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# Course: Composite Materials

**LECTURERS:**
Prof. Valentin Svidersky, Oleksiy Myronyuk, PhD

**LANGUAGES OF EDUCATION:** Russian, English.

**SUBJECT** of 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 formation of 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 an oxide or silicate fillers
- ability to use professionally profiled knowledge to improve the corrosion resistance of materials by use of special additives and modifiers of surface structure.

**MAIN TASK OF EDUCATIONAL COURSE**
In accordance to demands of 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 for the purpose of forming a matrix with elementary materials and the distribution of it 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.