

Course Unit Descriptor

Study Programme: Doctoral Academic Studies in Chemistry			
Course Unit Title: Synthesis and Physicochemical Characterization of Inorganic Compounds			
Course Unit Code: DSH-611			
Name of Lecturer(s): Full professor Ljiljana Vojinović Ješić, Associate professor Mirjana Radanović			
Type and Level of Studies: PhD degree			
Course Status (compulsory/elective): Elective			
Semester (winter/summer): Winter			
Language of instruction: English			
Mode of course unit delivery (face-to-face/distance learning): Face-to-face			
Number of ECTS Allocated: 15			
Prerequisites: None			
Course Aims: Up-to-date methods of synthesis and physicochemical characterization of different classes of inorganic compounds. Application of the selected physicochemical methods for characterization of coordination compounds.			
Learning Outcomes: Qualifying students for synthesis and physicochemical characterization of laboratory- or technical-grade simple inorganic or coordination compounds.			
Syllabus: <i>Theory</i> Methods of preparation, purification and physicochemical characterization of the selected classes of inorganic compounds (high and low oxidation state oxides, peroxides, selenides, nitrides, carbides, halogenides, salts of oxoacids, anhydrous salts, etc.). Methods of synthesis of double salts and complex compounds, chelates, chlatrates and organometallic compounds. Non-template and template methods of synthesis. Reactions of coordinated ligands. Methods of characterization: conductometric and magnetochemical measurements, IR and UV-Vis spectrometry, NMR, thermal methods of analysis, X-ray powder and single crystal diffraction. <i>Practice</i> Synthesis of selected compounds. Purification of the obtained compounds. Characterization of the purified compounds.			
Required Reading: K. Nakamoto, Infrared and Raman Spectra of Inorganic and Coordination Compounds, Wiley and Sons, New York, 1997.			
Weekly Contact Hours:		Lectures: 5 (75)	Practical work: 5 (75)
Teaching Methods: Lectures, laboratory work, seminar(s)			
Knowledge Assessment (maximum of 100 points): 100			
Pre-exam obligations	points	Final exam	points
Seminar(s)	30	written exam	70