



**Belarusian State University
of Informatics and Radioelectronics**

R&D Department

Announcement

BSUIR at the “My Belarus” exhibition of achievements of sovereign Belarus

28 December 2024 – February 2025
Minsk International Exhibition Centre
(P. Medelki st., 24, Minsk, Republic of Belarus)

On December 28, the “My Belarus” exhibition opened in the new International Exhibition Center in Minsk. The site includes an exhibition area; installations; fair, recreation and cultural event areas. The exhibition is a large-scale projection of the achievements of sovereign Belarus, which is intended to become a center of attraction for everyone who wants to learn more about the potential, traditions, breakthrough discoveries in industry, science, technology, education and sports. You can find out more about the thematic zones of the exhibition and other details at the link: <https://моябеларусь.бел/#about>.

The Belarusian State University of Informatics and Radioelectronics will present both high-tech and youth developments at two exhibition locations: “We are the Future” and “Science and Intelligence”.

"WE ARE THE FUTURE" LOCATION

Educational complex for studying programming of embedded systems

Modern production cannot do without automation of some production processes. Automation is carried out using embedded systems, and the core is a microcontroller. Traditionally, special stands, models and training complexes are used to master the skills of programming embedded systems.

This complex includes:

- training stand based on the STM32 microcontroller;
- methodological recommendations that allow you to independently master the skill of programming embedded systems using the “from simple to complex” principle.

The complex is used for practical classes in the discipline “Embedded systems”.

Software for customer experience analysis using neural networks and video analytics

The main task of the software is to analyze human behavior in retail enterprises. The development is based on the methods of intelligent analysis of big data. Video streaming data generated by surveillance cameras is used as the source material.

Based on the collected data, it is possible to optimize the placement of goods, improve the quality of service and develop individual offers taking into account the interests of customers.

Multifunctional complex for cavitation research and testing of ultrasonic installations

The complex is designed to study cavitation and optimize the operation of ultrasonic cleaning baths and sound-chemical reactors.

The complex includes:

- spectral-acoustic cavitation indicator;
- cavitation activity sensor;
- sensor positioning system;
- a computer with special software.

Advantages:

1. Cavitation noise processing capabilities compared to conventional cavitation meters.
2. A wide range of cavitation activity sensors.
3. Possibility of displaying and saving the spectrum of cavitation noise.
4. Displaying information on a computer screen in real time.
5. Controlling the movement of the sensor from the computer.

[About the developer](#)

Complex for training UAV operators

The military faculty of BSUIR has opened a training class for the operation and use of multi-rotor unmanned aerial vehicles, which allows:

- to study the main stages, methods of planning, preparation and execution of flights on multi- rotor UAVs;
- to practice flight maneuvers, including emergency response ones.

The simulator includes:

- a computer with the system requirements necessary to run the software,
- control panel;
- video glasses;
- special software that takes into account realistic simulation of UAV behavior based on the flight mission and sensor readings.
- the student's workplace (table, chair).

"SCIENCE AND INTELLIGENCE" LOCATION

Microwave control and measuring equipment

BSUIR has developed a line of devices in the frequency range from 0.01 to 220 GHz. These devices are used for verification and calibration of measuring microwave devices, in the development and production of promising systems of high-speed information transmission, radar, navigation, communication, which ensure accuracy, stability and security of operation.

The equipment is part of the national standards of the unit of power and attenuation of electromagnetic oscillations in the frequency range from 37.5 to 178.4 GHz developed by BSUIR within the framework of the State Scientific and Technical Program "National Standards and High-Tech Research Equipment".

In 2023, the G4-MVM-37 signal generator and the MK-MVM-118 calorimeter won the competition "Best Innovative Project and Best Scientific and Technical Development of the Year", held within the framework of the International Exhibition of High Technologies and Innovations "HI-TECH'2023" (St. Petersburg, Russian Federation).

[About the developer](#)

Electromagnetic radiation absorbers developed during the implementation of research and development within the framework of the State Program "High-Technology and Engineering" for 2021-2025. A Eurasian patent for an invention and a patent of the Republic of Belarus for an invention were received. The absorbers were used to create an anechoic chamber in the research unit of BSUIR and a shielded cabin in Depoint LLC.

Depending on the purpose, three types of absorbers have been created:

1. Flexible gray absorbers – for covering walls and ceilings of a shielded room.
2. Solid black - for covering the floor of a shielded room.
3. Breathable textiles – for creating special clothing to protect people from exposure to electromagnetic radiation.

[About the developer](#)

PRIBOY is a speech information protection device used to ensure the confidentiality of negotiations and protection against wiretapping from outside the premises. In 2023, the product was modified to transfer to the element base of the production of the Republic of Belarus and friendly countries.

Distinctive features:

- the device creates three types of masking signals: "white noise", "speech-like signals", "white noise" + "speech-like signals";
- "speech-like signals" are formed by a microprocessor according to a random law, meet all the formal properties of speech and can be adapted to a specific person.

[About the developer](#)