Level: bachelor

Course title: Chemical Kinetics

Status: elective

ECTS: 5

Requirements: none

Learning objectives

To provide the students with broad theoretical and practical knowledge about the fundamental laws and application of chemical kinetics principles;
To develop skills for successful performance of experiments by applying the appropriate methodologies;
To develop creative thinking about solutions of kinetic problems in further education and professional practice.

Learning outcomes

Students should be able to define fundamental kinetic laws and phenomena, characteristic parameters and relate them to life equivalents; demonstrate the acquired theoretical knowledge and understanding of subjects by solving the experimental and mathematical problems; apply basic techniques for following the rates of suitable reactions; calculate the experimental results and characteristic parameters necessary for particular reaction mechanism; apply kinetic knowledge to some other fields of chemistry (photochemistry, electrochemistry, chemical technology, etc.).

Syllabus

Theoretical instruction

Selection from the following topics: main subjects and terms in chemical kinetics; theories of reaction rates, simple and complex chemical reactions; characteristic examples of reactions in gaseous and liquid state; fundaments of catalysis; modern instrumental methods for following fast reaction kinetics, analysis of experimental results in order to determine kinetic parameters and reaction mechanism.

Practical instruction

Laboratory exercises follow the lectures.

Weekly teaching load				Other:
Lectures: 2	Exercises: 2	Other forms of teaching:	Student research:	