chemical reaction such as a solvent. Furthermore, water must be essential to agriculture including soil and bacteria in it. The research of agriculture has not focused on the water, although they pay much attention to soil, a fertilizer and efficient harvest. Here we report the water a more than unusual which we drink and use for life. Here, we present the pico-size water like an elementary particle that can be fabricated with higher pressure of more than 100MPa. The water functions taste of foods including sweetness, anti-oxidation and chemical reduction as well as growth. We indirectly confirmed the smallness of it with H-NMR and FTIR methods. As the result, the water can be easily absorbed into a living organism including a human body due to its size leading to the growth and respiration of a plant. Furthermore, we report that the water can function to change the nucleus resulting in the radioactive reduction.

**Keywords:** Pico-water; Chemical reduction; Sugar content; Radiation reduction; Anti-oxidation

### Introduction

Sunlight generally is necessary to live organs, and there are also subtle cases. For example, photoblastic [1] describes a seed whose germination is influenced by light such as lettuce and woodland strawberry (*Fragaria*) and mistletoe (*Yadorigi*) [2]. Any plant needs a right temperature besides sunlight. For instances, the zone of a rice-growth in Japan becomes towards Hokkaido in the northern part because of global warming. Furthermore, there are some areas of lack of water on the earth always and sometimes drought to be needed underground water leading to the depletion. Therefore, we must devise how we effectively give water to a plant so that a plant can easily absorb water. Here we propose an anti-oxidation of crops, make tasty and how to keep it longer in fresh. For these purposes, we present the SIGN water (Spin Information Gauge Network) which can effectively provide far infrared through terahertz wave to a plant. Furthermore, we introduce radiation reduction in rice plant in Fukushima by the nuclear reaction with the SIGN water involving the presumed particle, infoton [3] which is neither hydrogen atom nor proton and electron. They exist stably for a long time period. We discuss the mechanisms of infoton transfer, chemical reduction including anti-oxidation and decrease of radioactivity as well.

### Materials and Methods

We produce SIGN water from tap water under higher pressure than 100 MPa without any additive, resulting in water with the

pico-size particle (we name it infoton), and infoton can be transferred to another substances as energy or information associating with the momentum. These substances are woods, plants, plastics, fiber and other water. We use "activation or activated" as the terminology relating to use SIGN water information.

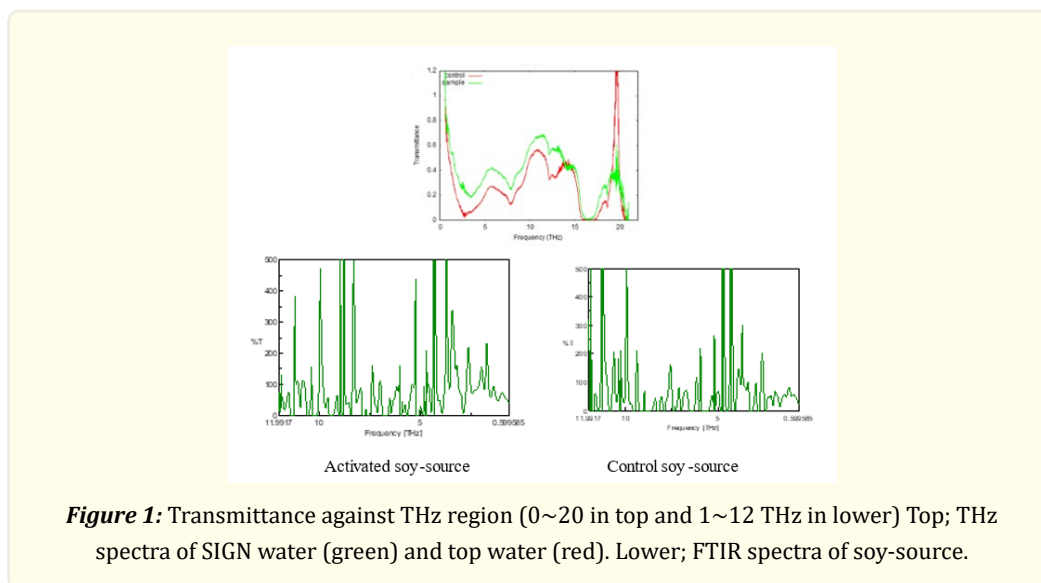
Considering taste, we use saccharimeter (HI-968 11). Furthermore, we must indirectly evaluate a smallness of water when compare the spectra of H-NMR (R-90, Hitachi Co. Ltd) and FTIR (6000, JASCO) with those of control water.

The methods of information transferring are immersed into SIGN water, contacting to the activated substance in direct and keeping the captioned material at a several distance like 100 to 200 mm. Furthermore, radiation measurement is used Geiger-Müller counter which can detect total ( $\alpha+\beta+\gamma$ ) and ( $\beta+\gamma$ ), separately. We can use Radiation Alert Inspector EXP as well.

## Results and Discussion

### How to judge SIGN water?

We introduce the judgement of the active condition to compare an example of activated soy-source with control one. We depict FTIR spectra in the lower frequency terahertz region which energy relates to 0.04~0.004 eV as shown in Fig.1. Generally, water is absorbed around the region, but SIGN water (and the liquid involving SIGN information) can transfer the terahertz wave than the control one.

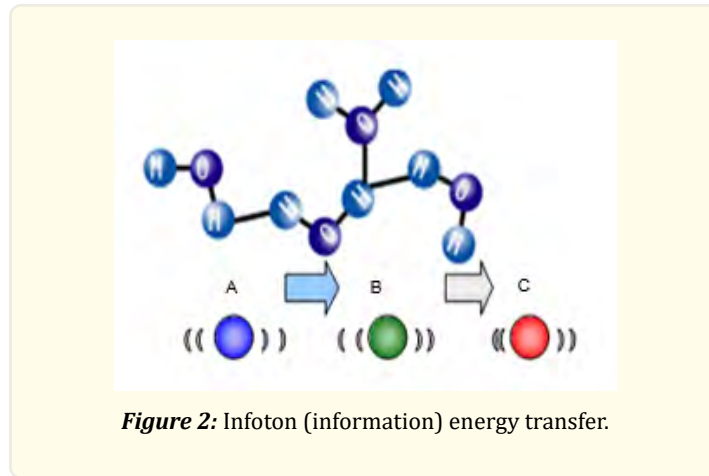


**Figure 1:** Transmittance against THz region (0~20 in top and 1~12 THz in lower) Top; THz spectra of SIGN water (green) and top water (red). Lower; FTIR spectra of soy-source.

### Infoton energy transfer

We describe the energy (or information) transfer mechanism in Fig.2.

Vibration of infoton with plasma frequency [6] describes in the following equation such as;  $\omega_p^2 = 4 \pi n e^2 / m^* \epsilon_\infty$  leading to transfer infoton energy ( $\omega_p \approx 0.04$  eV)



As described previously, infoton is depicted like  $\langle H^+ \sim e^- \rangle$  in which proton and electron vibrate neither react to hydrogen atom nor electron escape from the system.

#### *Changes of fruit of apple due to activate the tree*

The activated hemp fiber with the SIGN water were winded on the trees as shown in Fig.2-1 and Fig.2-2.

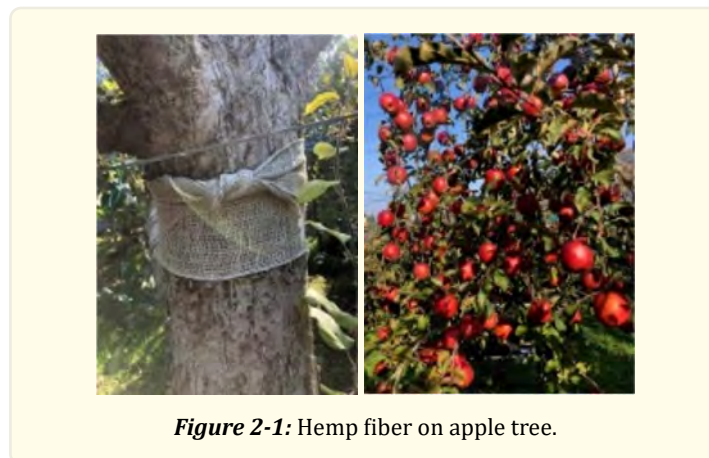


Figure 2-2 shows the comparison of the apples, and they keep for certain periods at room temperature after the harvest. We can look at remarkable differences between the SIGN tree and normal one. We assume the activated hemp fiber functions activate photosynthesis due to emit the far-infrared through THz wave leading to the SIGN water in the trees.



### Sugar content

Sweetness of strawberry is measured in the refractive index of glycine ( $\text{H}_2\text{N}-\text{CH}_2\text{COOH}$ ) which describes sweet and tasty. Sugar concentration was 10.3 in the normal and 13.5 after 5 minutes emitting the SIGN LED light which is activated by SIGN water. It seems to be difficult to explain the infoton transferring mechanism from SIGN light at present. This theme may be profound because of light and field relating to information [4].

Meanwhile, we put aluminum chains activated with SIGN water around strawberry roots. The strawberry sweetness became sweeter as compared to the normal one. The mechanism seems to be the following reaction to form more glucose;

$\text{H}_2\text{O} + \text{CO}_2 \rightarrow \text{C}_6\text{H}_{12}\text{O}_6$ , In reaction,  $\text{H}_2\text{O}$  is the SIGN water, infoton can easily go into the leaves due to the pico-size resulting in the more active photosynthesis.

### Anti-oxidation of salad oil

We activate the salad-oil container with SIGN water, then put the oil (10L). Two days later, the salad-oil is activated due to transfer infoton properties from the container. After SIGN salad-oil was used to cook the tempura at high temperature, the oil was put into the SIGN container. Then, we test the value of anisidine value of the used oil in the SIGN container and can judge the oxidation grade of the lower value as 8% reduction. It means the SIGN container makes the used oil an anti-oxidized condition. We experienced the anti-oxidation test for a rose-hip oil to judge the acid value in a dark box for one month;

Equivalent to KOH were 0.45~0.54 in SIGN water and 0.45~0.90 [5].

### Radiation reduction in the rice

We analyzed the radioactivity of rice hull (60%) and rice itself (4%). Then, Table 1 shows radioactivity depending on the conditions of cooking every cesium. We can recognize the effects of the activated water. The largest radioactive reduction rate was in the SIGN water boiled rice. Previously, we have reported the decontamination of cesium134 and 137 in Fukushima contaminated soils and discussed the detail mechanism resulting in formation of stable barium elements 135, 138, etc. [6, 7].

sample	unpolished rice			polished rice		
	<sup>137</sup> Cs	<sup>134</sup> Cs	total	<sup>137</sup> Cs	<sup>134</sup> Cs	total
rice	110.6	77.1	187.7	47.1	36.9	84.0
cooked A	62.3	48.6	110.9	23.5	20.1	43.6
cooked B	37.8	29.1	66.9	12.1	10.6	22.7

Note: cooked A is treated with ordinal water, while cooked B means cooking after processed by activated water.

Reduction rate in polished/unpolished ratio

- 1) rice: <sup>137</sup>Cs = 57.4%, <sup>134</sup>Cs = 52.1 % ( in total, 55.2%)
- 2) cooked A : <sup>137</sup>Cs = 62.3%, <sup>134</sup>Cs = 58.6 % ( in total, 60.7%)
- 3) cooked B: <sup>137</sup>Cs = 68.0%, <sup>134</sup>Cs = 63.6 % ( in total, 66.1 %)

**Table 1:** Radioactivity change in rice.

We assume the radioactivity reduction mechanism by boiling the rice with SIGN water (in the case of cooked B) and reported the radiation reduction physics previously.

## Conclusion

We reported judgement of SIGN water using THz spectrum and FTIR measurement showing emitting longer wavelength such as far-infrared through terahertz and we discussed the infoton transfer mechanism.

Apple tree treatment showed to activate photosynthesis in the tree as well as anti-oxidation of the fruit so that we can maintain fresh for a long time of period at room temperature. We suggested increasing of sugar content because of active photosynthesis leading to improvement of sweetness indicated in as well. Anti-oxidation was discussed in the sense of chemical reduction. Finally, we reported radioactive reduction depending on the rice treatment in cooking. We will continue to research functions of SIGN LED light in the near future.

## Acknowledgement

We thank you for helpful data gathering in Nagano prefecture to Mr. Takumi Amano of General Inc. Association Green Earth Again (Director).

## References

1. <https://ja.wikipedia.org/wiki/>
2. <https://ja.wikipedia.org/wiki/Yadorigi>
3. Sugihara S. Infoton: Certificate of trademark registration No. 5138668, Japan Patent Office (2008).
4. Bekenstein D Jacob. "The limit of Information". Stud. Hist. Phil. Mod. Phy 32.4 (2001): 511-524.
5. Sunao Sugihara and Yuji Nagasaka. "Anti-Oxidation of Rose-Hip Oil with the Specially-Processed Water". EC Agriculture 6.5 (2020): 85-91.
6. Sugihara S. "Faster disintegration of radioactive substances using energy of specially-processed water and theoretical prediction of a half-life of radionuclide". International Journal of Current Research and Academic Review 3.8 (1915): 196-207.

7. Sugihara S. "Model for Transmutation of Elements using Weak Energy of Water Leading to Faster Disintegration of Radionuclides". *Water* 10 (2018): 82-98.

**Volume 1 Issue 3 November 2021**

**© All rights are reserved by Sunao Sugihara., et al.**