

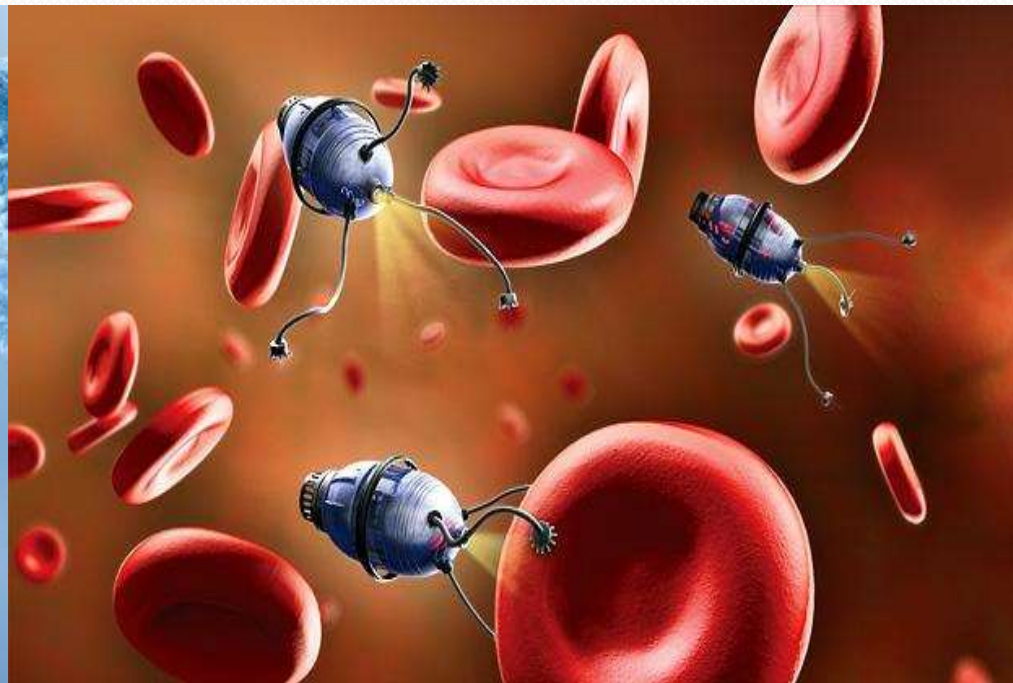
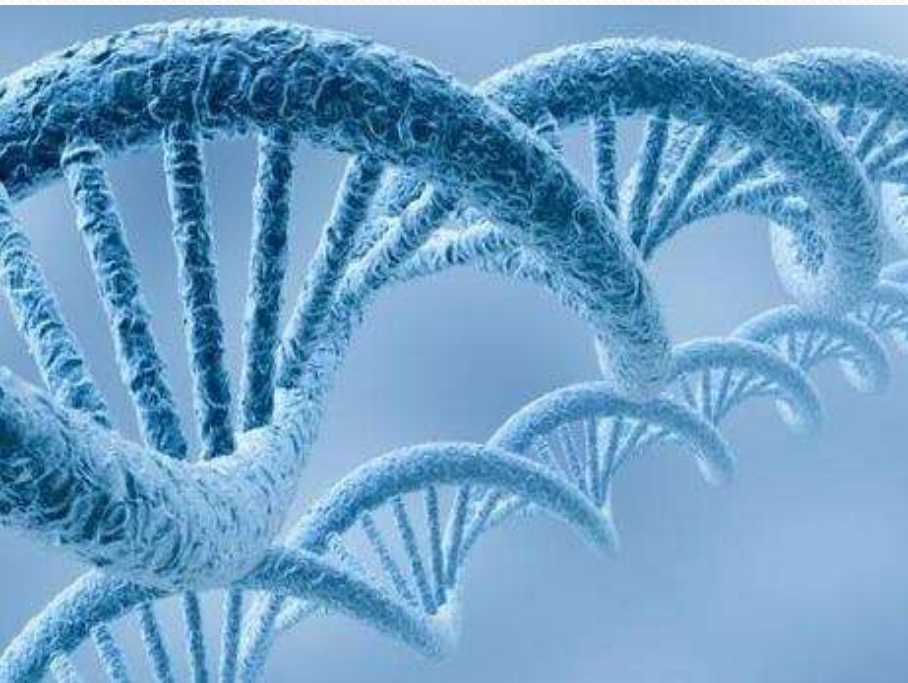


National Technical University
«Kharkov Polytechnic Institute»



Department

«Biotechnology, Biophysics &
Analytical Chemistry»



Department

Biotechnology, Biophysics & Analytical Chemistry

Department provides full-time training and learning

[Bachelor (BA); Master's (MA); Doctor of Philosophy (PhD)]

by speciality

162 «Biotechnologies and Bioengineering»

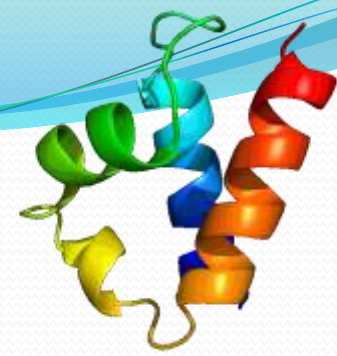
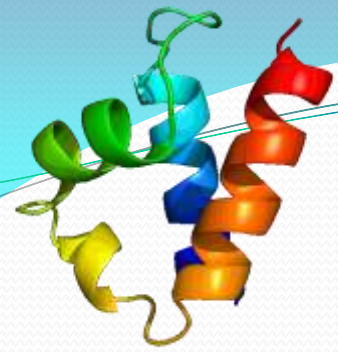
with two specializations:

162.1. Industrial Biotechnology

162.2. Pharmaceutical Biotechnology



Areas of studying:



BIOTECHNOLOGY applies

scientific and engineering principles to

processing of materials by living organisms with the purpose of creation of commodities and services.



Industrial BIOTECHNOLOGY develops technologies of the use of organisms-producers in food industry, in the industrial production of biogas and biodiesel, in the production of organic acids, in a perfumery, in biosensorics and bioelectronics.

Pharmaceutical BIOTECHNOLOGY

develops technologies of production of medicinal preparations, vaccines, hormones, immunomodulators, vitamins and other bioactive substances and supplements by the use of organisms-producers.



Areas of studying:

Molecular BIOTECHNOLOGY

develops technologies of organisms modification at molecular level.

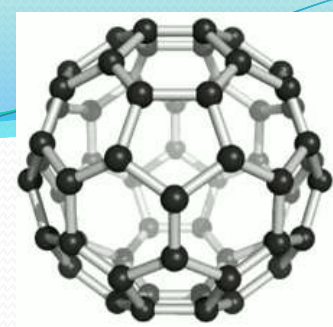
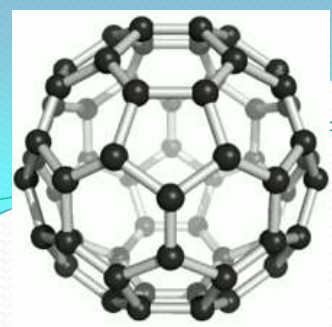


AgroBIOTECHNOLOGY develops the biotechnologies of crops production, production of fodder vitamins, amino acid and proteins, silo ferments, probiotics, entomopathogenic preparations, bacterial fertilizers and composts.

EcoBIOTECHNOLOGY develops the biotechnologies of processing of industrial and domestic wastes, technology of bioremediation of muddy territories, vermicomposting, biotreatment of gas extrass, enriching of air with oxygen, biodegradation of oil contaminations.



Areas of studying:

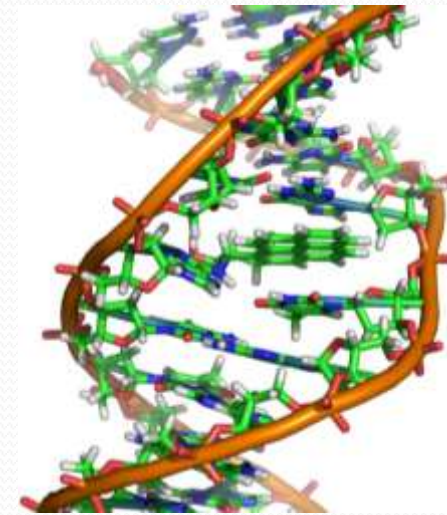


BIOENGINEERING

applies scientific and engineering principles of biotechnology and molecular biology to solve the actual problems related to life sciences and/or their applications.

Biomedical ENGINEERING develops the methods of creation of artificial tissues and organs.

Genetic ENGINEERING develops the methods of genetic modification of organisms.



Protein ENGINEERING develops the methods of the molecular constructing of proteins with desired properties.

Enzyme ENGINEERING develops the methods of the molecular constructing of enzymes with desired activity and specificity.



Employment perspectives:

Companies:

Biotechnological, Microbiological, Food, Pharmaceutical, Agricultural, Ecological



Scientific Institutions:

Biotechnological, Ecological, Microbiological, Food, Pharmaceutical, Agricultural



Certification Laboratories & Departments:

Biotechnological, Microbiological, Food, Pharmaceutical, Agricultural, Ecological



General academic disciplines for the students of our department (bachelor's level)

- ❖ **Fundamentals of Biotechnology**
- ❖ **Cell Biology**
- ❖ **Biophysics**
- ❖ **Analytical Chemistry**
- ❖ **General Microbiology & Virology**
- ❖ **Biochemistry**
- ❖ **Biophysical Chemistry**
- ❖ **Methods of Biological System Analysis**
- ❖ **General Biotechnology**
- ❖ **Molecular Biology**
- ❖ **Genetics**



Academic disciplines (bachelor's level)
for specialization
Industrial Biotechnology

- ❖ **AgroBiotechnology**
- ❖ **EcoBiotechnology**
- ❖ **Biological and Chemical Sensor Systems**
- ❖ **Molecular & Chemical Biophysics**
- ❖ **Fundamentals of Biochemical Engineering**
- ❖ **Equipment for Biotechnological Production**
- ❖ **Fundamentals of Design of Biotechnology Plants**
- ❖ **Industrial Biotechnology**



Academic disciplines (bachelor's level) for specialization

Pharmaceutical Biotechnology

- ❖ **Pharmaceutical Chemistry**
- ❖ **Essentials of Pharmacology & Pharmacognosy**
- ❖ **Sensor Systems in Pharmacy**
- ❖ **Chemical & Molecular Biophysics**
- ❖ **ImmunoBiotechnology**
- ❖ **Equipment for Biopharmaceutical Production**
- ❖ **Fundamentals of Design of Biopharmaceutical Plants**
- ❖ **Pharmaceutical Biotechnology**



General academic disciplines for the students of our department (master's level)

- ❖ **Molecular Biotechnology and Bioengineering**
- ❖ **Bioinformatics**
- ❖ **BioNanotechnology**
- ❖ **Industrial Technologies of Biologically Active Substances**
- ❖ **Biotechnology of Pharmaceutical Substances and Biomedicines**
- ❖ **Biotechnology of Plant and Animal Cells**
- ❖ **Biomaterial Science**
- ❖ **Modelling and Optimization of Biotechnological Systems and Processes**
- ❖ **Microbial Synthesis Technologies**

Professors and Teaching Staff

Head of the Department

Prof., Dr. Sci. in Physics **Alexander N. Ogurtsov**

Professors:

Prof., Dr. Sci. in Engineering **Nikolai F. Kleshchev**

Prof., Dr. Sci. in Pharmacy **Yuri M. Krasnopolsky**

Prof., Dr. Sci. in Medicine **Eugeny M. Babych**

Prof., Dr. Sci. in Engineering **Olga N. Bliznjuk**

Prof., Dr. Sci. in Biology **Elena M. Klimova**

Prof., Dr. Sci. in Medicine **Vasyliy V. Rossikhin**

Docents: *PhD in Biology* **Irina A. Belykh**

PhD in Agricultural Sci. **Leonid V. Gorbunov**

PhD in Engineering **Natalia Yu. Masalitina**

PhD in Engineering **Sergey I. Samoylenko**

PhD in Engineering **Aleksandra A. Varankina**

PhD in Biology **Oksana V. Zviahintseva**

Senior Lecturers: **Nadezhda V. Larintseva**

Olga M. Frolova



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<http://web.kpi.kharkov.ua/biotech/>

Our Biotech World = Our students came from + Our graduates work in

