A study on the effect of embedded surface area of the electrodes for voltage collection from living PKL tree

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Abstract

To study the effect of surface area of electrodes for voltage collection from living PKL (Pathor Kuchi Leaf) tree has been studied. Seven PKL living trees were selected for voltage collection by 7 researchers separately. The seven living trees were connected in series combination and then collected voltage. It was seen that the cultivated voltage 40.39% decreased after series combination. The reason behind it is such as lose connection of the wire, insulation loss, error of the instruments, such as core loss(Hysteresis loss and Eddy current loss), winding copper loss / line loss (I^2R loss), no load current (I_o), active component of no load current (I_w), magnetizing component of no load current(I_μ) , no load resistance (R_o), no load reactance(X_o), equivalent resistance referred to primary (R_{01}) , reactance referred to primary(X_{01}) and impedance referred to primary(Z_{01}) and efficiency(η)of the practical transformer of the practical living PKL tree. Some of the few parameters have been studied. The variation of electrodes surfaces with the variation of cultivated voltages has been studied. Finally, it has been shown that the cultivated voltage from living PKL tree depends on the embedded surface area of the electrodes area, age of the PKL tree, soil of the land for PKL tree and thickness of the PKL. Most of the results have been tabulated and graphically discussed.

Keywords: *Living PKL tree, Voltage cultivation, Voltage loss, Electrochemical cell, Impedance, Reactance*

Introduction

Considering future of the human being it has been conducted research on living PKL tree. Now a day's people are cultivating land for getting foods, fruits, vegetables and medicine[1-99]. This work will show the guide lines for cultivation of electricity from living PKL trees. To keep it in mind it has been conducted voltage cultivation from PKL trees. This research work will motivate the electricity generation from living PKL tree [100-129]. This work will show the guide line for how to cultivate electricity from fruits and vegetables. In future people will cultivate electricity from living plants by the help of this work. This will be the new era for new and innovative technique across the globe. The theme of this research work is: Cultivate your own electricity from living PKL tree [130-158].

I. Methodology:

Fig.1 Individual Living PKL tree with connected Zn and Cu Plate

It is shown (Fig.1) voltage is collected from individual living PKL tree using with Zn and Cu electrodes. The Zn and Cu plates were set up between the two ends of the living PKL by the help of the plastic clips. The voltage was collected by the calibrated multimeter. Then after the embedded areas of the Zn and Cu electrodes were measured separately, which was tabulated in Table-1. It is mentioned that 7 living PKL trees were set up for voltage cultivation. The sum of the cultivated voltage for 7 trees were around 5.10 volt. The cultivated voltage for each living PKL tree was not same(Table-1), because of their embedded areas of the electrodes, soil of the cultivated land and thickness of the PKL.

Fig.2 Series connected Living PKL tree with connected Zn and Cu Plate

It is shown (Fig.2) that 7 living PKL trees were sat up together and then the voltage was cultivated. It is shown that the living PKL trees made electrochemical cell, because it obeys the roles of series and parallel combination. But it is seen that the cultivated voltage for series connection made by 7 living PKL trees are not same as 5.10 volt. It is found that the voltage was 3.04 volt. It has happened due to lose connection of the electrodes, instrumental error of the multimeters, insulation resistance etc.

II. Results and discussion:

Table-1 shows the cultivated voltage from living PKL plants. It also shows the variation of voltage with the variation of surface areas of Zn and Cu electrodes. It also shows the total embedded Cu surface area (226.66 cm^2) and the total embedded Zn surface area (230.99 cm^2) and the average total both Cu and Zn embedded surface area (228.82 cm^2)

Table-1: Table for Voltage Collection from Living PKL tree

	Serial Number	Embedded Surface Area (cm^2)		Voltage (Volt)	Average (Cu & Zn) area (cm^2)
		For copper	For Zinc		
Date 01.11.2019	01	28.60	40.12	0.76	34.36
	02	36.90	32.25	0.61	34.58
	03	39.10	31.00	0.73	35.05
	04	32.81	47.50	0.84	40.16
	05	42.64	32.24	0.61	37.42
	06	28.55	19.53	0.72	24.04
	07	18.06	28.35	0.83	23.01
		Total Copper Area = 226.66	Total Zinc Area = 230.99	Total Voltage = 5.10	Total (both Cu & Zn) average area = 228.82

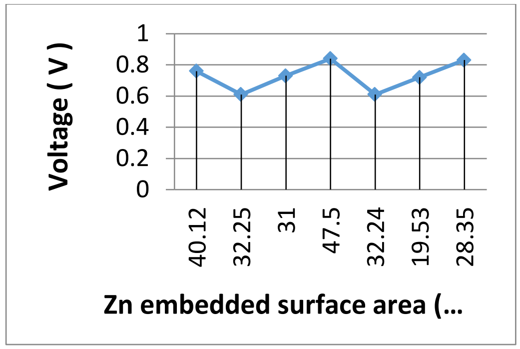

Fig.3: Variation of voltage with the variation of Zn embedded surface area (cm^2)

It is shown in Fig.3 about the Variation of voltage with the variation of Zn embedded surface area (cm^2). It is found that the voltages are 0.76 v, 0.61v, 0.73v, 0.84v, 0.61v, 0.72v and 0.83v for the Zn embedded surface area (cm^2) of 40.1 $cm^2$2, 32.25 cm^2, 31.00 cm^2,47.50 cm^2,32.24 cm^2, 19.53 cm^2 and 28.35 cm^2 respectively.

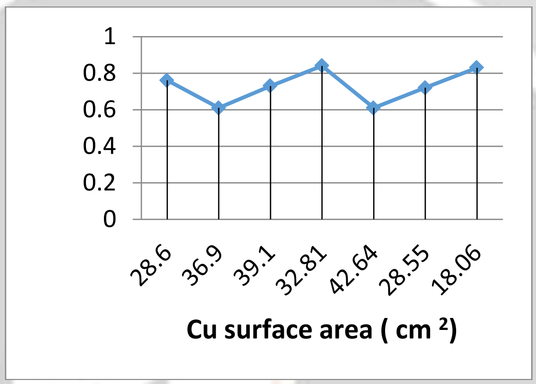

Fig.4: Variation of voltage with the variation of Cu embedded surface area (cm^2)

It is shown in Fig.4 about the Variation of voltage with the variation of Cu embedded surface area (cm^2). It is found that the voltages are 0.76 v, 0.61v, 0.73v, 0.84v, 0.61v, 0.72v and 0.83v for the Cu embedded surface area (cm^2) of 28.60 cm^2, 36.90 cm^2, 39.10 cm^2,32.81 cm^2,42.64 cm^2, 28.55 cm^2 and 18.06 cm^2 respectively.

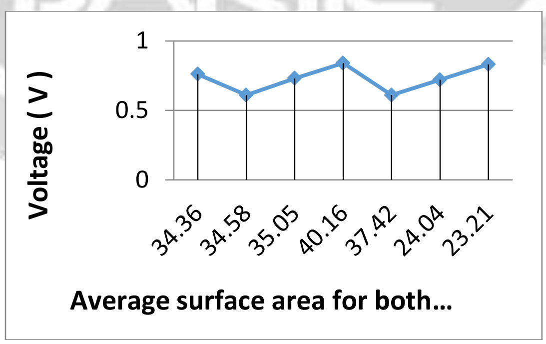

Fig.5: Variation of voltage with the variation of Average surface area for both Cu and Zn (cm^2)

It is shown in Fig.5 about the Variation of voltage with the variation of both Zn and Cu average embedded surface area (cm^2). It is found that the voltages are 0.76 v, 0.61v, 0.73v, 0.84v, 0.61v, 0.72v and 0.83v for both Zn and Cu average embedded surface area (cm^2) of 34.36 cm^2, 34.58 cm^2, 35.05 cm^2,40.16 cm^2,37.42 cm^2, 24.04 cm^2 and 23.01 cm^2 respectively.

Finally, it is shown that after Series connection the total Voltage becomes =3.04 Volt where before Series connection the total voltage was obtained = 5.10 Volt. So that the Voltage loss = (5.10 - 3.04) Volt = 2.06 Volt. Therefore, the Percentage of Voltage loss = $\frac{2.06}{5.10} \times 100\% = 40.39\%$. At last it can be said that the living PKL tree can make electrochemical cell.

IV. Conclusions:

The conclusions are given by the following:

•The cultivated voltage depends on embedded areas of the electrodes.

• For same voltage it is shown that the embedded areas of Zn and Cu have been fluctuated due the age of the living PKL, thickness of the living PKL and soil of the land.

• The living PKL electrochemical cell obeys the series and parallel laws of combination.

•The lose connection should be avoided

•The instruments should be errorless and calibrated

V. References

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