



**Belarusian State University  
of Informatics and Radioelectronics**  
R&D Department

## Announcement

### 26<sup>th</sup> International Specialized Exhibition "Energy. Ecology. Energy saving. Electro" (EnergyExpo)

September 20 - 22, 2022

Minsk, Belarus.

20/2 Pobediteley av., Roofed Soccer Arena

### About the exhibition:

The exhibition seeks to present modern equipment and technologies for the production and distribution of electrical and thermal energy, automated systems, energy and resource saving technologies.

### Sections:

- Power plants and appropriate equipment
- Turbine generators, compressors, gas turbine plants, auxiliary equipment
- Automated systems and smart grids
- Design and engineering of power facilities and power supply systems
- Energy efficient equipment and technologies in energy, petrochemistry, industry and utilities
- Renewable and alternative energy systems, energy recycling
- Environmental protection equipment, waste disposal and recycling
- Energy saving heating: boilers, burners, heat exchangers, radiators, heat pumps
- Heat, water and gas metering devices, automated control systems and regulation equipment
- Measuring systems and automation
- Complete devices for control and distribution of electrical energy (stations, cabinets, panels, switchboards, boxes, consoles)
- High and low voltage devices
- Power and measuring converters
- Uninterruptible power supplies
- Electrical installation tools and materials
- Cable production
- Electromechanical components, sensors and microsystems

- Security systems and technologies, industrial locking systems
- Industrial information technology, industrial automation, software

**BSUIR will showcase high-tech developments**

### Tracker for space orientation of a solar panel corresponding to the position of the Sun

The tracker is designed to rotate a solar panel towards the Sun in the real time which would ensure maximum performance of a solar panel.

#### Advantages:

- automatic tracking of the Sun movement across the sky, maintenance of the panel orientation to it;
- the output current of the solar panel is set in accordance with the maximum power at the existing level of insolation.

About the developer

### Pipe Fault Controller

The controller is designed to measure the resistance, control the pipe condition in polyurethane foam insulation and predict emergencies based on the dynamics of changes in the pipe insulation resistance. It is used in automatic pipe condition monitoring systems. Comes with an in-built GSM module.

#### Advantages:

- measured values are indicated directly on the controller;
- transmission of the measured parameters via the GPRS channel (virtual COM port, MODBUS protocol) to the control center of urban heating networks;
- transmission of discrete open/close signals to cabinet (facility) doors via GPRS channel;
- supports the in-built web-server for quick control and diagnostics of the device.

About the developer

### Flexible composite carbon-containing absorbers of electromagnetic radiation in the microwave range

Purpose: electromagnetic shielding of facilities.

### Advantages:

- the value of the electromagnetic radiation reflection coefficient in the microwave range: up to -20 dB;
- the value of the electromagnetic radiation transmission coefficient in the microwave range: up to -40 dB;
- lower cost in comparison with analogues.

### Technology for producing optically selective coatings for solar collectors

The technology makes it possible to obtain composite highly selective coatings in the composition of anodic aluminum oxide/amorphous carbon. The coatings are evenly colored black and wear-resistant.

### Advantages:

- resistance to ionizing radiation;
- high corrosion, thermal and light resistance;
- high electrical insulation properties;
- environmentally safe electrochemical coating forming process.

### Manufacturing technology of energy-saving flat aluminum heaters

The technology allows you to produce elements with any surface shape. This is especially important in the automotive industry, in the manufacture of printing plates, as well as in the military sector. The use of carbon filament ensures high stability of the electric characteristics of the heater and its reliability under constant thermal cycles "heating—cooling" during operation.

### Advantages:

- adjustable electrical resistance in the range from 60 to 800 Ohm/m;
- maximum operating temperature up to 400°C;
- aluminum base;
- carbon filament heating tape;
- ultra-thin shape;
- low heat loss.

### About the developer