



**Belarusian State University
of Informatics and Radioelectronics**

R&D Department

Announcement

25th International Exhibition of Industrial Technologies and Innovations "TechInnoProm"

September 20 - 22, 2022

Minsk, Belarus.

20/2 Pobediteley av., Roofed Soccer Arena

About the exhibition:

TechInnoProm aims to promote innovative industrial equipment, products and technologies of domestic and foreign companies to regional and international markets; strengthen business contacts and exchange of experience.

Sections:

- equipment, technologies and sci-tech developments for industrial production;
- innovation. Investments. Startups and venture funding;
- industrial products and services;
- organization and improvement of industrial production.

BSUIR will showcase high-tech developments

Control and measuring microwave devices and equipment in the frequency range from 0.01 to 220 GHz, used for maintenance and repair of communication stations, replacement of the outdated physical infrastructure of enterprises of the defense and telecommunications industries. The equipment is included in the Registers of measuring instruments of the Republic of Belarus and the Russian Federation.

Metrological services: calibration of measuring instruments, testing of modules and units, material property research, software development for microwave devices.

More about the equipment and services

Components of remote monitoring systems

The University offers the development and production of devices that allow remote monitoring of the parameters of a moving vehicle in real time:

- fuel level, temperature, pressure, density sensors;
- differential-type fuel flow meter;
- coupling device and adder for the fuel level sensor;
- two-channel vibrorelay;
- data display module.

The components of the remote monitoring system have been successfully implemented on mass-produced products of enterprises.

The following developments would also be introduced at the exhibition:

- universal service adapter designed to connect devices with the interfaces such as: RS-232, RS-485, TTL UART to a PC. The purpose is to measure the frequency and voltage signals of connected devices; and to generate a special "Calibration" signal (for calibrating fuel level sensors);
- calibrator, it ensures frequency, analog, and interface fuel level sensors calibration with RS 232/485 interfaces when mounted on a vehicle without connecting to a PC.

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