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Study the Surface of Chitosan Which Produces an Electric Potential

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ABSTRACT- The research aims to study the surface of chitosan/CNDs which produces an electric potential applied to electrical energi. 20 samples were taken to examine the results regarding energy potential and its application to electrical energy.The conclusion obtained by this research is the influence of chitosan to accelerate electrical potential. The greater the electric potential, the greater the electrical energy.

KEYWORDS- Chitosan; Electric Potential; Electrical Energy

I. INTRODUCTION

There are many natural energies that can be developed, one of which is chitosan/CNDs, but they must be processed using the correct rules by understanding the application of physics and materials science. In processing it to produce electrical potential, physics and electrical engineering can be used, which are all interrelated [1]. Many people can lose money due to the theft of electricity by irresponsible persons. In processing chitosan so that it can have electrical potential which can later be used to develop solar panels, the right method is needed [2]. Voltage, or electric potential difference, is the difference in electric potential between two points in an electric field. It is the driving force that causes electric charges to move, producing electric current and powering devices in a circuit. Understanding the relationship between voltage and electric potential difference is very important for analyzing and designing electrical circuits and systems [3,4]. Conceptually, the understanding is the same as understanding work and energy changes. To move/move an object requires effort. The work done is equal to the change in kinetic energy or change in potential energy of the object. Likewise, to move an electric charge in an electric field, work is required, the work done is equal to the change in potential energy. The amount of energy required to move a charge depends on the size of the charge being moved and the distance it is moved [4-7].That is why it is necessary to carry out a study on the surface of chitosan which will produce electrical potential [8-12] depending on the distance from the starting point to measure the amount of electrical potential [13-16] which will produce electrical energy and how much influence the addition of chitosan will have on this research.

II. RESULTS AND DISCUSSION

Table 1: Regarding electric distance and electric potential

No.	k	q	r	V
1	k	q	0,2 m	kq/0,2
2	k	q	0,4 m	kq/0,4
3	k	q	0,6 m	kq/0,6
4	k	q	0,8 m	kq/0,8
5	k	q	1 m	Kq
6	k	q	1,2 m	kq/1,2
7	k	q	1,4 m	kq/1,4
8	k	q	1,6 m	kq/1,6
9	k	q	1,8 m	kq/1,8
10	k	q	2m	kq/2

Table 2: Regarding potential voltage and electrical energy

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No.	V	E
1	kq/0,2	kq/0,2
2	kq/0,4	kq/0,4
3	kq/0,6	kq/0,6
4	kq/0,8	kq/0,8
5	kq	kq
6	kq/1,2	kq/1,2
7	kq/1,4	kq/1,4
8	kq/1,6	kq/1,6
9	kq/1,8	kq/1,8
10	kq/2	kq/2

Taking several samples from the sample is obtained. The electric potential at point A is known to be rA = 0.2 meters.
VA = k q/rA = (9 ×109)(4 x 10-6)/(0.2) = 1.8 x 105 volts
The electric potential at point B is known to be rB = 0.4 meters.
VB = k q/rB = (9 ×109)(4 x 10-6)/(0.4) = 0.9 x 105 volts
Potential difference between A and B
VAB = VA – VB = 0.9 x 105 – 1.8 x 105 = -900 x 104 volts
The work done by the conservative force of the electric field is related to the difference in electrical potential energy used to move a charge of +1.6×10-19 C from A to B.
WAB = ΔEPAB = q ΔVAB = q (VB – VA) = (1.6×10-19) (-900 x 104) = +1.44 x 10-14 J
Outer W = – W is conservative, so -WAB = -1.44 x 10-14 J

III. CONCLUSION

The conclusion obtained by this research is the influence of chitosan to accelerate electrical potential. The greater the electric potential, the greater the electrical energy.

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