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Research Article

Reduction of the Climate Change Water Flood Based through Electromagnetic Chamber

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***Abstract*—In recent times, climate change affects whole life aspects while the technology that leads to deal with the modelling in the electromagnetic field has drawn much attention due to alter dramatically in the lifestyle needs. According to that, promising increases daily to accommodate the life requirements and mitigate the challenges such as climate change, that is although the evolution and advanced prediction types of equipment in great countries, but climate change via water floods caused extreme damages that notably impacted the economy and life health publicly. These floods don't distinguish between areas or environments and even the existing equipment could not provide enough prevention for the creatures as well as life security. This paper takes into account the matter via a focus on the electromagnetic field to tackle the climate crisis floods with the possibility of water reclamation and give technical proposal respected to the scientific approach specifications. The proposal explained the electromagnetic chamber properties to mitigate flood through interaction with the water-based on a real previous experimental study that explored the effective outcomes that could occur when dealing with open surface water. Overall the study considers the water floods crisis electromagnetically and how to accommodate it to build a safer future for all.**

Keywords-electromagnetic chamber; water flood; climate change; frequency; wavelength.

I. INTRODUCTION

In the time being, technology rapidly evolves to achieve life demands and advancement with high expectations to provide comprehensive solutions for various challenges. One of the most significant parameters of life is water, as considered the backbone of living and development in whole countries. But when this fundamental resource changing to crisis and causing disaster due to climate change, life totally would disturbance and the countries government stands to do nothing in front of water tremendous that could damage the entire lifestyle and reach to kill the creatures. At this moment all the conferences and organizations couldn’t introduce a vision to put an end to natural disasters. Despite that, the engaged

technology via electromagnetic field could accommodate the issue using the wave specifications that would handle the matter through absorption phenomenal [1]. In addition to the earlier advantages, a desalination process that is scaring the governments financially could occur for the countries that suffering from water validity at the same time, and hence provide an appropriate solution to mitigate the water shortage [2]. In the same line of context, the author at [3] achieved to treat with the special type of water at Gulf area with remarkable salinity and reached to separate the salt from the water impurities. While from another aspect could control the waterflood and hence take the edge of the government's worries to save the countries as well as provide water validity. One of the electromagnetic (EM) advantages considers when dealing with the liquid material obvious in a Microwave oven is works as an absorber and indicates that a high interaction with the water [3]. Depends on the frequency which is 2.4GHz, time to complete the process, and the power; the water could be absorbed and changed state to drops. Whereas concentration considers a key factor of the EM when hit a specific surface and makes deference [4][5]. This leads to thinking about EM as a comprehensive technical solution added to others benefits to provide a settlement for the waterflood that would reduce the influences [6]. In this work, a novel approaches to deal with waterflood globally utilizing EM chamber to equip a solution and mitigate the climate fluctuation due to water flood influences. The rest of the paper is organized as follows: In the following section electromagnetic wave within the water, wherein section 3, the model approaches to calculate the electrical magnitude. In section 4, the result and analysis outcomes, then finally, summarize the work with recommendations for future work.

Figure 1. A real water flood in Sudan recently destroyed the life needs

II. ELECTROMAGNETIC WAVE IN THE WATER

According to the investigations in earlier studies, the water should become a significant part when dealing with EM, particularly from chemically aspect and their capability to interact with electrical flow [7], the lack of water nature resource in many areas give a sound to gained any drop via water reclamation, while through EM tunnel pipes could guide the water to a safe destination. The EM properties play a major role when designed a chamber to achieve the goal; for instance, at a Microwave oven in a real experiment test at [3], the saltwater has converted to pure water drops, whereas part from it has absorbed due to concentrated waves and could become more effective when attached to water-absorbent polymers. The two processes (absorption and conversion) could get high attention from researchers and various government sectors. The concentrated EM inside the chamber which holds electric and magnetic properties would interact with various water types such as pure or salty. Nevertheless, the waterflood naturally considers pure water that holds fewer impurities, concerning ions concentration which depends on negative and positive charge characteristics [8][9], thus the percentage of interactive would depend on the EM specifications that able to reach a result of conversion and absorption.

In a fresh look to mitigate the water overflow electromagnetically, the behaviour of the signal could give notable results and provide an undeniable technical solution when avail own properties to deal with water. The high frequencies with additional power more interact compare with lower frequencies with less power which could provide a wider coverage range of treatment when focusing the wave on a specific surface. The next section shows the assumption from a real experiment with some calculations applied on the water surface to give an effective finding that inevitably would serve the countries environment.

III. THE MODEL APPROACH

The previous test at [3] achieved in Microwave oven utilizes 2.45 GHz with 12.5 cm wavelength at lower power the result shows that within less than 6 minutes could get one litter water separation from other impurities using 600 watts, thus the water converted into drops forms with lower salinity and through every matter of time the water validity improved. Our proposal is based on the EM chamber which is distribute the water to mitigate the impact while availing as much as possible the water with the ability to make the desalination process behind the scenes. Figure 2 below demonstrates the model approach that is cut costs to offer availability.

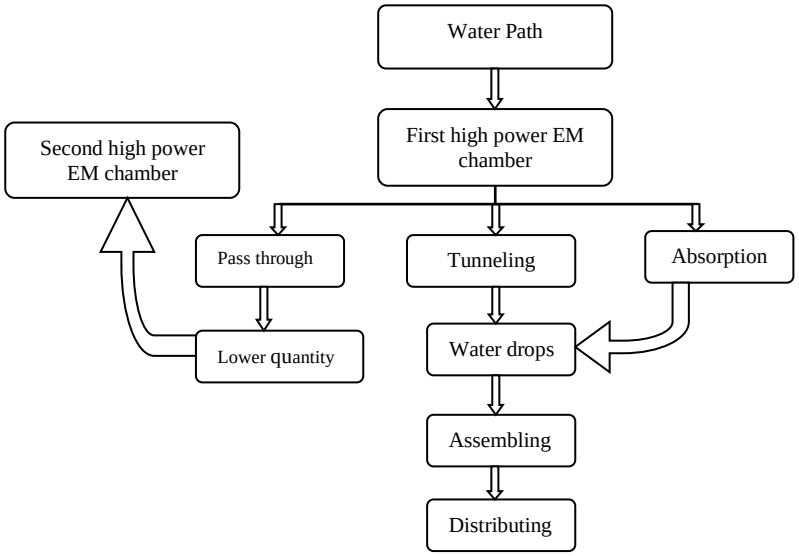


Figure 2. Exponential relation of Electrical and wavelength values.

Accordingly, from the model point of view, Gauss law [10] gives a mathematical form that could deal with different water surfaces from the electrical properties aspect which is:

$$\oint E \cdot da \frac{Q}{\varepsilon_0} \qquad (1)$$

where E is the electric field at the surface, da surface area element, Q charge enclosed in surface and ε_0 permittivity of free space. But to achieve high accuracy throughput, EM concentrates to the water overflow surface and interact with water should consider a compatible power with respect to the water volume, while the effect of the thermal conductivity could contribute to this interaction through encouraging more reaction, hence the portion from evaporated water inside the EM chamber guided by tunnel pipes via a tray to the water assembler

and accomplish the water validity process [11]. The EM chamber formation is significant to the concentration process using the waves guide, whereas the proposal could line up to establishing more than one chamber station during the water path.

For a thorough understanding, some mathematical operations to calculate the magnitude considering the surface form:

$$\int E.da\cos\theta = \frac{Q}{\varepsilon_0} \quad (2)$$

$$E\int da = \frac{Q}{\varepsilon_0} \quad (3)$$

$$E2\pi r = \frac{\lambda}{\varepsilon_0} \quad (4)$$

1

$$E = \frac{\lambda}{2\pi r\varepsilon_0} \quad (5)$$

where θ is the angle between *E* and *da*, which both consider parallelling each other while the 2πr depends on the water path. Nevertheless, the temperature in equator regions is hotter than others and hence would consider the areas are more interactive electromagnetically [12], so the equation will be:

$$E = \frac{\lambda}{2\pi r\varepsilon_0}\,\eta \quad (6)$$

where η is the thermal conduction which can consider it through Fourier law [13]:

$$Q = \eta\,\frac{\Delta T.A}{\Delta X} \quad (7)$$

where *Q* is the heat flow which is proportional to the *T* temperature and area *A*, and η is the thermal conductivity in w/m.k, while inversely to the *X* width as it could be estimated due to the water path.

IV. Result and Discussion

To compute the Electromagnetic field when hit the water surface, the correlation with the frequencies could become a fundamental role and through the Gauss law would pay attention to the different wavelength that interacts with the Electrical field. Table 1 below illustrates the wavelength at a range of frequencies from 1 to 6 GHz.

TABLE I. Electrical Field Correlation with Wavelength

Electrical field (n/c)	Wavelength (cm)
5	30
4.1	25

3.3	20
2.5	15
1.6	10
0.8	5

While the plot diagram to distinguish between related different values

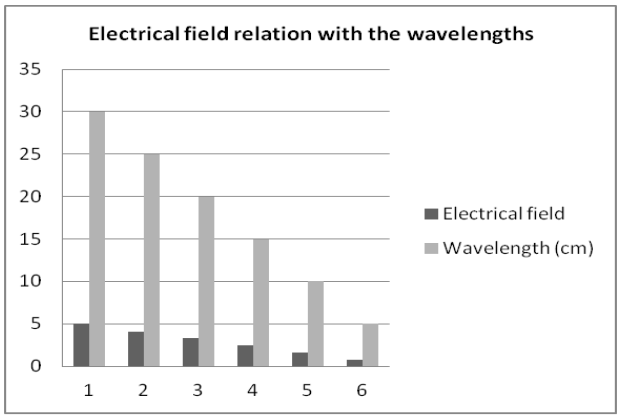


Figure 3. Relation between values based on Gausses law.

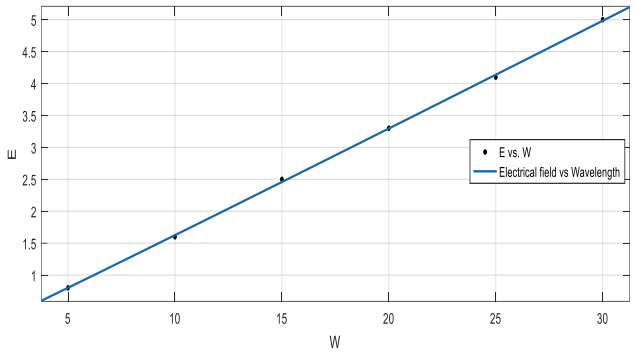
The calculation demonstrated the strong relationship between electrical field and wavelength and indicates the higher the electrical field the higher wavelength concerning other parameters such as power and surface shape to accomplishment the specific task.

Figure 4. Exponential relation of Electrical and wavelength values.

Considering the test, the 500 watts dry the one-litre water in a small food dish within 5 minutes utilizing the 2.4 GHz and almost 15 cm wavelength, the result gives sound to higher concentrated power in EM chamber would give less time to water dry with taking into consideration the surface. This outcome offers the chamber waterproof to treat a notable amount of water overflow hence reduce the impacts that could occur. While from the experiment analytical result point of view, when utilizing the 2GHz, 15cm getting 2.5n/c electrical, while the double wavelength which is 30cm obtained 5n/c and give meaning the higher coverage will lead to higher electrical interaction for the power consumption as well as the surface specification. Moreover, the boost conductivity and interaction with the signal electromagnetically leads to utilisation in different sectors such as industrial manufacturing. In addition to that and from a biology perspective, the interaction between the electrical field with the oxygen molecules produced bactericide and that could give a contributable feature to the treatment of various diseases according to [14].

V. CONCLUSION

This work shows that Electromagnetic wave via electrical field properties could mitigate the impact of water overflow that influence the environment as



well as the country's infrastructure and give a contribution to achieving water reclamation simultaneously such as water desalination. The proposal provides a solution to come up with the water flood disaster through electromagnetic chambers with the assumption that is assumed no chance for electricity generation to avail the huge water overflow. The water inside the chamber would be divided into three parts; pass through via compatible holes, pip tunnelling to control the volume, and absorbed that could be increased with water-absorbent polymers, hence each part would deal from a different aspect, while they all will serve the proposal to reduce the climate change fluctuation particularly water overflow. The study looks at some effective parameters such as the power, amount of water, and specific heat of the water. The recommendation of the work gives the spotlight to the governments to push more policies to tackle climate change through supporting renewable energy. Future work may cover the impact of photonics on contamination of the weather.

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