

Division: *School of Medical Biology*

Academic programme: *4.3.5 Biotechnology of Food and Biologically Active Substances*

Mode of study: *full-time*

Programme length: *3 years*

Programme level: *postgraduate studies*

Language of instruction: *Russian*

Programme description: *The programme focuses on training specialists in the field of development of technologies of obtaining new types of products, including those obtained using microbiological synthesis, biocatalysis and nanobiotechnologies; organizing and conducting quality control of raw materials, intermediate products and finished products.*

The aim of the programme is to provide training, combining fundamental knowledge and practical skills in the field of technologies of food products and biologically-active substances, finishes food products and ingredients; graduates master universal, general and professional competencies of a researcher and teacher and prepared to defend a scientific qualification work (dissertation) for the degree of Candidate of Sciences.

Fields of research:

- *Molecular biology and applied Biotechnology in production of food products and biologically-active substances*
- *Development and application of genetic engineering methods for biotechnology of food products and biologically-active substances*
- *Microbiology of food systems*
- *Foodomics in relation to the processes and technologies of food products*
- *Trophological chains; new sources and methods of processing food raw materials using biotechnological methods and techniques*
- *Biotechnological and biogenic potential of food raw materials as a biologically-active system*
- *New knowledge about mechanisms of biotransformation of agricultural raw materials, theoretical models for predicting the nature of its changes*
- *Pharmabiotics and nutraceuticals*
- *Technologies, processes and equipment for extracting environmentally safe biologically-active substances, herbal remedies and other additives and compounds of alimentary nature*

- *Biological safety of raw materials, food and biologically-active substances, finished food products and ingredients*
- *New biotechnological methods of research of raw materials, food systems, food additives and biological products, biologically active substances and finished food products*
- *Food ecology, ecological proteomics and microbiome*
- *Biotechnologies of processing secondary raw materials*
- *Resource saving in food biotechnology*

The programme is organized at the International Laboratory for Synthesis and Analysis of Food Ingredients headed by Professor Shirish H. Sonawane, India

Main programme-specific classes:

- *Theory and Methods of Professional Education*
- *Foreign Language for Scientific Purposes*
- *Statistical Data Processing, Stochastic Analysis and Experiment Planning*
- *Methods of Optimization of Natural-science and Technical Problems*
- *Scientific Fundamentals of Creation and Implementation of Energy- and Resource-saving, Environmentally Friendly Technologies of Food Production*
- *Modelling and Forecasting of Changes in the Properties of Raw Materials in the Process of Their Biotransformation*

Programme manager: *Irina Yu. Potoroko, Doctor of Sciences (Engineering), Professor, Director of the School of Medical Biology*