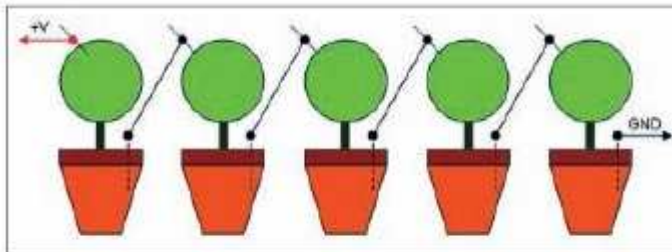
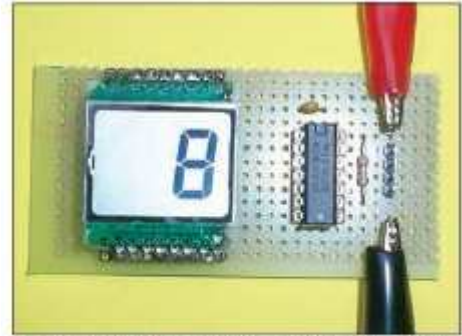


## Flower Power – unusual battery design

Some years ago I saw an article in Nuts & Volts magazine (1) where somebody used flowers as power source. It said that if you connect one wire to the ground and one to the flower's top leaves some voltage appear and very small current can be obtained. This article puzzled me a lot. It is not typical chemical battery like "lemon" battery which works similar to regular batteries. I made some information search and to my surprise found that it is well known fact. Some



■ FIGURE 1. Block diagram showing the serial connection procedure among several plants. Like any standard battery, every plant has a positive and negative terminal.

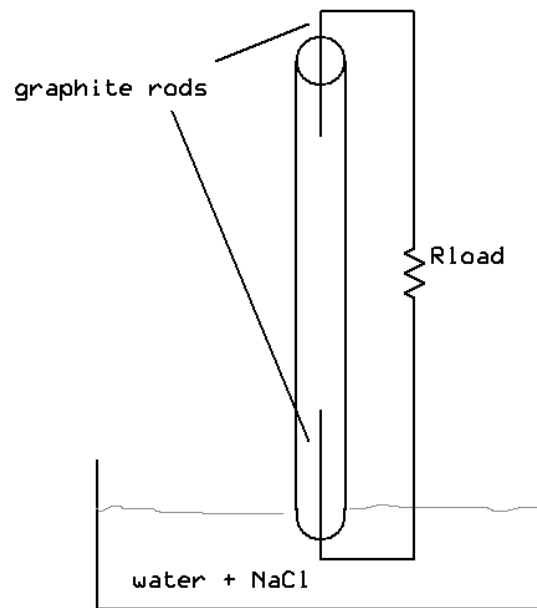


■ PHOTO 6. Close-up view of the LCD timer hardware. Simplicity is the key to be able to run an electronic circuit with such a tiny amount of energy.



MSP430F2013 based device powered from flowers

use trees instead of flowers and one guy even got patent for device which can charge mobile phone from a tree. But despite many people tried use this effect nobody really knows (or shares) why it really works. Only recently after building "gravity" battery I got idea how it works. Water while rising from the roots move also some ions and creates a concentration gradient. I don't like idea of damaging flowers and trees (3) but similar process can be created artificially. So I built a "vaporization" battery.



Construction: a rag (like one which used to wipe the dust) placed inside plastic tube (about 30cm length). Two graphite electrodes inserted on different ends and tube placed into small water tank. Tank filled with slightly salted water.

Operation: water rising in the “rag” and evaporate on the top of the tube. This also creates some salt concentration gradient, so by adding two electrodes we can tap a little energy (my version on the left picture provides up to 200mV and 1-5uA). Power depends on electrodes area and can be increased e.g. by adding more electrodes.

This kind of battery behaves similar to gravity battery described in (2) but all processes are slower. If placed up-side-down it takes several days to reverse polarity.

As a summary, I would like to point that this a typical example of Tesla’s system which is capable extracting power from environment as explained in (4). We created an energy flow and we are able tap energy from this flow.

## References

1. Flower Power by Carlos Cossio, Nuts & Volts September 2010 p.36
2. Gravity Battery, see FE R&D group messages
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<https://himachalwatcher.com/2014/01/14/save-trees-how-strangling-wires-and-hammering-nails-kill-trees/>
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