

## HORIZON 2020 PARTNER SEARCH FORM

I am a **Coordinator in a Project Proposal looking for Partners**

I am a **Partner in a Project Proposal looking for Partners**

### Contact Details

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Position in the Organisation	Doctor of Technical Sciences and President of the Ukrainian Academy of Sciences		
Organisation	Ukrainian Academy of Sciences		
Type of Organisation	NGO		
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**Short Profile of the Organisation, the Coordinator and Other Personnel to be Involved** (*max 500 words*)

#### **Ukrainian Academy of Sciences**

The Ukrainian Academy of Sciences (UAS) was established in 1991 as All-Ukrainian Civil-Scientific Association which comprises on voluntary basis the leading scientists and specialists from different scientific branches and regions of Ukraine. The UAS has since become well known and internationally recognized scientific center of Ukraine. The Academy is the founder and the owner of the variety of research institutions and universities, among those are the Institute of Automated Systems, Institute of Radio Electronics and Communication, Institute for Ecological Studies, Institute for Humanitarian Studies, Institute for High Technologies Basic Research, Institute for Hydrogen and Solar Energy, the University of Information Technologies and Management, Institute for International Research and others.

The Institutes of the UAS have carried out series of important basic and applied R&D works, elaborated new technologies and know-how, state-of-the-art machinery, materials and equipment.

The UAS has published scientific and popular science journals, including "Gileya bulletin", "Inventor and Innovator", "Issues of innovative and investment development", "Energy production news" and others.

The UAS actively cooperates with many scientific institutions from all around the world. There are a lot of scientists from Europe, Asia and America among the members of the UAS.

The UAS has established special awards and honorable prizes as a reward for special scientific achievements.

The supreme management body of the UAS is the General Assembly. Mr. Aleksey

Onipko, Doctor in technical sciences, Professor, Academician of the UAS, has been the President of the UAS since 1991.

### **Oleksiy Onipko – Short Resume**

Professor of Technical Sciences and President of the Ukrainian Academy of Sciences since 1991. Chief designer & author of the wind-electro station project. Specialist in physics, graduated from the Kharkov State University (1965). O. Onipko is the author of more than 150 scientific works & patents. Works & projects in the area of material sciences, electronics & energetics. Winner of the highest state award in the field of science and technology for development & realization of masking & protection system for covert-intelligence (2005). Patent author for firearm design, ion-plasma technology, & nanotechnology. Awarded highest state honorary title of “Honoured Inventor of Ukraine” (2013). Active advocate & supporter of alternative renewable energy. Author of “Small Wind Energy” & “Wind Energy & Energy Strategy”, specialized literature taught as part of official curriculum in state universities. Invited lecturer at different universities in Taiwan, China, Russia, Latvia, & Ukraine on the subject of wind-energy. Invited lecturer at the 21<sup>st</sup> OSCE meeting in Ukraine on Renewable Energy: Safety & Environmental Protection. Number of publications & presentations via national Ukrainian media.

## Project Information

**Deadline for Responses:** 16/06/2014

**Topics Covered:** Further development, prototype testing, large scale product validation and commercialisation of the **Onipko Rotor**, a wind generator designed to operate at low wind speeds.

### **Type of Action:**

- Research and Innovation Actions
- Innovation Actions
- Coordination and Support Actions
- Marie Skłodowska Curie Actions (ITN, IF, RISE, COFUND)
- ERC Grant Schemes (Starting; Consolidator; Advanced Grants; Proof of Concept Grant; Synergy Grant)
- Fast Track to Innovation Pilot
- SME Instrument
- Support to Pre-Commercial Procurement (PCP)
- Public Procurement of Innovative Solutions (PPI)
- Co-Fund Actions
- Inducement Prizes

Dedicated loan and equity instrument

**Project Idea Description** (brief description of project idea – maximum 500 words) :

Search for partners to submit a proposal to Horizon 2020 under “Secure, clean and efficient energy” LCE 3 for the following project.

The project is the further development, prototype testing, large scale product validation and commercialisation of the **Onipko Rotor**.

**The Onipko Rotor** is the only wind-driven generator that operates in areas with low wind speeds, as low as 0,1m/sec. It's unique spiral design and large active area provide for maximum energy and increased efficiency. It is a new type of wind-driven electric generator. Made up of 3 unique components, a unique spiral design turbine, a unique electric generator, and a unique electronic system.

The Rotor design has the following advantages compared to other turbine designs:

- 1) Cut-in speed of 0.5 m/sec. Previously unprecedented results.
- 2) Very high efficiency level compared to any previous design.
- 3) Low noise level, less than 47dB. Allows for safe work in urban areas
- 4) Reacts to fast wind gusts in slow winds, also works regardless of wind flow direction.
- 5) Tougher construction than other designs.
- 6) Does not require high altitudes to function.
- 7) Safe for birds with no sharp edges, and lower spinning speed.
- 8) Ergonomically pleasant design.
- 9) Can be made from different materials (composite materials, plastics, metals, etc...)

The generator design has the following advantages compared to other generator designs:

- 1) Low starting torque, to work with low wind speeds.
- 2) Lighter weight than traditional generators.

The objectives of the Onipko rotor program are:

- 1) Ability to harvest energy from areas with dominant low wind speeds (globally dominant wind is low speed wind).
- 2) Increase work period of wind-generation.
- 3) Increasing efficiency & reliability of wind-generation.
- 4) Implementing wind-generation in urban areas, by lowering turbine noise level.
- 5) Create more bird-friendly wind-generation.

Possible impacts of the program:

- 1) Reduce load on central power grids.
- 2) Delivering reliable energy generation for areas with no electric supply (deserts, valleys, etc...)
- 3) Providing a reliable alternative energy source for regular households.
- 4) Providing reliable energy during emergency situations.

A partial list of awards follows :

1) Special Award presented by the Asia Invention Association (AIA) at the International Warsaw Invention Show (IWIS), to O.Onipko, S.Vasylenko, A.Onipko, N. Al-Rifai, V.Mekulinko, V.Kedrovsky, K.Shevchenko for the Onipko Rotor (Wind generator for low wind-speed environments). 8-10 November 2013, Warsaw, Poland

2) Golden Medal at the 16<sup>th</sup> International Salon of Inventions and Innovation Technologies “Archimedes”, to Onipko A. F., Vaselenko S., Onipko A. A., Ukraina Academy of Sciences, for the Onipko Rotor (Wind generator for low wind-speed environments). 2-5, April 2013.

3) Technology – Chariot of Progress Award, rewarded by the editorial staff at Russian magazine “Inventor and Rationalizer” to Aleksiy Onipko. 11 February 2014.

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Note: This is a special international award given to prominent inventors, the “Inventor and Rationalizer” magazine is one of the oldest Science magazines in Russia and the former Soviet Union.

More information can be found on our website [www.onipko.com](http://www.onipko.com)

**Key words** : wind turbines operating efficiently at low wind speeds, Onipko rotor

Other Partners in the Consortium already identified :

Previous experience as a Coordinator in RTD projects  yes  no

or Partner in RTD projects  yes  no

If yes, in which projects?

Specific research projects that the Ukrainian Academy of Sciences or Professor Onipko has participated in.

List of patents in Ukraine, patents active for 20 years:

1) Patents related to Onipko Rotor project:

-Patent: No 11147– Universal Onipko rotor  
Date: 25.09.2012

-Patent: No 15346 – Onipko synchronous generator with permanent magnets on the rotor  
Date: 12.27.2013

-Patent: No 30306 – Blade-wheel current power convertor.  
Date: 25.02.2008

-Patent: No 15345 – Onipko energy convertor  
Date: 12.27.2013

-Patent: No 00595 – Industrial design of rotor turbine  
Date: 20.03 2014

-Patent: No 100922 – Hydroelectric station  
Date: 11.02 2013

-Patent: No 102689 – Onipko energy convertor flow to rotation or vice versa.  
Date: 12.08.2013

2) Other patents:

-Patent No 56122 – Onipko Firearms.  
Date: 10.01.2011  
Firearm with improved stopping power, range, & accuracy.

-Patent No 79511 – Onipko Bullet  
Date: 25.06.2007  
Bullet used with no recoil, possibility to use different calibre rounds in the same firearm and magazine, & use of a smoothed bore.

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- Patent No 59168 A – Masking radio coverage by absorption  
Date: 15.08.2003  
Anti-espionage protection from radar.
- Patent No 59171 A – Facility communications protection from information leakage & espionage.  
Date: 15.08.2003  
Anti-espionage protection method for facilities.
- Patent No – 70625 A – Internal combustion engine ignition method & implementation device  
Date: 15.10.2004  
New internal combustion method for engines, with more power & higher fuel efficiency.
- Patent No 85283 – Melting thermo-indicator  
Date: 12.01.2009  
Small thermo-indicator that melts when pressure exceeds certain temperature. Can be used on engine blocks to show that the engine was overheated.
- Patent No 89871 – Method for processing material using high pressure.  
Date: 12.05.2014  
Method using very high pressure (explosions) to process materials very fast.
- Number of patents from the Soviet Union with plasma technology, & nanotechnology.
  - Other patents cannot be published.

### Target Partner Sought

**Target Partner Organisation type :**

<input checked="" type="checkbox"/> Higher Education / University	<input type="checkbox"/> Industry / SME
<input checked="" type="checkbox"/> Research Institution	<input type="checkbox"/> International Organisations
<input type="checkbox"/> Public or Governmental Body	<input type="checkbox"/> Individual Partner
<input type="checkbox"/> NGOs / Voluntary Civil Society Organisations	<input checked="" type="checkbox"/> Other (specify) Owners of wind tunnel testing facilities

**Target Partner Country :**

<input type="checkbox"/> Any Country	<input checked="" type="checkbox"/> Member State or Associated Country
<input type="checkbox"/> Third Country	<input type="checkbox"/> International Cooperation Country ICPC
<input type="checkbox"/> Specific Country	

**Expertise required (key words) :**

- (1) Wind tunnel testing facilities. Capable of testing turbine diameters of up to 9 m.
- (2) A tenzostation with capabilities of accurately measuring starting torque.

**Role of Partner / Potential Contribution to the project :**

- |  |   |  |
|--|---|--|
| <input type="checkbox"/> Research                    | <input checked="" type="checkbox"/> Innovation      | <input checked="" type="checkbox"/> Prototype/ Model development |
| <input type="checkbox"/> IPR Know-How                | <input type="checkbox"/> Dissemination and Outreach | <input type="checkbox"/> Capacity Building                       |
| <input type="checkbox"/> Hosting/Sending Secondments |   |  |

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- Networking  
 Other

**Date:** 23/05/2014

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