

## A Review Paper on ‘Chumbaki-Dravik Generator’

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**Abstract:** Day to day the demand of electricity is increasing a lot. To fulfill this demand and to eliminate disadvantages of traditional power generation technique many new techniques are being developed. Chumbaki-dravik generator is one among them. The Chumbaki-dravik generator technology provides attractive electricity generation idea. The chumbaki-dravik generator produces electricity without motion of any solid part. The chumbaki-dravik generator uses permanent magnets to produce electricity. The compactness of chumbaki-dravik generator makes it suitable for both large place applications for small place applications. In this paper discuss on Chumbaki-dravik generator technology including principle of operation, power extraction method is done. This technique is very useful to produce electricity with less cost.

**Keywords:** Chumbaki- dravik generator technology, compactness, permanent magnets, power extraction principle of operation

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### I. Introduction

Chumbaki-dravik power generator is a device which uses kinetic energy of fluid to produce electric current but for this the fluid must be good conductor of electricity. In this generator the electricity can be produced without using solid moving parts. The chumbaki-dravik generator uses permanent magnets to produce electricity. The power plant using this generator can require very less space and can have low capital as well as running cost. The chumbaki-dravik generator performs efficient and noise free operation. This chumbaki-dravik generator can be used instead of traditional electrical generator on any application. Due to this there will be decrease in capital cost of generator.

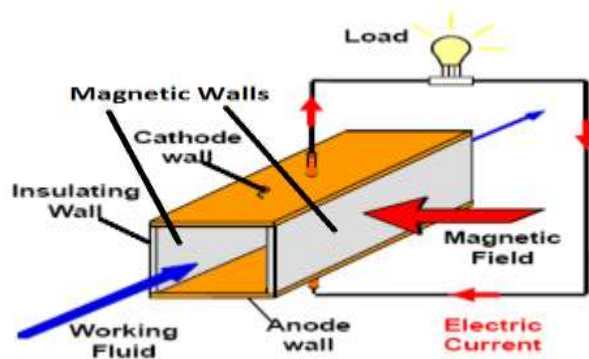
Now a day, scientists are thinking to eliminate the mechanical system and convert thermal, hydro energy in to direct electrical energy from past many years. Unfortunately, no system is yet developed in large capacity which can compete with conventional systems. In addition to this the efficiency of such conversion remained considerably poor(less than10%) therefore; these power generating systems are not developed on large scale. Here the role of chumbaki-dravik generator can solve the problem.

### II. Principle of Operation

- The principle of Chubaki-dravik generator is based on faraday's law of electromagnetic induction.
- It states that, “Voltage is induced in circuit whenever relative motion exists between a conductor and a magnetic field and the magnitude of this voltage is proportional to the rate of change of the flux”

### III. Construction

- The chumbaki-dravik generator has very simple arrangement. It has simple and less parts which makes it a easy to manufacture system.



- Following are the main parts of chumbaki-dravik generator.

### **1. Pipe**

The pipe has a simple rectangular cross-section. A pair of opposite walls of this chumbaki-dravik generator is of magnetic material. Among remaining two walls one is of anode another is of cathode material. All four walls are firmly joined together such that it would form a leak proof pipe. The inner surface of pipe is made smooth such that the motion of fluid flowing through it will not be restricted due to friction.

### **2. Insulation**

The piping arrangement is insulated by using a good insulating material. This would cover all current carrying parts for operational safety.

### **3. Terminals**

Two terminals are provided on anode and cathode wall of chumbaki-dravik generator. The current is taken out of the walls using these terminals.

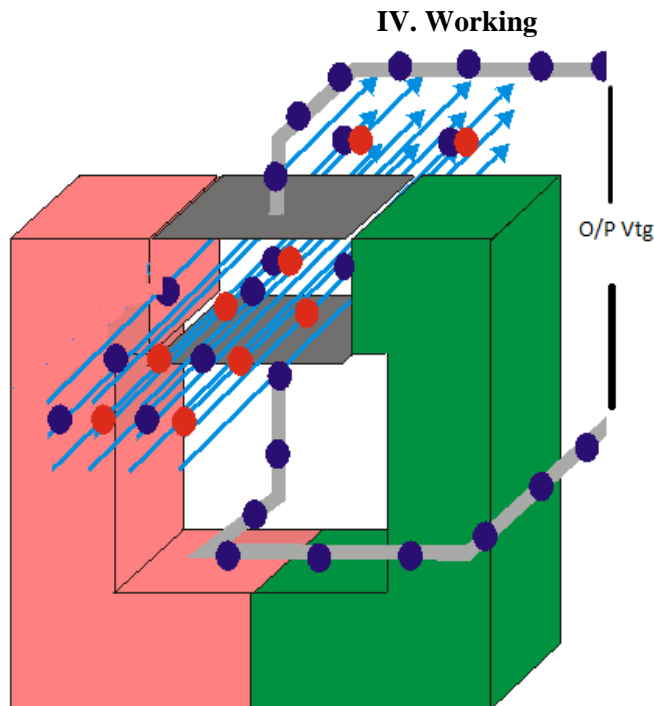
### **4. Working fluid**

Working fluid used in chumbaki-dravik generator should be a good conductor of electricity. It is having low viscosity such that it will easily flow through the magnetic pipe.

### **5. Valves**

It is necessary to control the output for this purpose valves are introduced into the fluid flow path. Opening and closing of valves would control the fluid flow.

### **6. Other accessories**



- As we open the valve fluid is allowed to enter into the pipe from one end. Due to the kinetic energy of fluid, the fluid will cut the magnetic flux produced by magnetic walls.
- Due to this relative motion between fluid and magnetic field emf will be generated into the working or flowing fluid.
- The direction of current flow can be analyzed by using Flemings right hand thumb rule using this rule  
The thumb is pointed in direction of motion of conductor relative to magnetic field  
The first finger is pointed in direction of magnetic field (from north to south)  
Then second finger represents the direction of induced or generated current within the conductor
- The current flowing into the fluid present in pipe first travels from region with lower electrical potential to region of higher electrical potential. After that current is taken out from these walls with the help of electrical terminals.
- The voltage that would be available at output terminals will be DC

#### **V. Advantages**

- The chumbaki-dravik generator consist of very less numbers of parts and has simple construction
- The reliability of the system is high
- The chumbaki-dravik generator can be used with practically possible zero running cost
- The chumbaki-dravik generator performs considerably smooth operation
- The chumbaki-dravik generator is suitable for both small as well as large power plants
- It has compact design
- It is user a friendly device
- It is a very good option to get dc output directly

#### **VI. Disadvantages**

- The working fluid must be a good conductor of electricity
- It generates only DC current.

#### **VII. Conclusion**

The chumbaki-dravik generator is a very good device to produce electricity. Due to its simple construction, flexibility of operation it can easily replace conventional generator. It has low capital cost and no running cost. It can be used for all power plants from a small size to a very big size. The chumbaki-dravik generator has a compact design so it would be easy to fit in small place. The chumbaki-dravik generator gives us directly DC current without any intermediate digital converting device.

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