Belarusian State University
of Informatics and Radioelectronics

R&D Department

Announcement of BSUIR participation in the International Medical Forum "BELARUSMEDICA 2026"

May 12–15, 2026
Republic of Belarus, Minsk
Minsk International Exhibition Center
(24 P. Medyolki Str.)

BSUIR stand is located within the exposition of the Ministry of Education of the Republic of Belarus: No. B14.

The BELARUSMEDICA Forum is held annually in Minsk since 1994 and draws the attention of a large number of international and Belarusian leaders of the medical and pharmaceutical industries, leading healthcare institutions, developers of medical technologies, and suppliers of IT solutions for the healthcare system.

The Forum includes an international specialized exhibition and an extensive programme of business events.

The main areas of the exhibition: medical devices and equipment; pharmaceuticals; innovative technologies in medicine; dentistry: equipment, instruments, materials, drugs, technologies; medical devices, etc.

The BSUIR exposition will include the following developments:

High-frequency cavitation indicator

The device is **used for** measurement and analysis of cavitation activity in liquid media and biological tissues, for studying ultrasonic processes, optimization of technological modes and monitoring of ultrasonic equipment.

Built on the basis of programmable logic integrated circuits. Equipped with specialized software for recording the cavitation noise spectrum and real-time data processing with visualization of measurement results in the form of graphs.

The only device in the CIS for studying cavitation within the frequency range of 0.02–10 MHz.

Advantages:
– USB interface for data exchange with a PC and real-time visualization of measurement results;

– wide set of cavitation noise metrics.

About the developer

A system of diagnosis and patient-specific therapy for respiratory failure

The system is **used to** automate the adjustment and correction of the rate, volume and time of exposure to oxygen supplied to the patient based on monitoring of his changing state

The system has no direct analogues, since currently the adjustment and correction of therapy modes are performed manually by a physician.

Advantages:
– automatic correction of oxygen therapy modes based on real-time monitoring of patient parameters;
– remote control of system parameters and data analysis;
– increased efficiency and safety of therapy for respiratory diseases;
– convenient use in hospitals and at home;
– optimization of oxygen and energy consumption.

About the developer

Photonic sensors for molecular analysis of chemical compounds and biological fluids using SERS spectroscopy

A range of photonic sensors has been developed that, depending on the morphology of the sensitive area, makes it possible to:
– detect and study the structure of molecules, including disease biomarker;
– analyze biological fluids and sanitary-epidemiological swabs with high accuracy using SERS spectroscopy.

Their **advantages** lie in the technological features of forming sensitive micro- and nanostructured areas, enabling the manufacture of sensors that are optimally tailored to the customer's requirements.

Kit for photostimulated dental plaque removal

The kit includes two containers with coating-forming solutions, a brush, tweezers, filter paper and a photostimulation device.

The antibacterial coating consists of silver particles 250–450 nm in size with a packing density of 4–8 μm^{-2} and, under light exposure, ensures detachment of plaque from the surface of dental crowns without undesirable local heating typical, which is typical for the analogues based on metal particles sized 10–150 nm.

Self-cleaning porous filters with plasmonic and photocatalytic nanoparticles for face masks

Provide filtration of particles larger than 100 nm and bacterial sterilization under solar and artificial irradiation, which is impossible when using standard medical masks.

Advantages:

– possibility of multiple reuse;
– stability of sterilizing and filtering characteristics for 7 days.

About the developer

The full list of equipment and materials developed by BSUIR scientists for medical applications is available in the **catalog** (in Russian).

We invite you to visit the BSUIR stand within the exposition of the Ministry of Education of the Republic of Belarus: No. B14, BELARUSMEDICA 2026 exhibition.