



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

## Announcement

### Exhibition in the frames of the “Science Festival – 2022”

September 10, 2022  
Minsk, Belarus.  
Central Botanical Garden  
National Academy of Sciences

#### About the festival:

In the frames of the festival the exposition “University of the Future” would be organized, it would consist of 3 interactive sites:

- exhibition of the most important scientific achievements of young scientists from higher educational establishments;
- presentation of new approaches to the education of students in universities, master classes;
- presentation of the most modern, interesting, and demanded majors.

#### At the exhibition BSUIR will demonstrate

#### Software and hardware complex for controlling a robotic arm “Roboruka-P1”

Software for controlling a robotic arm “Roboruka P1” was developed. All its movements are controlled by a layout based on the STM32F4DISCOVERY debug board. The arm is capable of drawing and writing text according to a given template.

Roboruka P1 peculiarities:

- it has four degrees of freedom and several claw-grabs (“RoboClaw X1S”, “RoboClaw Z1S”);
- arm control based on STM32F4DISCOVERY;
- turntable rotates more than 160 degrees around its axis;
- large arm load capacity (the large base of the robot allows to lift heavy objects without the risk of tripping over);

The complex is used to study the following disciplines:

- "Software-controlled microcontroller devices";
- "Biological program control systems".

### PLD based neural network

The neural network model is implemented on the basis of the ALTERA CYCLONE IV PLD. The combination of digital logic high speed performance and flexibility of neural networks allows to implement a number of universal devices with a significant PLD resource economy. It is used when performing laboratory work at the Department of Information Radiotechnologies of BSUIR.

### Lecture program

It is planned to hold a speech session of BSUIR representatives on higher education majors such as: "Electronic and information-control systems of physical facilities", "Information security", and "Systems and networks of infocommunications".