Level: PhD	
Course title: Advanced Course of Thermal Analysis (DSH-716)	
Status: Elective	
ECTS: 15	
Requirements: None	

Learning objectives:
Methods of thermal analysis and their application in quality control of the selected materials, their role in industrial processes, etc.

Learning outcomes:
Acquiring knowledge for analysis of experimental data and for their adequate interpretation. Solving problems related to changes in materials because of their thermal treatment.

Syllabus

Theoretical instruction:
The effect of temperature change on the properties of materials. Different techniques of thermal analysis (TA): thermogravimetry (TG) and derivative thermogravimetry (DTG), differential thermal analysis (DTA) and differential scanning calorimetry (DSC), thermomechanical and dynamic thermomechanical analysis (TMA and DMA). Thermometric methods of analysis. Using thermoanalytical data to obtain kinetic parameters. Simultaneous methods of thermal analysis. Analysis of evolved gases (EGD and EGA).

Practical instruction:
Thermal characterization of the selected materials using thermal analysis equipment.

Seminar paper:
Evaluation and interpretation of the selected experimental data.

Weekly teaching load				Other:
Lectures: 5	Exercises:	Other forms of teaching:	Student research: 5	