

Course description "Catalysis and Catalysts technology"

The course "Catalysis and Catalysts technology" covers the general mechanism of the catalytic action, types of adsorption, macrokinetics features of heterogeneous catalytic reactions, and mass transfer laws.

The basic indexes of chemical production depend on the quality of catalysts. Production of the catalyst of the desired composition and quality is a very difficult task including a large number of steps.

According to the methods used to produce of contact masses, catalysts are classified as follows: deposited, catalysts on carriers, obtained by the mechanical mixing of the components, melted, skeletal, natural, organic, zeolite, colloidal and other. Different raw materials are used to synthesize the catalysts.

In the course the special attention is paid to the technological schemes of catalyst preparation for large-scale production of inorganic substances.

As a result of the course the student must:

- be aware of the patterns and mechanisms of catalytic action;
- be able to select and describe the technology of preparation and equipment design of basic catalyst production;
- calculate and predict the catalytic process;
- e able to classify and summarize the basics of modern catalyst technologies;
- have experience in calculation and selection of optimal catalysts and catalytic systems.