

Level: Specialist academic studies of chemistry			
Course title: Ionic Liquids (SH-612)			
Status: Elective			
ECTS: 5			
Requirements: None			
Learning objectives			
<ul style="list-style-type: none"> • Expanding knowledge and understanding of ionic liquids, one of the most modern and newest group of the compounds in chemistry and their application in industrial processes and laboratory conditions. • Introducing students to interaction in the systems containing ionic liquids. 			
Learning outcomes			
<i>Students should be able to:</i>			
<ul style="list-style-type: none"> • explain significance and importance of ionic liquids as a green solvents, • list and explain interactions in ionic liquids media, • explain the impact of some physical parameters (temperature, pressure, etc.) and individual components on physico-chemical characteristics of ionic liquids, • demonstrate the need for further professional development. 			
Syllabus			
<i>Theoretical instructions</i>			
Structure and nomenclature of ionic liquids. Synthesis and purification of ionic liquids. Physico-chemical characteristics of ionic liquids. Practical aspects and application of ionic liquids in green chemistry processes: liquid-liquid extraction, extraction of metal ions from different samples, application in gas chromatography, electrochemistry (sensors, biosensors), capillary electrophoresis. Ionic liquids as designed and green solvents. Ionic liquids in synthesis of organic and pharmaceutical compounds. Ionic liquids as electrolytes for energy storage.			
<i>Practical instructions</i>			
The experiments are designed to illustrate the concepts discussed during the lectures and to familiarize students with ionic liquids. The lab is considered an integral part of the course.			
Weekly teaching load			Other: /
Lectures: 2	Exercises: /	Other forms of teaching: 2	