Title **: Production of Electricity from Plant Pots**

Objective **: To save energy**

Context: The unlimited use of energy resources leads to depletion and energy crisis in future. This is a crisis which poses a great threat to our existence on earth. Conservation of energy is the most urgent need to which we have to respond immediately. People are indifferent to this grave reality and respond only when there is scarcity or hike in the prices of fuel and gas. The intensity of energy crisis increases day by day with the growth of human population and the increase in consumption. There is not only a lack of understanding of the complexity of the causes but there is also a dearth of efforts to find a solution to the problem and to conserve energy.

The Department of physics has taken up the initiative for energy conservation by generating electricity from plants. It is a programme conceiving the production of electricity from plants. Though it is a very small initiative we believed that "small strokes fell great oaks". Success on a small scale will definitely inspire us to extend and take up the project on a large scale.

Practice: We aim to generate electricity from living plants without damaging them using zinc rod and copperplates. (Electrons are a waste product of bacteria living around plant roots – plants excrete organic matter into the soil which is broken down by bacteria. In this break down process electrons are released. It is possible to harvest those using inert electrodes and turn them into electricity, without effecting the plant growth in any way.) We checked the amount of power released from each plant and observed the variations in the amounts of energy released from different plants. We found that the fern plant produced one volt of electricity. Plants produced more power in the presence of sunlight and abundance of moisture.

Evidence of Success: We were able to generate electricity for lighting up the corridor of our department and this has enabled us to save power consumption.

Problems encountered: We found that when zinc plates were dipped in the plant pots they could immediately produce 0.8 volts of electricity. With the passage of time, we observed the voltage was decreasing.

Resources required and notes:- Plant saplings, pots, zinc rods, copperplates, connecting wire with crocodile lips.

Procedure:- Zinc rods and carbon rods were dipped in the plants pots and the voltage was measured. 0.8 volts of power was produced from each pot. 5.0 volts of power was harvested from six plant pots. We could light up an LED bulb with this power. We also observed that when three LED bulbs were connected in a parallel line, all the bulbs could be lighted up with the same voltage.

Future Plans:- Our ambition is to generate large amounts of electricity and to start testing methods for sound absorption based on previous research work if we can procure the equipment with the budget available to us. On article is ready to publish now.

- **Video link of the activity:**

https://drive.google.com/file/d/15hN01Fjr19BETX3_6k9Tuj9gMcFxbOaW/view?usp=drive_link