ISSN: 3068-0352

Katalyst Publishers

Open Access

Journal of Current Trends in Physics Research and Applications

Short Commentary

# Device that converts gravitational field (gravitational field) into thermal energy

## Technical fields: physics, energy.

**Dr. Chen Jun**

Shahe Middle School, Chuzhou, 239060, China

***Corresponding Author:**

**Chen Jun,** Shahe Middle School, Chuzhou, 239060, China

E-Mail: 13485751896@163.com

Received Date: 10th Oct, 2025

Accepted Date: 20th Oct, 2025

Published Date: 24th Oct, 2025

### Abstract

What is energy? In physics, an object possesses energy if it has the ability to do work. Work here refers to mechanical work W = FS (electrical work is essentially mechanical work). With the recent introduction of dissipated work $W = Q = CF^2t$, work can now include both mechanical and dissipated work. This allows for a more comprehensive definition of energy: any object possesses energy if it can exert a force on another object. Although the gravitational field is not a specific object, any object in the gravitational field is affected by the gravity exerted by the gravitational field, so the gravitational field has energy, and energy can be developed and utilized. The first type of development is the hydropower generation we are familiar with, using W=Fs=Gh=1/2mv2. The essence of hydropower generation is not to utilize the so-called potential energy of water, but to develop the gravitational field energy. If there is no gravitational field and gravity, no matter how much the mass of the water is or how high the water level is, the water cannot move downward to obtain kinetic energy. Therefore, potential energy is not real energy. The essence of dissipated work is the thermal effect of force, a natural phenomenon that is prevalent in mechanical systems. Q = W = CF2t, P = CF2 is the heat generation power of force, and the heat generation power is proportional to the square of the force. This provides a new idea for the research and development of gravitational field energy. With the help of F = ps and liquid pressure p = ρgh, we can obtain strong pressure, increase the heat generation power, and use heat energy to generate electricity. The question is what kind of energy conversion equipment is this? [1-3].

### Invention Summary:

In physics, there's an equation of state: T = F(p, v) or F(T, p, v) = 0, encompassing gases, liquids, and solids. For example, for an ideal gas, pv = nRT. For liquids, while the absolute temperature T and pressure p are not directly proportional when the volume v remains constant, it's clear that the higher the pressure, the higher the temperature. Using the liquid pressure equation, a continuous high-pressure state can be achieved. The substance (water) in a sealed container can then be kept at a constant high temperature. By adding a water jacket to extract the heat, electricity can be generated.

### Illustration:

See the accompanying drawings for the conversion device. The conversion device consists of three main parts: a pressure-resistant hollow metal ball and a hydraulic hollow column. The bottom of the hollow column communicates with the bottom or lower portion of the hollow metal ball, with a valve (three) installed between them. When the hollow metal ball is filled with liquid (water) and the hollow column is filled with liquid (mercury), the valve is opened. The higher the liquid column, the greater the pressure on the liquid in the ball, and the higher the temperature. Continuous high pressure and high temperature will result, which can replace thermal power generation.

### Specific Implementation:

The present invention can be implemented in four predefined phases: a heating phase, a high-temperature phase, a trial phase, and a production phase. The heating and high-temperature phases are called the trial phases, and they record data and explore the laws of natural heating, which are milestones in both scientific and technological terms.

### How is the Heating Stage Implemented?

The heating stage involves maintaining a significantly higher temperature than normal at room temperature, maintaining this temperature, and exhibiting a clear and sustained heat release process. As long as our scientists and engineers believe in this technology, implementing it shouldn't be a major obstacle.

### For example:

For the design and description of the hydraulic hollow column, since the size of the liquid pressure is determined by the liquid density and height, and has nothing to do with the inner diameter or the cross-sectional area of the inner diameter, the hydraulic hollow column (tube) is first set to a steel pipe with an inner diameter of 1 cm, and the length can be 10 meters or 20 meters. The size of the outer diameter is determined by the size of the pressure it can withstand, so the size of the outer diameter can be selected from a variety of specifications, and mercury is the best choice for the liquid.

How high does the hydraulic hollow column need to be during the heating phase? Pressures above 100 MPa are defined as ultrahigh pressure in high-pressure physics research, roughly 1,000 atmospheres. Designed to meet this requirement, the height of the mercury column is approximately 760 meters. Therefore, the steel pipe should be designed to a height of 800 meters. How should it be assembled? Working from the bottom up, the first step is to install the L-shaped bent pipe at the bottom, secure it to the base, and install a valve. The entire installation process involves pipe connection techniques, including welding and connection techniques similar to those used for water pipes. Given current technological conditions, this isn't a difficult task, but the challenge is to withstand ultrahigh pressure. If a height of 8 kilometers or higher is required, it's also straightforward and much easier than a lunar landing. The design process naturally involves using stay cables to stabilize the steel pipe, and installing a funnel at the end of the 800-meter-high pipe to facilitate the addition and storage of mercury.

Design and installation of pressure-resistant hollow metal balls. It is best to use molten steel to cast the hollow metal balls in one go with an interface (I wonder if it is feasible?). The inner diameter is 1 meter and 3 balls, 2 meters and 3 meters respectively. Before assembly, several iron rings are welded on the surface of the steel balls for easy lifting. The ports of the steel balls are facing upwards and filled with liquid respectively. The three steel balls with an inner diameter of 1 meter are filled with mercury, water and hydraulic oil respectively, and the other two are filled with water. After the port is connected to the folded tube, the folded tube mouth is slightly upwards, and the folded tube is filled with the corresponding liquid again, and sealed with a cork with a diameter of 1 cm. How do you connect the five steel balls to the valve ports? Since this is a test phase, we need to compare which liquid produces the highest ball temperature and the highest heat output. Therefore, at least five steel balls are needed. Using a three-way or four-way water pipe connection, connect all five balls to the valve ports. Use a crane to lift the balls, invert them, adjust their positions, install and connect them, and secure them with brackets. The cork's purpose is to prevent the liquid from leaking out when the steel ball is inverted. It utilizes atmospheric pressure and doesn't need to be removed during installation. Why is the steel ball installed upside down? Or why is the hydraulic pipe connected to the bottom of the steel ball? It prevents heat and liquid convection.

After installation, the next step is testing. Open the valve and inject mercury into the 800-meter-high steel pipe. This can be done in six time periods, with bottom pressures at 200, 400, 600, 800, 1000, and above 1000 atmospheres. Each period lasts three days. The surface temperatures of the five steel balls are recorded separately. It would be even better if the heating power of the five steel balls could be directly calculated during each of the six time periods.

Organize the data, find the relationship between the temperature, heating power and pressure, the size of the ball and the type of liquid, and deduce the design plan with a temperature above 200°C and a higher heating power, and carry out the second phase of high-temperature testing. Similarly, carry out the third phase of trial testing, which is to transform a thermal power plant and test the effect. If the required mercury column is too high, and the difficulty and risk are too great, I have an alternative plan with a more complicated structure. The experimental phase has greater scientific significance. First, it discovered the existence of the thermal effect of gravity, which provides a basis for reasonably explaining the high-temperature heating phenomenon inside the Earth and other planetary satellites. It also shows that the thermal effects of other forces also exist. At the same time, there are many scientific problems that need to be studied and solved. The experimental phase simulates the Earth's heating mechanism. For example, if the height of the mercury column is 800 meters, for five steel balls, it is equivalent to creating five mercury balls with a radius of 800 meters in space, with gravity acceleration equal to that of the Earth, and squeezing the liquid inside the five balls. Secondly, a simple device can achieve the technology of converting gravitational field energy into thermal energy, demonstrating to the world that gravity is an inexhaustible, green, and widely available free energy source.

### References


1. Chen J (2022) Use the Law of Rotation Extreme Value to Prove That the Moon Does Not Rotate, Innovations in Science and Technology 2.
2. Chen J (2019) The Motion of Celestial Bodies Complies with Conservation of Angular Kinetic Energy. International Journal of New Developments in Engineering and Society 3: 158-171.
3. Chen Jun (2014) discovered that celestial motion obeys the law of conservation of angular kinetic energy, Proceedings of the Annual Conference of the Chinese Society of Astronautics. Xinhua Publishing House 2: 85-91.