Karpen’s Electric Pile

Contents

1.The dream of energy without limits

For centuries, inventors have been trying to build a machine capable of powering itself. The idea of a machine that can create its own continual motion without losing energy has been a dream of mankind for 800 years. The challenge is to overcome motionlessness, create energy from nothing, and replace toil – almost like an energy-related Garden of Eden.

Figure 1 Karpen's pile

Scientific historian Ernst Peter Fischer has recognized the drive for perpetuum mobile as a true quest. In his view, the fascination with incessant motion is an inherent part of man's nature:

And he hasn't done a bad job of it either – inventing all kinds of machines to overcome great distances on land, sea and in the air, surveying the astronomically large world with a telescope, and scrutinizing the atomically small with a microscope.

"Man is the one animal capable of recognizing his limits and seeking to overcome them."

Practical setbacks and even theoretical contradictions have done nothing to restrain this drive, reckons Fischer. For to create a device of eternal motion is to cross the ultimate frontier: **energy without limits**.

Many have tried and few have succeeded, because the Big Energy Companies are always around the corner to keep the dream from coming true, as that would mean the end of them.

But more and more discoveries are being made and one of them is the amazing Karpen's Pile, that we are about to discover inside this book.

2.The Perpetual Battery

Figure 2 Vasile Karpen and his pile

The "Dimitrie Leonida" National Technical Museum from Romania hosts a weird kind of battery. Built by Vasile Karpen, the pile has been working uninterrupted for 60 years.

"I admit it's also hard for me to advance the idea of an overunity generator without sounding ridiculous, even if the object exists," says Nicolae Diaconescu, engineer and director of the museum.

The invention cannot be exposed because the museum doesn't have enough money to buy the security system necessary for such an exhibit.

Half a century ago, the pile's inventor had said it will work forever, and so far it looks like he was right. Karpen's perpetual

motion machine now sits secured right in the director's office. It has been called "*the uniform-temperature thermoelectric pile*," and the first prototype has been built in the 1950s. Although it should have stopped working decades ago, it didn't.

The scientists can't explain how the contraption, patented in 1922, works. The fact that still puzzles them is how a man of such a scientific stature such as Karpen's could have started building something "that crazy."

The prototype has been assembled in 1950 and consists of two series-connected electric piles moving a small galvanometric motor. The motor moves a blade that is connected to a switch. With every half rotation, the blade opens the circuit and closes it at the start of the second half. The blade's rotation time had been calculated so that the piles have time to recharge and that they can rebuild their polarity during the time that the circuit is open.

The purpose of the motor and the blades was to show that the piles actually generate electricity, but they're not needed anymore, since current technology allows us to measure all the parameters and outline all of them in a more proper way.

A Romanian newspaper, *ZIUA* (The Day), went to the museum for an interview with director Diaconescu. He took the system out of its secured shelf and allowed the specialists to measure its output

with a digital multimeter. This happened on Feb. 27, 2006, and the batteries had indicated the same 1 Volt as back in 1950.

They had mentioned that "unlike the lessons they teach you in the 7th grade physics class, the 'Karpen's Pile' has one of its electrodes made of gold, the other of platinum, and the electrolyte (the liquid that the two electrodes are immersed in), is high-purity sulfuric acid." Karpen's device could be scaled up to harvest more power, adds Diaconescu.

Karpen's battery had been exhibited in several scientific conferences in Paris, Bucharest and Bologna, Italy, where its construction had been explained widely. Researchers from the University of Brasov and the Polytechnic University of Bucharest in Romania have even performed special studies on the battery, but didn't pull a clear conclusion.

Figure 3 National Technical Museum of Romania

"The French showed themselves very interested by this patrimonial object in the 70s, and wanted to take it. Our museum has been able to keep it, though. As time passed, the fact that the battery doesn't stop producing energy is more and more clear, giving birth to the legend of a perpetual motion machine."

Some scientists say the device works by transforming thermal energy into mechanical work, but Diaconescu doesn't subscribe to this theory.

According to some who studied Karpen's theoretical work, the pile he invented defies the second principle of thermodynamics (referring to the transformation of thermal energy into mechanical work), and this makes it a second-degree perpetual

motion machine. Others say it doesn't, being merely a generalization to the law, and an application of zero point energy.

According to recent studies, Karpen was right and the principle is 100% correct and what that means is that this will revolutionize all of the physics theories from the bottom up, with hard to imagine consequences.

3.Who was Nicolae Vasilescu Karpen?

Nicolae Vasilescu Karpen was born in the Romanian city of Craiova, in 1870. First, he pursued his university studies at the "National School of Roads and Bridges" in Bucharest and became an ordinary engineer in the field of highway and railway construction.

He studied the engineering just a short time, as he felt attracted by the electricity and its applications (very new and impressive in that age, we must remember), he left the country for Paris. Here, Dr. Karpen graduated from both 'L'Ecole Superieur d'Electricite" and the Science Department of the University of Paris, in 1902 (attending them simultaneously).

Figure 4 Nicolae Vasilescu Karpen

His first important scientific result is offered to us by his doctoral dissertation, in 1904: "The Conclusive Proof for the Rowland's Effect," very uncertain and disputed at that time. The proof consists of experimental evidences and the adequate theoretical considerations, associated with them.

Remember, the Rowland's Effect means that the electrically-charged bodies which move uniformly, generate a magnetic field being entirely equivalent to a conduction-current magnetic field, and the corresponding quantitative laws.

Dr. Karpen did not stay in France too long. He came back to Romania in 1905, where he started a huge scientific and professorial activity. Most important, he was the main founder of the Polytechnical University in Bucharest in 1920, and its first rector (chancellor). Of course, he dealt not only with electromagnetism (EM), but within the EM, he received a long series of original results, scientifically and technically momentous, at least, for Romania of those times.

It is really important that the favorite concern of Dr. Karpen became electrochemistry (after 1920).
Dr. Karpen was among the first men of science who rejected the concept of magnetic mass and substantiated the EM theory without it.

At the same time, he was initially an enthusiastic supporter of the second principle of thermodynamics and (according to some texts about him, it seems to be quite so!) and became a world-recognized authority in the domain of the second principle.

He delivered lectures on the second principle: (with experimental demonstrations in front of the audience) at French Academy, where he was invited many times.
But, little by little, a dramatic turning occurred, the evolution of his thorough electrochemical research, full of unexpected laboratory- results, compelled him to change his opinions, to be against the second principle and against the renowned theory of Walter Nernst.

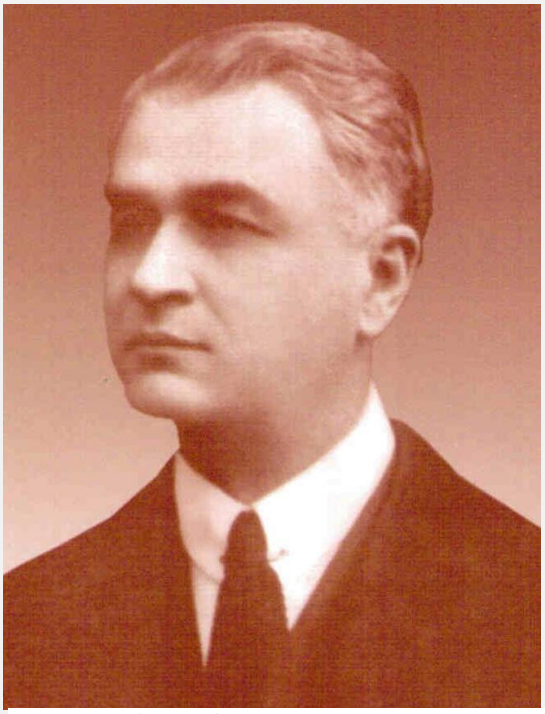


Figure 5 Nicolae Vasilescu Karpen

Dr. Karpen admitted the existence of free electrons in liquids, and especially in electrolytes, since 1923 (maybe the first to do so!).

Such a hypothesis was judged to be absurd in those years, but nowadays, it is experimentally proven, of course, within other context (1943: the fast photospectrometry; 1950: the radiochemistry).

4.A real perpetuum mobile is presented

Applying the new facts and concepts he embraced, Dr. Karpen created a little toy, a real perpetuum mobile device of the second type, as it is said.

So, in 1926 (remember this year, almost 70 years ago!) he dared present his new toy to a large audience at the French Academy. The toy was a simple pair of the so-called concentration cells (or piles) powering a tiny relational motor.

Each cell was a closed glass vessel having two (different) gold electrodes and filled with sulfuric acid. The surfaces of the electrodes were adequately processed by specific mechanical and electromechanical procedures.

Dr. Karpen claimed that the electrodes will never be sulphated and the sulfuric acid will never be spent. The motor will be continuously powered by the two cells and its motion will be everlasting. The cells will run without any second source of heat (the cold source), just from a single source of heat (the hot source) that is merely the environment.

Immediately, the Romanian professor lost his respectability. He was asked, sarcastically:

"Could you at least get into motion an elevator or a small car?" Of course, he couldn't. The power of his demonstration toy was just several watts and nothing more. The scientific public and also the common public refused stubbornly to take into consideration any possibility of truth in Dr. Karpen's claims.

And his lecture was soon forgotten by everyone and his papers and books are almost never read in western countries. However, here in Romania, Dr. Karpen kept his reputation as a scientist, though his perpetuum mobile was also neglected or rejected and forgotten.

The first concentration cell device would have been made by Karpen in 1923 (remember again the year—almost 73 years ago! It is the year of his new electronic hypothesis). Professor Karpen had waited three years before he revealed his electrical perpetuum mobile to the scientific community, being completely aware of all his professional duties and involvements.

It is said that the Karpen device ran continuously (in France and in Romania) until the 1960's, unnoticed by the most scientists and not understood by the inquisitive onlookers (the "profanes").

A perpetuum mobile was displayed just in the upstairs lobby of the Romanian Academy Library in Bucharest, a place well-illuminated and much frequented by many people, having the known fate, unnoticed, not understood by all of the onlookers of any profession.

Prof. Karpen became a fellow of the Romanian Academy in 1922. In 1940, he retired from the Technical University (age 70), but he kept on with his scientific work. In 1946, the communist leaders expelled him from the Academy, using their standard stratagem.

They turned the normal Romanian Academy into the "Academy of the Popular Republic of Romania," controlled by communists and formed only from "politically sound personalities, well-devoted to the laboring people and to the Party..."

Nevertheless, he was brought back to the new Academy in 1955, when the Stalinist tempest became (a little) milder. How weathercock harlot the policy is!

Meanwhile,Dr. Karpen was appointed as researcher in the(newly modified) Physics Institute of Bucharest, where he worked fruitfully (between 1950-1955), despite his age. After his death in 1957 (in Bucharest) all the perpetuum mobile device(s) were shifted to the Technical Museum. Here it (they) ran later on,

maybe even for another decade, then it (they) disappeared without any trace.

5.The immortal pile

The mechanism, as far as they can tell, works like this: two piles are connected in series and they feed an engine that operates a switch connected to a palette, so every half rotation circuit palette open and close alternately, allowing the pile to charge.

Piles normally do not exceed a period of life more than 10 years, yet this invention stubbornly continues to function without signs that might stop.

According to the second principle of thermodynamics, a self-alimentation mechanism is not possible. Some theories say that because of the metals that are used for this experiment, gold and platinum, the pile can exceed its lifetime or that it uses ambient temperature to work, so it is not contrary to the principle mentioned above.

But the problem occurs when the pile is labeled by foreign scientists as a fuel cell itself when it is called by its inventor uniform temperature thermoelectric pile, or when, in 1944, Vasilescu-Karpen writes "Cells that contradict the second principle of thermodynamics law "which contradicts the observation that the author respects the thermodynamic principles.

The direction he followed is clear. He knew that he was going against the current generally accepted by the scientific community and continued his research.

People are generally very difficult to give up certain ideas and principles because they must then be reconsidered as well as all related concepts to that phenomenon or it can even affect their thinking on the environment.

It's too big a shock to some, and sometimes even violence may be a reaction against certain conceptions that contradict the generally accepted opinion.

An example is the following. Giordano Bruno, philosopher, humanist, was burned at the stake by the Inquisition, after six long years of detention and torture because he continued to claim that the universe is infinite and that the Earth is not the center of the universe, supporting the heliocentric theories of Copernicus.

New and radical ideas are cast aside, such as the establishment of such a mechanism to produce electricity continuously for six decades without stopping. So far no research has been done on Karpen's pile by no institution and no group of scientists to reveal the exact principles of operation of the pile.

A cheap renewable source of energy is not something to be discovered, because in our capitalist society that would not be profitable. It is a society based on consumption of scarce resources and, depending on their rarity and demand and supply, prices are set. Electricity must be expensive to explain costs. There is no profit in renewable energy. That's how the big greedy electric companies are thinking.

Putting these things aside, Karpen's pile may be found at the Technical Museum Dimitrie Leonida, but you cannot expect to see it. It's inside the museum director's safe, as instructed by the Police who argue that security measures are inadequate for such a priceless discovery.

If police admit it, why don't the other authorities? There is no interest in making this invention public.

But it's time to put an end to ignorance and this book will reveal all the information you need regarding the amazing Karpen's pile.

6.About electric piles

Now, before we explain exactly how this device works, you need to understand some things about electric piles and we have prepared a set of information to help you with that.

Those of you who already feel well informed about this aspect can skip this, but our recommendation is to read this once to refresh your memory.

Figure 6 Batteries

An electric pile (or simply pile or battery) is an electrochemical device converting energy from a chemical reaction into electrical energy.

In a stack of trade, the reactants are introduced to manufacturing. When they are exhausted, the voltage collapses and you must replace the battery.

Originally, the term referred to a device invented by the Italian scientist Alessandro Volta, consisting of a stack of washers of two different metals separated by an electrolyte impregnated felts.

By extension, the word "pile" means any non-rechargeable battery piece. However, the term "battery" means a set of elements connected in series to achieve a desired tension in a single package. But the phrase "rechargeable pile" does not make sense. Similarly, by abuse of language, the term "pile" is used to refer to other electrochemical generators: fuel pile, electric accumulator.

6.1.The functioning principle

The case of a stack houses a chemical reaction between two substances, one can easily transfer electrons (reducing material), and the other absorbs (oxidizing material). Each of these chemical reactions is called "half-reaction". When they are properly combined, they form a redox reaction.

Each half-reaction occurs in a solution which is an exchange of electrons. These are the electrons that are exchanged between the two substances. To balance electrical loads, connect the two solutions with a salt bridge system that allows the transport of certain ions while preventing the flow of solvent.
Each of the pair of oxidant / reductant is connected to an electrode. These electrodes, when connected to an electrical load determine the flow of an electric current causes; the chemical reaction is causing a circle of charges (electrons, ions).

A stack thus provides DC power. The (-) terminal of a cell corresponds to the anode where the oxidation reaction product which will provide electrons. The (+) terminal of a cell corresponds to the cathode where the reduction reaction product, which will consume the electrons.

This system is used for batteries and batteries with various electrochemical couples. An electrical battery may contain several of these pairs are connected in series, thereby increasing the voltage available at the battery terminals.

It is possible to craft a stack, for example by biting into a lemon a paperclip or nail (galvanized steel, zinc coated therefore) and a bare wire (copper) connected to a small lamp or a light emitting diode well chosen. Found in trade gadgets that use this principle, eg small quartz clocks which are powered by a potato.

6.2.Diagram of an electric pile

Each container serves as a half cell. In each half-cell, an electrode (symbolized by a brick) submerged. The two half-cells are also connected by a salt bridge, which serves to maintain the balance of electrical charges.

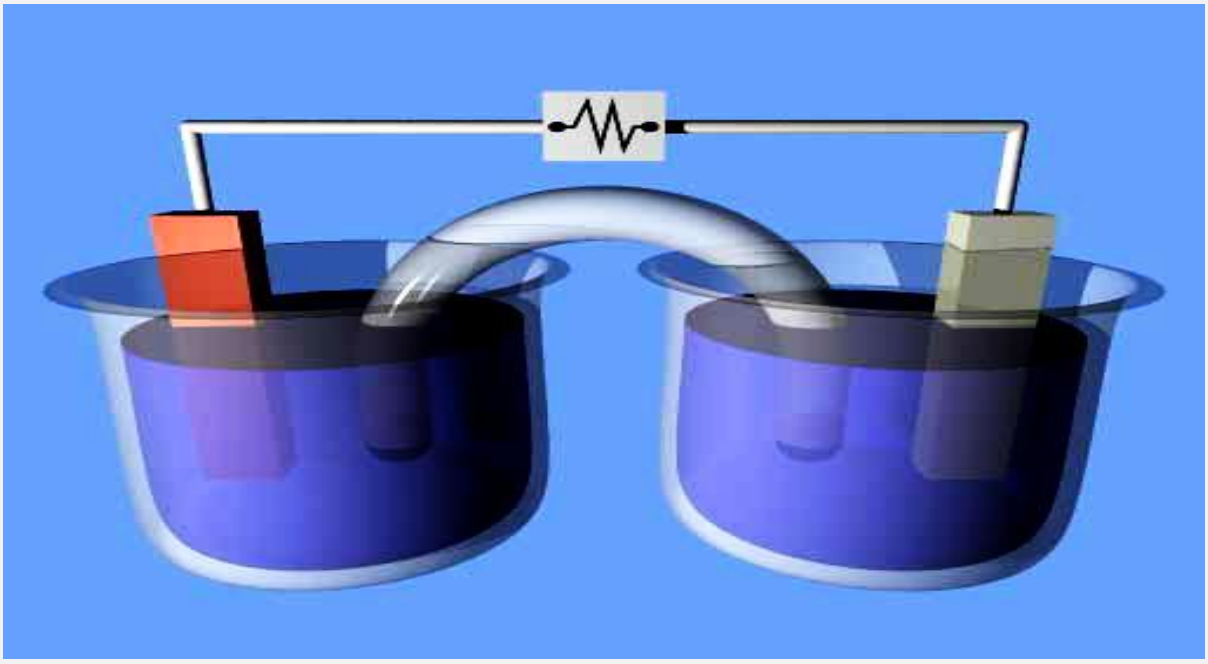


Figure 7 Two half cells connected by a salt bridge

This bridge allows the passage of ions, but not the solvent. When the electrodes are made of material having a sufficient potential difference, an electric current is established in the cathode to the anode, that is to say, the positive electrode to the negative electrode.

6.3.Short History

There are archaeological objects, such as those found in 1936, like batteries. This is the case of the electric battery of Baghdad that is dated between 250 BC. And 250 AD but they could be even older and explain so perfectly the veneer of many light antique jewelry.

They have worked with fruit juice or copper sulphate and modern experiments have validated the feasibility of the two models. There is no historical link between these objects and the development of contemporary batteries as well as the use of these would be the precious metal plating which would explain its minor use, confidential or related to use of forger (see Archimedes and the crown of King Hiero).

In 1786, Luigi Galvani observed that the muscles of a frog leg contract when in contact with metals, in the same way as when the branch on an electrostatic machine. He discovers that the reaction is stronger when using an instrument composed of two different metals.

In contrast with the work of Galvani (animal electricity), Alessandro Volta invented the first cell column March 17, 1800. These early systems consisted of a "stacking" of discs of two

different metals separated by discs felt soaked in acid, hence the name of the invention.

The column pressure on hard bottom causes drying cylinders felt that ultimately do not perform their office. Volta invented so quickly cell ring, consisting of smaller stacks connected in series.

A few months after the invention of Volta, two British chemists William Nicholson (1753-1815) and Anthony Carlisle (1768-1840) used the voltaic pile to produce the first artificial electrolysis (electrolysis of water) May 2, 1800.

Figure 8 voltaic pile

In 1802, William Cruickshank creates the cell trough having vertical blades of zinc and copper in a tank filled with insulating walls acidulated water. It is much easier to produce than the voltaic pile.

The voltaic pile, the first electric battery, invented by Alessandro Volta, is composed of alternating discs of zinc and copper separated by a cloth soaked in brine.

6.4.Polarizable piles

Between 1813 and 1815, William Hyde Wollaston develops the Wollaston battery in which the copper electrode surrounds the zinc electrode. This doubles the electrode surface and extends the operation of the cell. These batteries suffer first effect of a malfunction: the polarization.

The oxidation-reduction reaction causes an accumulation of by-products that interfere with the operation of the cell. In these zinc-copper piles is the reduction of the acid of the electrolyte which produces a release of bubbles of hydrogen on the copper to prevent the passage of current. After some time, it is necessary to clean the stack of these deposits to allow it to continue to operate.

In 1813, Napoleon Polytechnic provides a galvanic battery of 600 pairs of copper and zinc, occupying 54 square meters. Humphry Davy Cruickshank built a stack consisting of 200 and 2000 troughs couples Royal Institute in London. With these monumental batteries it was possible to obtain intensities of 10 amps or powers of the order of tens of kW.

6.5.Non-polarizable Piles

In non-polarizable batteries, the products of the oxidation-reduction reaction used, does not adversely affect the electrochemical properties of the assembly.

In 1829, Antoine Becquerel creates the first cell in two separate liquids enclosing the zinc plate in an acid solution in a large intestine of beef, which separates it from the copper electrode placed in a bath of copper sulphate. Generation of hydrogen is replaced by an accumulation of copper on the walls of the cathode.

The principle is improved in 1836 by John Frederic Daniell replacing the beef intestine by a porous earthenware vase. The Daniell cell is the first to provide a sustainable source of energy.

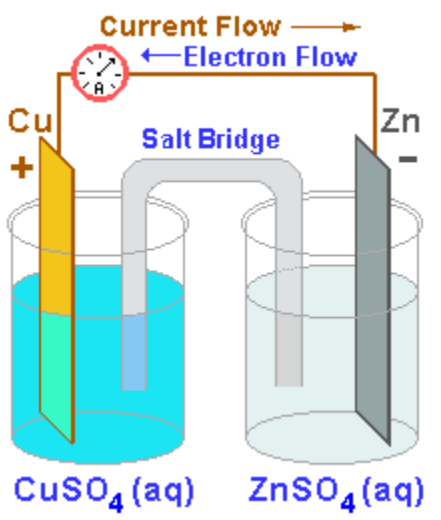


Figure 9 The Daniell cell

The principle of the Daniell cell is improved: follow several technological improvements, such as batteries Callaud to be used by telephone companies in the 1860s.

Johann Christian Poggendorff in 1842 invented the cell bichromate: it releases oxygen, which recombines with hydrogen responsible for the polarization.

Established in 1850, Grenet battery is a battery in one liquid with carbon electrodes and amalgamated zinc (immersed in mercury) in a sulfuric acid electrolyte and chromed.

When the battery has not been used, it was necessary to remove the zinc electrode solution to preserve it. Various improvements (battery Found Chardin battery, battery Voisin and Dronier ...) will follow to isolate the electrode.

These bottle-batteries will be used until the early twentieth century: the power and high voltage batteries have long been appreciated dichromate in the laboratory.

They were just used as domestic battery because of the toxicity of dichromate and maintenance problems of the electrode.

6.6.Cell depolarization

Figure 10 Button batteries

The cell depolarization is using a reducing agent to remove the reaction products which are formed at the cathode.

The first cell depolarization was invented in 1838 by William Robert Grove. It replaces the copper and platinum using nitric acid (nitric acid called at that time). It gets expensive but a powerful battery because platinum is a rare metal.

In 1843 Robert Wilhelm Bunsen replaces platinum coal which significantly reduces costs. But nitric depolarization causes toxic fumes which makes the use of these batteries inconvenient.

In 1867, Georges Leclanché created the first solid cell depolarizing: it contains

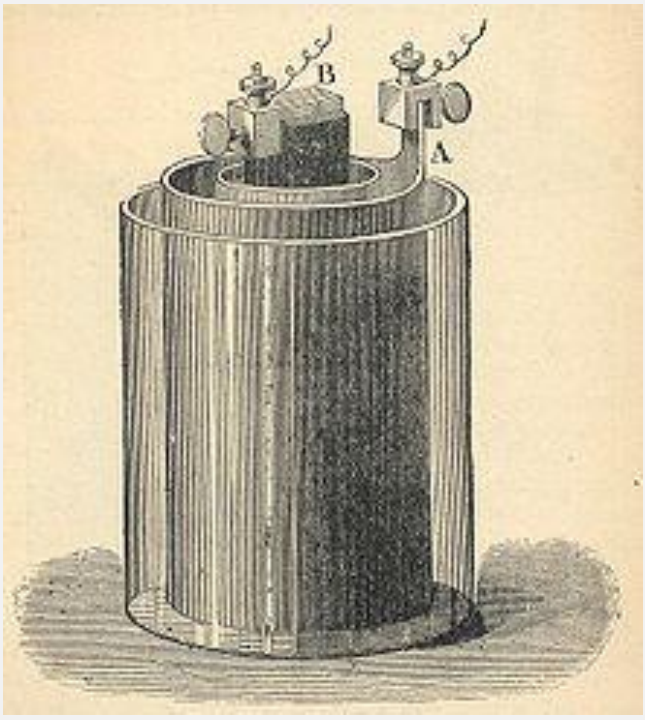


Figure 11 Bunson battery

manganese dioxide. Leclanché battery is less powerful than the bottle but battery requires no maintenance (she "does not drain when not in use" as the advertising of the Wonder battery says).

In 1888 Carl Gassner invented the dry cell in the gelling solution of ammonium chloride with agar-agar. With some improvements, this dry battery is always used in the XXI century.

Samuel Ruben and Philip Mallory create the mercury battery during the Second World War. The first public alkaline battery will be designed by Lewis Urry, Karl Kordesch and PA Marsal in 1959 to Union Carbide.

In 1970 the first lithium batteries, which can replace the zinc with a more reducible metal, are being developed. They are marketed in 1977.
Cells were used as references to define a standard voltage before being dethroned by a measure based on the Josephson Effect: the Daniell cell, then the cell Clark invented in 1872 by Josiah Latimer Clark was employed until 1905, then it was replaced by the Weston cell until 1972.

6.7.Concentration piles

There are also so-called stacks of concentration which are electrochemical devices such as batteries (two solutions and a salt bridge) which draw their energy from the difference in concentration of a solute in a solution to another. Solutions and anodes are of the same type. This is a simple method to produce electricity. This type of battery is mainly involved in the metallurgical industry in the galvanizing and the study of corrosion.

Karpen's pile was considered a concentration pile, although electrodes are different. They are from Au and Ptand the solution is one - concentrated sulfuric acid, which is far from the definition. Moreover, there is no salt bridge between the two vessels which means that there are two distinct elements.

6.8.Types of batteries - criteria

Most photovoltaic cells are limited to 1.5 V, due to electrochemical potentials of components. Cells lithium can provide higher voltages.

By capacity

The capacity of a battery is often expressed in ampere-hours (Ah = 1 3600 coulombs). If a battery can provide one ampere (1 A) of current for one hour, it has a capacity of 1 Ah. If it can provide 1 A for 100 hours or 2 A for 50 hours, etc.., has a capacity of 100 Ah. It depends directly on the amount of electrolyte and electrode material in the stack.

By Format

The format of the batteries is standardized by the International Electro-technical Commission (IEC) and the American National Standards Institute (ANSI). While the IEC has become a standard, a number of names specific to battery manufacturers continue.

By technology

Figure 12 Battery

Since December 1998, mercury batteries are banned in Europe (Directive 98/101/EC) and the United States for environmental problems. There are three major technologies of consumer batteries:

- 1.5 V alkaline battery (⊖ Zn / Zn $(OH)_4$ / K + OH / MnO(OH) / MnO_2 / C ⊕).
- Carbon zinc battery saline 1.5 V. For devices with low needs (⊖ Zn / Zn / NH_4+ Cl / MnO(OH) / MnO_2 / C ⊕).
- 1.5 V lithium battery (also called L91), able to maintain the voltage for a long time and to provide a high current.
- There are also silver oxide batteries (some button batteries for watches) or zinc-air batteries (especially used in hearing aids) (⊖ Zn / ZnO // Ag_2O / Ag / C ⊕).

6.9.Battery Capacity and discharge

Figure 13 An apparatus for checking the voltage of a battery

The more material electrolyte and electrode in the cell, the greater is the capacity of the cell. Thus, a small cell has less capacity than a larger one, compared to chemical technology, because it develops the same open-circuit voltage.

Because of the chemical reactions in the cells, the capacity of a battery depends on the conditions such as the discharge current (which can vary in time), the cutoff voltage of the user apparatus, the temperature and a few other factors.
The theoretical capacity of a battery, as defined by the manufacturer is 20 hours (discharge time) multiplied by the current that the battery can supply during this period.

It is observed at 20 ° C. on standard equipment. Its mention is not required on the packaging and in fact, it is very rarely mentioned a stack declared 100 A · h will give 5 A over a period of 20 hours at normal room temperature. By cons, if already discharged 50 Ah, it's because it has a capacity smaller than what is said.

The relationship between current, discharge and capacity for a lead acid battery is approximately determined by the law of the Peukert modeling the capacity of a battery as a function of current output:

$$t = \frac{Q_P}{I^k}$$

Figure 14 Function of current output

where:

Q_P is the discharge capacity at 1 amp.
*I*is the current supplied by the battery in Amps
*t*is the time the battery can hold.
k is an empirical constant of the order of 1.3.

For low power, self-discharge must be included.

In practice, a battery is more effective if it is discharged with a low intensity. For a battery which has a relatively high self-discharge, the self-discharge may consume the majority of the battery capacity. Note that all batteries discharge over time, even if they are not used.

There are technologies that allow activated cells to delay the start of the reaction. They are for example used in safety features (airbag beacon boat, etc.) or in certain military applications. This is also the case of zinc-air button cells. Tab removal closes the item before putting it into service.

The value in ampere-hours is not comparable unless forsimilar tensions. In DC the energy is the multiple of intensity and time by tension. We thus obtain 1 Wh x Ah ↔ 1 ↔ 1 V 1 A x 1 hx 1 V. For the same value in Ah, a 3V battery can provide twice as much energy as a battery of 1.5 V.

By convention, it gives the ability as it can sustain the intensity for ten hours up to 80% of its nominal voltage. Indeed, the higher the intensity, the greater is the rapid depolarization of the cell.

6.10.How batteries are used

Many batteries are used in groups of 2, 3, 4 or 6 in series. The performance of a battery assembly connected in series is that of its weakest link. In addition, if an item was less responsible than others, it is traversed by an electric current due to other batteries (which would be to load it backwards).

The most effective protection is the interruption of the circuit when the voltage supplied by the battery falls below a certain

threshold. For reasons easy to understand, battery manufacturers recommend changing the all the batteries at the same time with the same type of battery.
On average, the batteries are discarded when they still have a third of usable energy, and 1/10 would still be almost new. Indeed, electronic devices (digital camera, MP3 player, etc.) need a minimum voltage to operate.

However, the voltage drops over the entire discharge, but at a different rate depending on the item. Cells still possessing some capacity can then still be used for less demanding power devices (alarm clock, toy, flashlight, remote control, etc.).

From a scientific point of view, redox pairs of batteries (the anode and cathode) are partially reversible. Inverse chemical reactions are possible. The voltage drop of the battery, which naturally occurs during the discharge, can be reversed by the injection of a current, which will favor the reverse reaction.

This explains that alkaline batteries can be reused up to several tens of times in certain conditions: Do not let the voltage drop below 1.25 V and do not charge beyond 1.70 V at a current of C/10. Recharging the zinc battery is also possible but more random, the case of zinc does not restore.

This practice is not recommended by the manufacturers, who warn of a risk of overheating batteries, explosion or leaking acid. There are devices that implement the partial reversibility of chemical reactions that occur during discharge of the batteries. These devices allow alkaline batteries to be reused several times and also help reduce the current waste of alkaline batteries.

Note that heating a battery does not regenerate it. But to leave it at rest allows the depolarizing action, releasing the cathode products that block the absorption of electrons.

6.11.Battery recycling

The batteries are hazardous waste and must be treated with caution. They contain metals (nickel, cadmium, mercury, lead, iron, zinc or lithium), some of which are toxic and harmful to the environment since no battery is biodegradable.

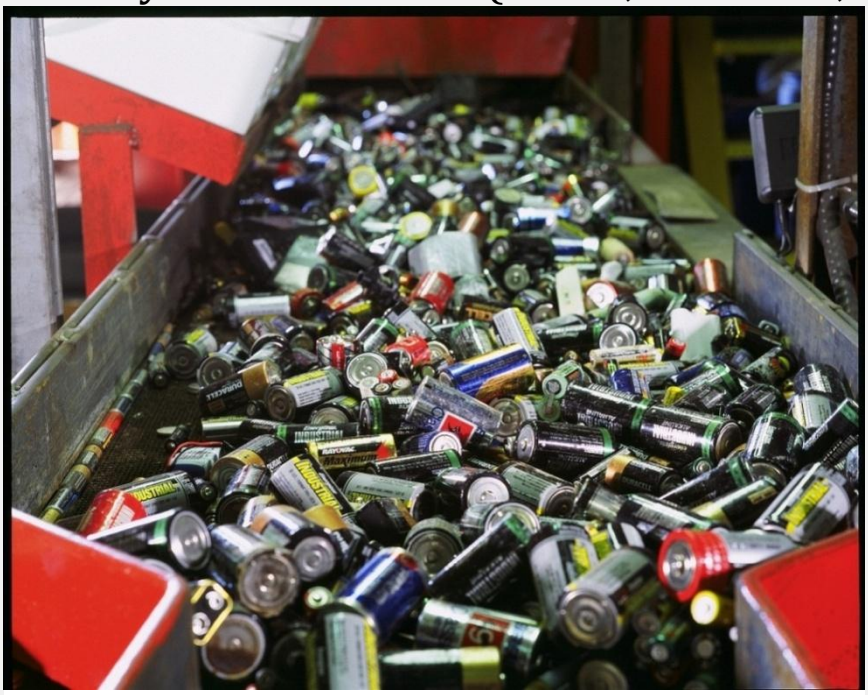


Figure 15 Recycled batteries

The main direct threat to humans, by far, is swallowing by young children. If the constituents of the cell

are released into the digestive tract, they can cause poisoning. Medical care can usually prevent the worst, but unfortunately we deplore the deaths of young children. We must be extremely vigilant, especially with small batteries.

Alkaline batteries no longer contain heavy metals (except trace), the law prohibiting it for years. However some button cells contain mercury which is a hazardous heavy metal. Manufacture and marketing of Ni-Cd batteries, which contain cadmium was banned, unless an exception.

The batteries should not be thrown in the trash, but must be brought to a collection point (in shops or other public buildings such as schools, or firms). In fact they contain toxic substances.

In many countries, vendors that sell batteries are required to take them back once used. The batteries must then be recovered or eliminated.

Recycling can recover reusable metals (iron, manganese, zinc and mercury mainly). But the batteries are 100% recyclable, and residual slag must be deposited in landfills.

7.Building Instructions

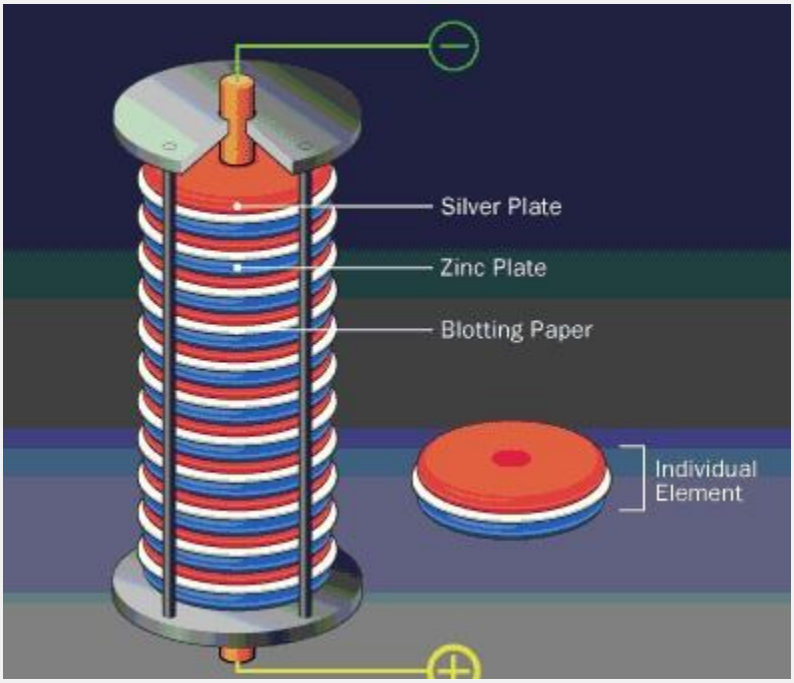


Figure 16 Karpen's pile

The pile is comprised of individual elements or cells. Each cell has a copper/brass/silver plate and a zinc plate.
In our case, to cut the costs of production we'll be using the copper plate and the zinc plate, these two metals being the most affordable for the building process.

You will need the following materials before setting upon your task:

- 80 copper disks, 9 cm in diameter, 5 mm thick
- 80 zinc disks, 9 cm in diameter, 5 mm thick
- Paper towels

- iron plate 30cm long by 12 cm deep by 2 cm high
- 2 glass tubes 10 cm in diameter, 50 cm high
- Vinegar (any kind)
- Salt

First, you will have to machine the iron plate (drill 2 holes following the schematics. I would recommend going to a local lathe shop.)

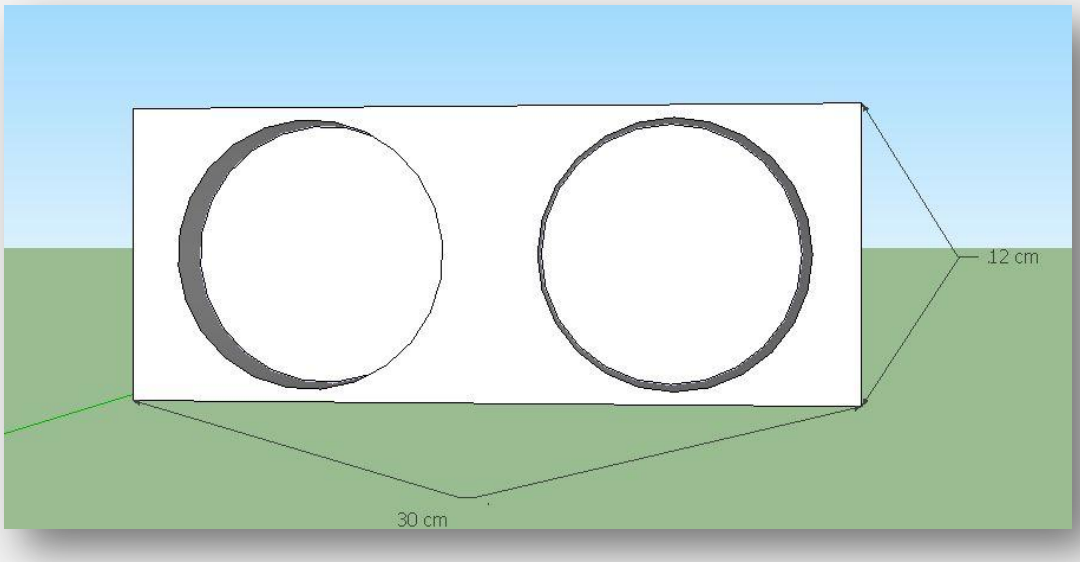


Figure 17 The iron plate with 2 holes

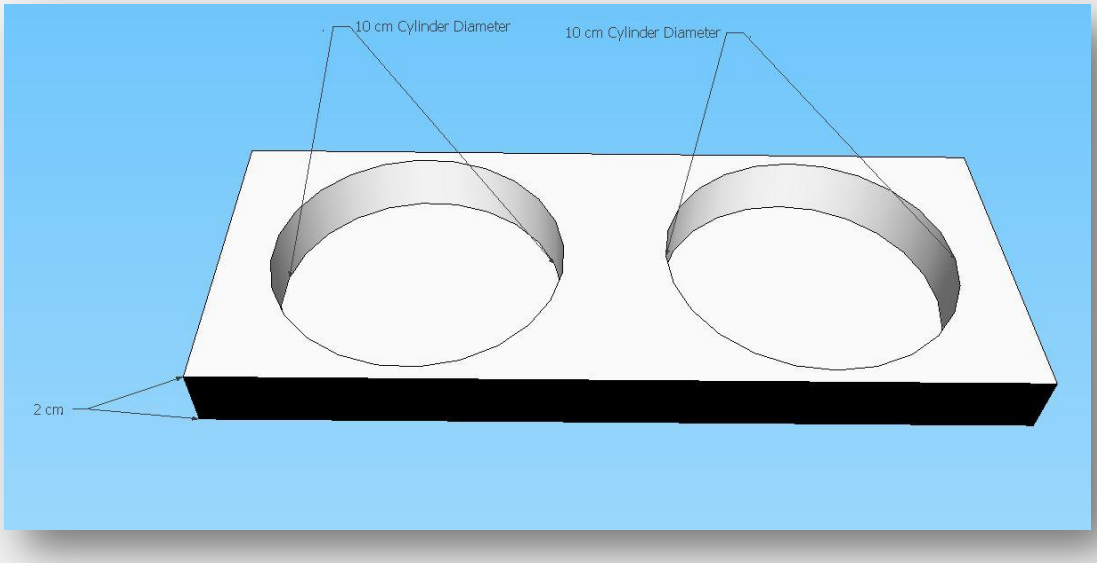


Figure 18 The iron plate with 2 holes

When the bottom plate is finished you can start building the pile towers.

In a bowl mix the vinegar with the salt, and after that soak the paper towels in the resulted saline solution.

Make the individual cells. Take a zinc disk, place a piece of soaked paper towel on it so it covers the entire surface and place a copper disk on top of the paper towel.

Do this with until you have created all the cells to be used. You will have a total of 80 cells for both towers.

Now start building them in height. On the left tower, place the cells with the zinc disk facing down. On the right tower place the cells with the zinc disk facing up.

Your cell towers should look something like this:

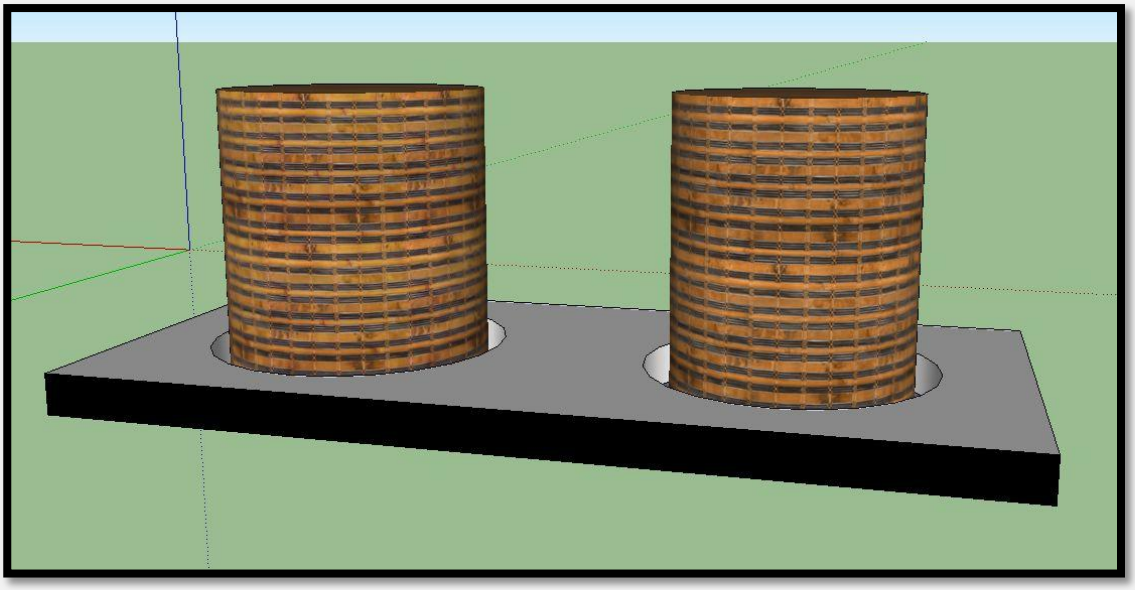


Figure 19 Cell towers

After all the cells are arranged on vertical axis, take the glass tubes and place them upon the cell towers. Before doing so, it would be recommended to cut the bottom of the tubes (if you have bought test tubes like the one below).

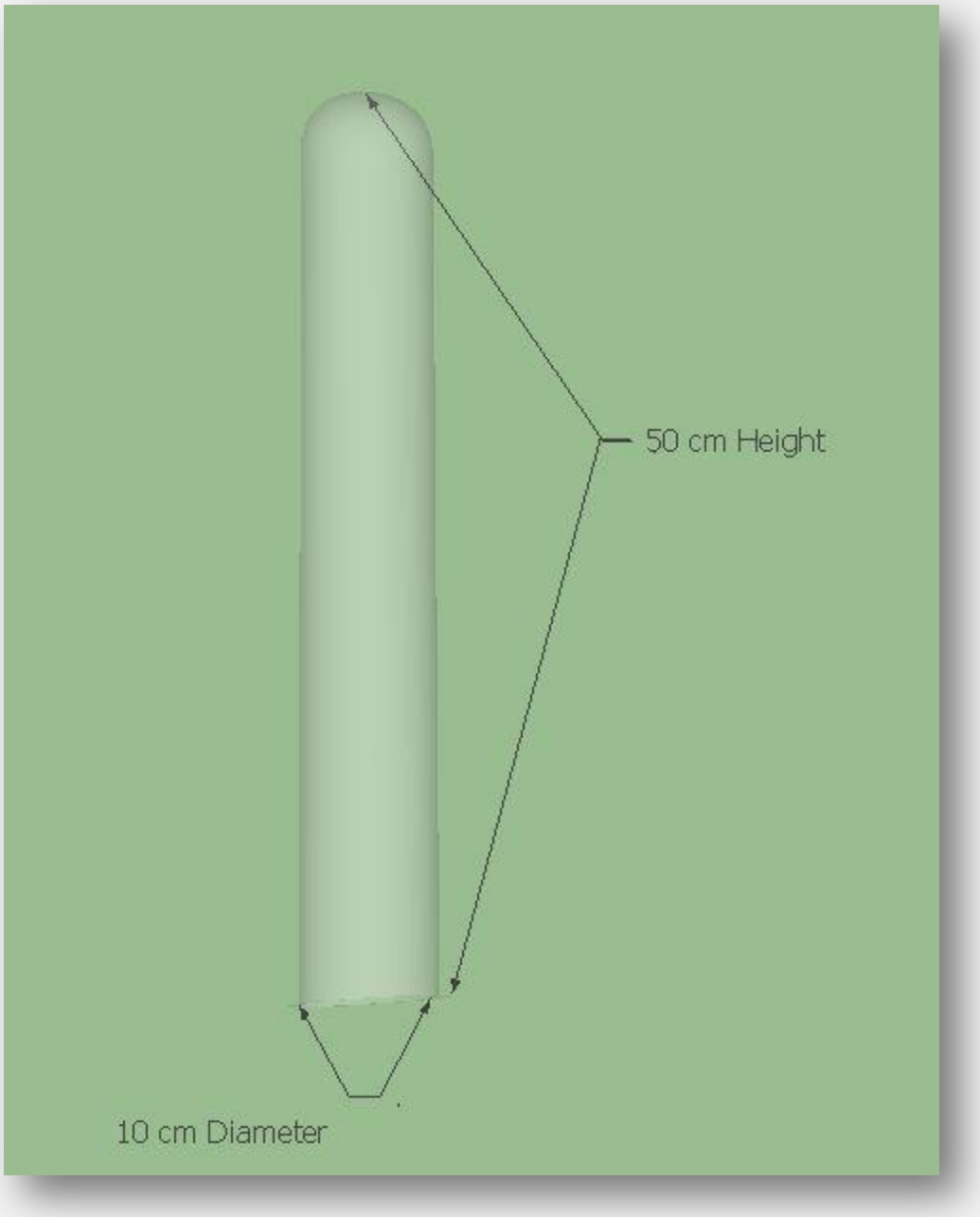


Figure 20 Glass tube

The final arrangement should look something like this (of course, the bottoms of the test tubes will have to be cut so they won't cover the towers):

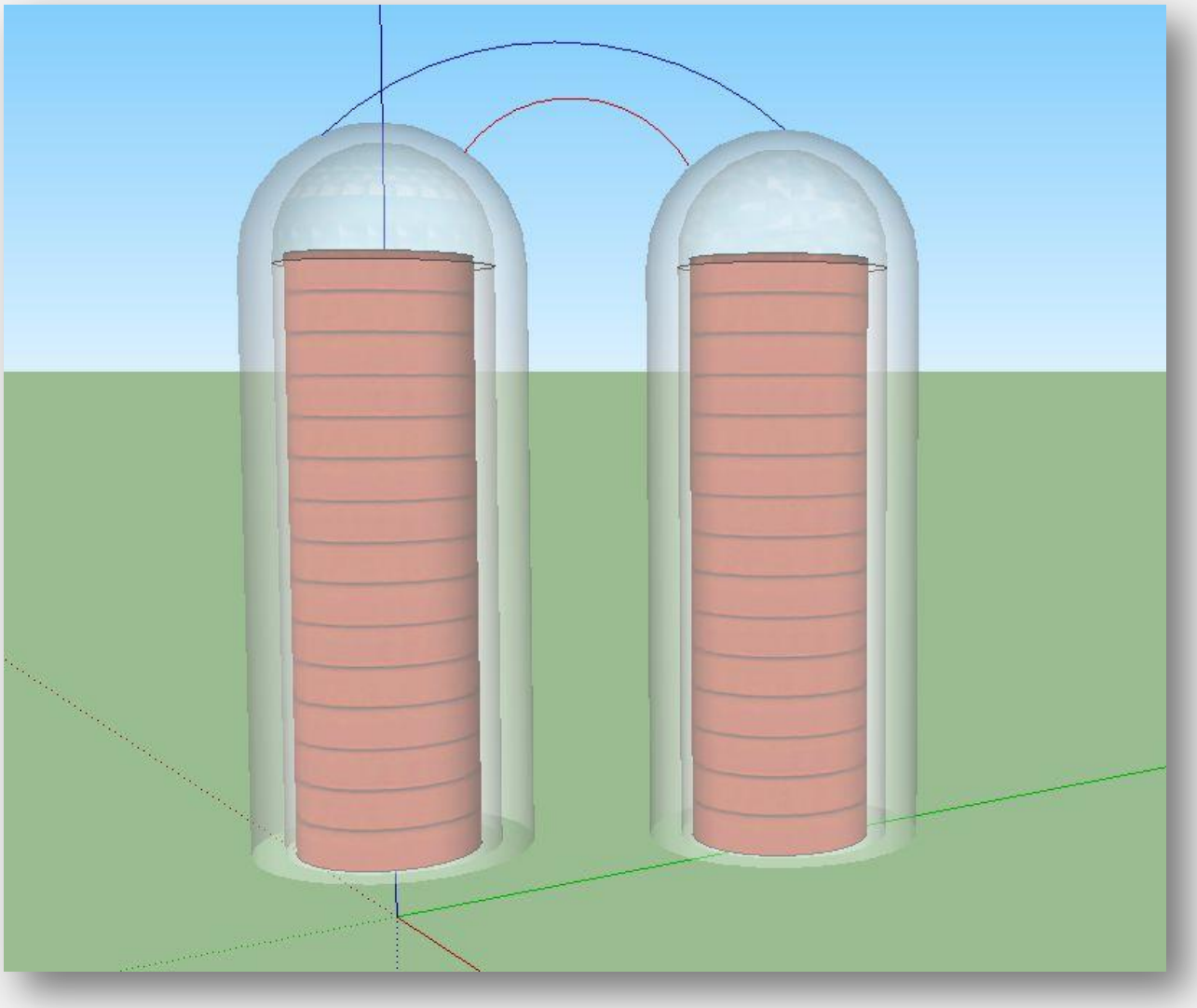
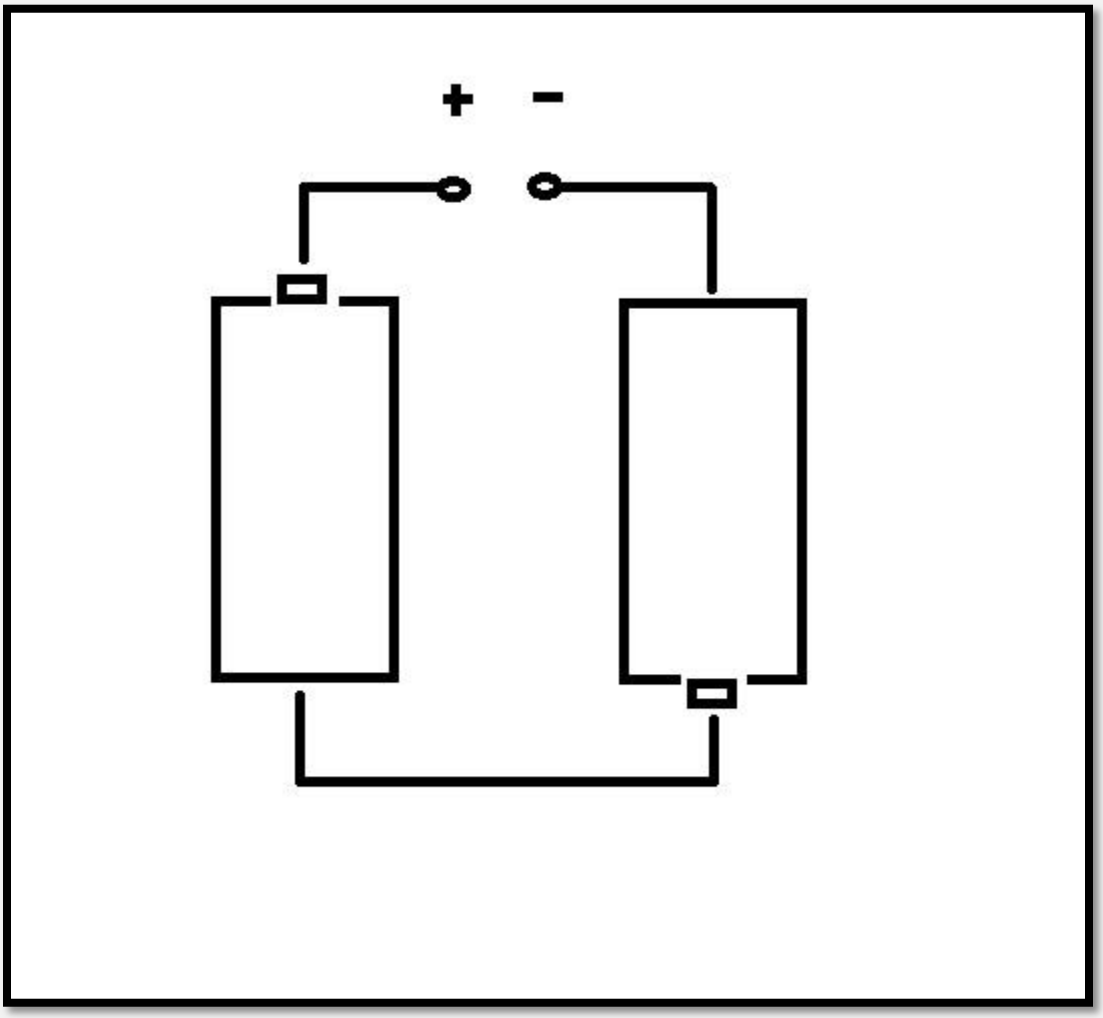


Figure 21 Final arrangement

What you now have is a perpetual Karpen pile or battery. The top of the towers are actually similar to the contacts from a normal battery. So if you want to light something up, you just have to connect the contacts to the light bulb or what you had in mind on testing.

Here is a simple electric schematic of the pile:



The Pile is actually comprised of 2 major batteries, which are made up from 40 small batteries each.

In short

1. Electrical battery of not limited duration, the power produced is not limited and comes entirely from the processing of the heat of the environment; it is characterized by the use of a single liquid of invariable composition or of two liquid or gaseous phases in contact but non miscible, by the use of two unaffected electrodes in contact with the phases, and by the fact that no reaction occurs during rest or operation periods of the cell, each element forming the cell remains unchanged.

2. In other cases, the battery according to 1 includes a single liquid phase in which there are two electrodes formed of different materials and unaffected by the liquid.

8.Karpen’s Pile – Further explanations

When searching for more (pre-selected) subjects, many of Dr. Karpen's published works were discovered, both in Romania and France. Among them, a certain book entitled "New Phenomena and theories in Electrochemistry and Chemical Physics"(NPh) which appeared in 1957. The book was printed through the office of the Romanian Academy. It is an isolated edition, written, of course, in Romanian.

In this book, Dr. Karpen is outspoken that the apparatus he created in order to prove the reality of the physical processes not under the second law of thermodynamics, is a genuine perpetuum-mobile of the second kind.

The book was issued during a hard Stalinistic period, when just to tell friends about a work carried out, or at least started abroad, along with capitalists, would have been dangerous.

By that time, each text published had been checked over thoroughly (and especially "ideologically"), and cut out or modified in order to be politically correct (as if the author would have been most devoted to the laboring people and to the 'Party").

The book itself raises many disquieting questions whose answers, we expect, will be found by a future inquiring struggle.

In his book, Prof. Karpen treats minutely his theory on free electrons in liquids versus Nernst's theory, and theorizes many types of electrical cells, along with plenty of experimental data, both picked up from literature and obtained by the author himself in his laboratory.

The notion is introduced of compensated diffusion (of electrons, ions etc.) as a fundamental process at the interface of two different and non-mixable media, and standing apart from the second law of thermodynamics, like the brownian motion.

9.Final Thoughts

Karpen's Pile, as well as other great inventions, needs our constant support, as they are all contributing to fulfill the big dream of free energy.

Free energy technology is here, now. It offers the world pollution-free, energy abundance for everyone, everywhere. It is up to us to benefit from the rivers of energy that people like Nicolae Vasilescu Karpen have discovered for the generations to come.

Thank you for taking the time to read our guide and for being part of our efforts. We are confident you will be successful in achieving the best results for your free energy projects and money saving experience.

F.A.Q.

1. Where to connect the output of the generator?

   The outputs are the 2 plates at the top of the towers. One is charged negative and one positive with DC current. You can connect either by soldering a wire on each plate or by simple contact.

2. How deep to drill the holes in the bottom plate?

   The bottom holes must have the depth equal to one single zinc or copper disc.

3. How many volts does the one in the book produce?

   The Karpen Generator in the book puts out an excess of 24 Volts which more than sufficient to run an inverter.

4. Where are the terminals?

   The outputs are the 2 plates at the top of the towers. One is charged negative and one positive with DC current. You can connect either by soldering a wire on each plate or by simple contact.

5. How to connect the top contacts to the light bulb or anything you want to test?

   You can connect the 2 plates at the top of the towers, either by soldering
   a wire on each plate or by simple contact.

6. What is involved in maintaining it?

   The generator is basically a set and forget device. If the power drops somehow it should be soaked in the same saline solution used when building it.

7. Do you need a converter to convert the DC to AC?

   Yes, you need a 12/24V input converter or inverter to produce sustainable
   AC current.

8. Where to buy copper discs 3 ¾ inches in diameter and 3/16 thick and zinc discs the same?

   If this dimension is not on shelf, you can buy copper and zinc plates and cut them to size at a local lathe shop... Or by hand, but it takes a little longer.

9. Where do I purchase materials to build this?

You can find all the materials you need at the construction materials stores.

10. How do you connect it to the house?

I recommend you to call a specialist for this one because it can get pretty dangerous and it's better to have somebody that know how to handle it.

11. What are the vinegar and salt quantities to be mixed together?

1 liter of vinegar with 5 spoons of salt.

12. Can the steel solid base be replaced with a stainless steel wire?

Yes, but the steel plate has 2 uses in our project. One is to be a firm and steady foundation for the 2 towers and one is to be an electrical conductor between the two towers (series connection).

13. Can pvc pipe be used instead of glass?

Yes , PVC tubes will do the job, coming in larger dimensions and at a lower cost.

14. Can cotton denim be used instead of paper towel?

Yes it can.

15. Is there a need to ground this device?

No.

16. Does one use larger discs or create a series of these sized towers to scale the device?

Yes, it can be done. A series of towers is recommended.