



Course: Composite Materials

LECTURERS:

Prof. Valentin Svidersky, Oleksiy Myronyuk, Ph.D.

LANGUAGES OF EDUCATION: Russian, English.

THE SUBJECT of the educational course:

physical and chemical bases of polymer and inorganic composite materials formation technology, their performance, characteristics, and applications in the industrial, technological, and scientific research activities.



THE GOAL of the course includes the formation of the following **abilities** of students:

- ❖ knowledge polymer and inorganic composite materials formation technology, their performance, characteristics, and applications in industrial, technological, and research activities;
- ❖ ability to define and to solve the problem using composite materials with oxide or silicate fillers
- ❖ ability to use professionally profiled knowledge to improve the corrosion resistance of materials by the use of special additives and modifiers of surface structure.

THE MAIN TASK OF THE EDUCATIONAL COURSE

Following the demands of an educational-professional program, after the finishing of this course must demonstrate such learning outcomes:

Knowledge:

- ✓ features of manufacturing techniques of composite materials;
- ✓ scientific bases of creation of composite materials;

Experience:

- ✓ application of basic methods of physical and chemical technology of composite materials.
- ✓ prediction of properties of composite materials in industrial applications and research activities.

Skills:

- ✓ to formulate, classify and set goals to optimize the existing methods of enhancing the corrosion resistance;
- ✓ to solve the problem of optimizing the introduction of special reinforcement additives to form a matrix with elementary materials and the distribution of its second phase;
- ✓ to solve the problem of physical and chemical bases of technology of composite materials of different chemical nature.

COURSE DURATION: 18 academic hours of lectures; 18 academic hours of seminars.

REQUIREMENTS TO STUDENTS: knowledge in organic chemistry, general and inorganic chemistry, crystal chemistry (preferably), physical chemistry.

