Belarusian State University
of Informatics and Radioelectronics

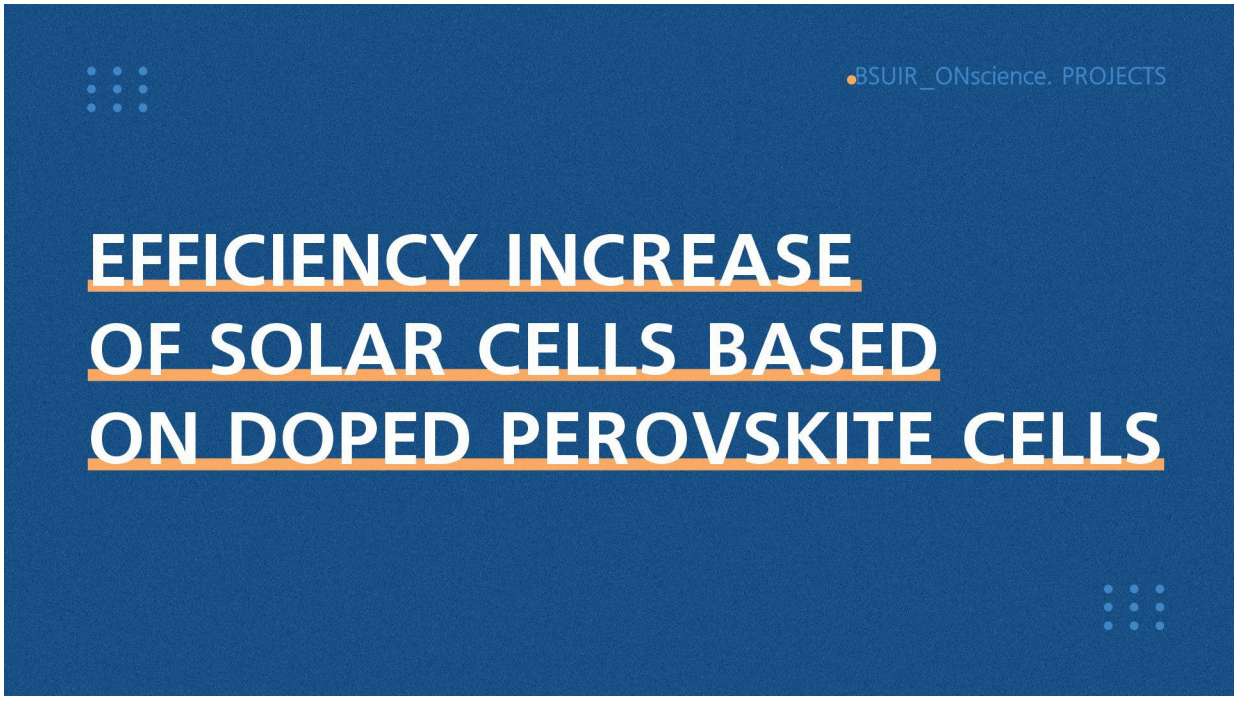
R&D Department

February 15, 2024

BSUIR scientists: joint projects with international partners

We continue to tell you about the projects carried out with the participation of the University scientists and their international colleagues.

Project No. 18: "Energy increase of the conversion efficiency of solar cells based on doped perovskite cells with transport layers of nanoscale thickness made of transition metal oxides".



Project partner: Russia, St. Petersburg State Electrotechnical University "LETI" named after Ulyanov (Lenin).

Project terms: November 15, 2022 - October 31, 2025.

Scientific advisor of the project from BSUIR: Igor Vrublevsky, head of the Research and Development Laboratory "Multifunctional Metal Oxide Composite Materials", Ph.D. in Technical Sciences, expert in the field of micro- and nanoelectronics, nanomaterials and information security.

Project advisor from St. Petersburg State Electrotechnical University "LETI": Vladimir Moshnikov, professor, doctor of physics and mathematics, a highly qualified specialist and famous scientist in the field of nanotechnology, nanodiagnostics, semiconductor physics, atomic-molecular design and nanoarchitectonics.

Project is sponsored by the Belarusian Republican Foundation for Fundamental Research.

The main scientific idea of the project is to obtain competitive solar cells based on halogen organometallic perovskites, increase their conversion efficiency and ensure operational stability when exposed to various external factors. To increase stability, it has been proposed to replace organic transport layers with inorganic materials.

Perovskite is a relatively rare mineral that has been successfully used in the creation of nanolasers, LEDs and other optical devices, as well as in the creation of the newest class of film solar cells (perovskite solar cells).

Methods for increasing the conversion efficiency and operating stability of photoconverters based on doped perovskite cells have not yet been studied enough. Therefore, the proposed scientific idea is relevant and has broad prospects for implementation in the world.

You can contact the scientific advisor of the project via e-mail: rublevsky@bsuir.edu.by. You can also read his publications via → https://bitly.ws/Za86.