

## **YOUR ENERGY IS IN YOUR HANDS**

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Today people live in an industrialized era surrounded by mobile phones, Kindle books, tablets and laptops, which need a lot of energy to keep working. But the most spread solution to it is to generate electric energy by using gas, oil and coal. People simply burn it and transform heat into electric current. Due to it our planet is becoming more and more polluted with carbon dioxide and other harmful wastes.

One should mention here an interesting invention in the field of energy producing machines. A small toy, called “Powerball” keeps working only if you

supply this thing with some mechanical energy by rotating it with your hands. The student from Belarus, Michael (Misha) Vaga, managed to equip this device with micro dynamo and an accumulator, so then you can generate your own energy and use it to charge small devices.

Let us consider how it works. In a small shell there is a rotor, stator, battery and a Bluetooth module. Firstly, to start it working, you must release the starter ring. That will transmit an impulse to the rotor. Then you rotate HandEnergy with your wrist to keep the rotor spinning. The average speed is 5000 rpm. The magnetic rotor transmits mechanical power to the stator and produces an electric current, charging the built-in batteries. The battery level can be checked through Bluetooth module using a special mobile app. This software also allows you to see how much energy the owners of this device generate. The author of this project thinks that it will create and broaden HandEnergy community.

As far as ecology is concerned, this nineteen-year-old student has done something more significant than a portable generator: he has shown us that the solution to energy problem is in our hands. People had always searched for the effective ways of supplying themselves with energy for everyday needs, but nobody even thought that people could transform their own mechanical work into an electric current. People are lazy and that is why they prefer to build power stations, where fuel is burnt and harmful gases are emitted into the atmosphere. The better solution is to build solar and wind power stations. They have less harmful effects on the environment, but they are less powerful than conventional nuclear power stations. Moreover, solar power plants cover huge territories. Wind power stations are dangerous for birds. However, these types of stations need suitable weather conditions for proper performance. Hydroelectric stations have a bad influence on fish and cause water to cover more areas.

We strongly feel that the energy problem solution lies in producing electricity by small devices that can charge themselves. Only then we will be able to save our planet and avoid such bad consequences as global warming and air pollution. If we want to live in a clean environment, we should resolve electricity problem by

ourselves, while producing energy not only with the power of mind, but also with the power of our bodies.

## **REFERENCES**

1. Hand energy [Electronic resource]. – Access mode: <https://www.hand.energy/>.
2. HandEnergy pocket generator [Electronic resource]. – Access mode: <https://newatlas.com/handenergy-pocket-generator/46712/>.