

## Project Participants

V.G.Baryakhtar Fund of International Science Support, Lithuania

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V.I.Vernadsky Taurida National University, Ukraine

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Vernadski Interdisciplinary Research Centre (VIARC), Sweden

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### Vladimir Letunov

Doctor of Technology. As the director of the Scientific-Technical Centre “Kiev-Intermag” took part in the aftermath of the Chernobyl

accident. From 1985 to 2010 Vladimir took part in the work on controlled thermonuclear fusion projects at the Academy of Sciences of Ukraine and the Academy of Sciences of the Republic of Lithuania. In the USSR, the OTNR project (experimental thermonuclear reactor), after the declaration of independence of Ukraine in the international project ITER. Vladimir Letunov is a leading researcher on the current project.



### Viktor Baryakhtar

Doctor of Physical and Mathematical Sciences. 1973-1982 - Head of the Theoretical Department, Deputy Director of

the Donetsk Institute of Physics and Technology, Academy of Sciences of the USSR. 1985-1989 - Director of the Institute of Metallophysics, Academy of Sciences of the USSR. 1989-1994 - Vice President of the National Academy of Sciences (NAS) of Ukraine. 1991-1994 - President of the Ukrainian Physical Society. 1994-1998 - First Vice-President of the NAS of Ukraine. V. Baryakhtar is a member of the American Physical Society and the International Union of Mathematical Physics. He was a laureate of the N. M. Krylov Prize (USSR Academy of Sciences, 1985), the N. N. Bogolyubov Prize (JINR, 1999), two State Prizes of the USSR, and a State Prize of Ukraine. Viktor Baryakhtar is a leading researcher on the current project.

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# Atmospheric Electricity

A METHOD OF COLLECTING AND CONVERTING THE ENERGY OF NATURAL ELECTROMAGNETIC RADIATION INTO ELECTRIC CURRENT AND A COLLECTOR FOR ITS IMPLEMENTATION

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## Electromotive Force

The invention of the Electromotive Force in the XIX century served as a basis for the theoretical and experimental investigations of the project, started in 2010 in Ukraine.

Electromagnetic induction starts within the electrical conductor, which is situated in an alternating magnetic field. A closed conducting loop within an alternating magnetic field generates electric current, called inductive current.

The resulting EMF:

$$\mathbf{E} = -\Delta\mathbf{F} / \Delta t, \Delta\mathbf{F} = \mathbf{BNS},$$

where: **N** - the number of solenoid turns; **S** - the area of the solenoid turn; **B** - the magnetic induction module.

## Upper-Atmospheric Lightning

The discovery of the upper-atmospheric lightning in the XX century added to the project further findings and success. Upper-atmospheric lightning creates gigantic accumulations of cold plasma (app. 10 000 km<sup>3</sup>), which appears in the ionosphere with the frequency of 30-40 Hz.

Upper-atmospheric lightning is the source of the natural electromagnetic emissions. Natural electromagnetic emissions, in turn, create an alternating magnetic field within the space unit (cubic space) in-between the surface of the Earth and the lower boundaries of the ionosphere

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2010-2013, Academy of Sciences of Ukraine and Lithuania

2017-2019, Ukraine and Peoples Republic of China

Under the guardians of the global acknowledge physicist Viktor Baryakhtar, the possibility of converting natural electromagnetic emissions into electric current has been experimentally tested and proven.

## Patent WO2013114285

Patent Name (WO2013114285) Energetically Independent System for Implementation Of The New Non-Contact method To Collect The Electromagnetic Energy (Based On Natural Or Artificial Waves) By Means Of Force Field Interaction In A Continuous Medi:

<https://>

[patents.google.com/patent/WO2013114285A2/en](https://patents.google.com/patent/WO2013114285A2/en)

**2019, People Republic of China**

Research that has been conducted in 2019 in Peoples Republic of China proved that the energy, collected by the collector of the natural electromagnetic emissions is superior to the collectors of solar energy. Collector of the natural electromagnetic emissions was tested and it successfully generated electric current in **three different environments**:

- on the surface of the earth (tested in deep mountain gorges)
- under the ground (app.0,2 m deep buried under the soil)
- under the water

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## Solenoid

Solenoid, a cylindrical coil of wire, when located in a spherical waveguide of the natural electromagnetic emissions between the surface of the Earth and the ionosphere, becomes a generator of the inductive current.

## Natural electromagnetic radiation energy

The natural electromagnetic radiation energy can be converted into direct current and the natural electromagnetic emission can be collected in an energetic cube.

Since 2019, Ukraine and Sweden Current activities on the project cover:

studies of the energetic cube for collecting natural electromagnetic emissions

investment negotiations in Sweden to bring the innovation to market;

further patenting process;

