

National technical University “Kharkov polytechnic institute”

Faculty “Technologies of inorganic substances”

Department of “Chemical technology of inorganic substances, catalysis and ecology”



Department of “Chemical technology of inorganic substances, catalysis and ecology”

- ❖ Specialty - Chemical technology and engineering
- ❖ Specialization - Chemical technology of inorganic substances





TUTION DIRECTIONS:

1. Chemical technology of inorganic substances, sorbents and catalysts

Study productions of:

- ❖ heavy-chemicals;
- ❖ industrial, noble and medical gases;
- ❖ catalysts, sorbents and filling agents;
- ❖ mineral salts and chemical agent for pharmaceutical and food industries.

2. Agrochemical products, food inters and preservatives production

Study:

- ❖ mineral and biomineral fertilizers, food additives productions;
- ❖ soda ash, alkali, oxides, pigments, food preservatives, aromatizers and cleaning agent production;
- ❖ adjustable gas mixtures production for vegetables and fruits storage;
- ❖ membrane processes.





TUTION DIRECTIONS:

3. Drinking and process water

Study productions of:

- ❖ drinking and process water, carbonated water, oxygen cocktails;
- ❖ deodorants, fresheners, liquid carbon dioxide, seawater desalination;
- ❖ flocculants, coagulants and ion exchangeable materials.



4. Nature-conservative chemical technologies

Study productions of:

- ❖ solid domestic waste recycling, ecology;
- ❖ environment control;
- ❖ alternative power engineering and its equipment (hydrogen and bio-power engineering);
- ❖ bioengineering, microbiology, toxicology in purification and recycling of gas, liquid and solid wastes;
- ❖ design, modeling and optimization of nature-conservative chemical technologies;
- ❖ low waste and ecologically clean processes.

TUITION DIRECTIONS:

5. Nanotechnologies and nanomaterials

Study:

- ❖ nanotechnologies in fertilizer, sorbent and catalyst productions;
- ❖ nanocomposition materials production;
- ❖ nanopowders and oxides production;
- ❖ mechano-chemical synthesis of nanomaterials;
- ❖ nanotechnologies in catalytic membranes production;
- ❖ solar power engineering nanomaterials, synthetic diamonds, sensor materials..



Graduated students can work as:

- ❖ process-engineers for heavy-chemicals plants and for companies of pharmaceutical and food industries;
- ❖ scientists for research centers;
- ❖ quality control experts;
- ❖ sales managers of chemicals;
- ❖ ecologists for private and state companies;
- ❖ process-engineers of drinking and process water production and of drip irrigation.



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



- ❖ Special methods of analysis in technology of inorganic substances
- ❖ Computer design of inorganic substances manufactures
- ❖ Simulation and optimization of chemical processes and reactors in technology of inorganic substances
- ❖ Fundamentals of catalysis and catalytic reactors
- ❖ The technology of drinking water and water treatment in inorganic substances manufactures
- ❖ Chemical technology of inorganic substances

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



- ❖ Modern inorganic technologies in industry and in environment
- ❖ Nanotechnology and nanomaterials
- ❖ Technology of heavy chemicals, catalysts, adsorbents and environmental protection
- ❖ Production of inorganic foods, preservatives, fertilizers, salts, alkalis, water treatment, purification and waste recovery



Department of “Chemical technology of inorganic substances, catalysis and ecology”

Staff

- ❖ 4 professors,
- ❖ 3 associate professors,
- ❖ 6 Ph.D.

Chair of the department - Loboyko A.Y.,
distinguished professor

