

22.06.2018**First Electric Catamaran Based on RUSNANO Solutions Presented in Moscow**

On June 21, Moscow saw the presentation of the first electric catamaran using solar cells created based on the solutions of the RUSNANO portfolio companies. The catamaran was designed by ANO National Centre for Engineering Contests and Competitions specially for the EcoWave expedition held under the auspices of the MariNet NTI Engineering Contests and Competitions route map project.

The event was attended by the RUSNANO Management Company LLC Managing Director **Sergey Vakhterov** and the ANO National Centre for Engineering Contests and Competitions Director **Evgeny Kazanov**, as well as representatives of Liotech and Hevel, and energy efficiency experts.

The electric catamaran is a unique design by Russian engineers. It uses 2 solutions of the RUSNANO portfolio companies: **Hevel solar panels** (produced in Novocheboksarsk) and **Liotech accumulators** (Novosibirsk). The roof of the catamaran is covered in semi-flexible solar modules with the total capacity of 9 kW designed by the scientists of the Research and Development Centre for Thin-Film Technologies in Energetics (R&D Centre for TFTE). The modules were based on heterostructural solar cells manufactured at the Hevel plant in Novocheboksarsk (Russia). The solar modules are the main power supply source for the 2 electric motors.

At night and during the periods of low insolation, Liotech lithium-ion accumulators with the total capacity of 70 kW supply the power for the catamaran. The accumulators enable the vessel to sail for 20 hours without recharging.

The EcoWave expedition on the electric catamaran is being held on the largest Russian rivers following the route Saint Petersburg — Veliky Novgorod — Moscow — Astrakhan. The total sailing distance will amount to around 5,000 km, the vessel will travel across 20 Russian regions over 3 months. The catamaran based on solar modules embarked on the journey in Saint Petersburg on May 19. In cooperation with the leading universities, the expedition will study the hydrochemical characteristics and quality of the water along the route and will design an interactive eco-map summarising their findings. The EcoWave Science and Technology Festival will be held in 14 cities along the route. It will include popular science lectures, master classes, competitions, quizzes and quests concerning eco-technologies.

The energy efficiency solutions of RUSNANO enable the catamaran to cover long distances autonomously, without using fuel, and minimise the expenses and the impact on the water ecosystem. A catamaran with a diesel engine would have emitted 7.7 tons of carbon dioxide into the environment during the journey.

The RUSNANO Management Company LLC Managing Director **Sergey Vakhterov**: “The electric catamaran on solar modules is an example of using the RUSNANO energy efficiency technologies in the field of renewable energy and power storage. I am positive that the technologies of Hevel and Liotech used



both in combination and independently will be in demand concerning new technical solutions in electrical transport and power engineering, including isolated power systems.”

The Liotech CEO **Valery Yarmoshchuk**: “Electrical vessels are no longer a beautiful experiment, they represent a fully-fledged transport that has become a thing for our everyday use, just like the formerly innovative tablet and an electric car. Several customers in Russia are planning to purchase electric vessels using Liotech accumulators. Electric vessels can be used both for transporting passengers and providing excursions, and for transporting heavy cargos in the waters of the rivers and the coastal areas of the seas in the Russian South. This technical solution is an economically viable investment enabling not only to save up on fuel, but also to avoid vessel fuel emissions that cause damage to the environment and vibrations that have a negative effect on the water reservoir ecosystem.”

The ANO National Centre for Engineering Contests and Competitions Director and the EcoWave expedition head **Evgeny Kazanov**: “With the assistance of high technology manufacturing companies (Hevel, Liotech), we succeeded in building a small vessel able to travel from the Baltic Sea to the Caspian Sea without polluting the environment. The EcoWave expedition shows an opportunity to travel along the Russian rivers using solar energy. We can see the development and promotion of technologies around the world aimed at reducing the negative impact on the environment. Fresh water is a strategic resource of our country, and the efficient use of the Russian waterways is a challenge for the engineers of the new generation.”

RUSNANO Joint-Stock Company was founded in March 2011 through reorganization of state corporation Russian Corporation of Nanotechnologies. JSC RUSNANO contributes to implementation of the state policy on the development of the nanotechnology industry by investing directly and through investment funds of nanotechnology in financially effective high-technology projects providing the development of new production facilities in the Russian Federation. Its primary investment focus is in electronics, optoelectronics and telecommunications, healthcare and biotechnology, metallurgy and metalwork, energy, mechanical engineering and instrument making, construction and industrial materials, chemicals and petrochemicals. 100 percent of RUSNANO’s shares are state owned. Thanks to RUSNANO’s investments, there are currently 96 factories and R&D Centers opened in 37 regions in Russia. JSC RUSNANO has profit for the last 4 years.

Management of assets of RUSNANO JSC is carried out by Limited Liability Company established in December 2013, RUSNANO Management Company. Anatoly Chubais is the Chairman of its Executive Board.

Work to establish nanotechnology infrastructure and carry out educational programs is fulfilled by RUSNANO’s **Fund for Infrastructure and Educational Programs**, which was also established during the reorganization of the Russian Corporation of Nanotechnologies.

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