

JANA PISK:

CHEMICAL CONCEPTS IN MOLECULAR GASTRONOMY

Course content



The goal of the proposed course is to apply scientific knowledge, innovative methods, and technologies in a different environment and context from the usual one, which makes the proposed course a kind of breakthrough in modern education. Chemical concepts of general and inorganic chemistry such as molecular recognition, inclusion complexes, application of differential-search calorimetry and thermogravimetric analysis, and homogeneous and heterogeneous catalytic reactions will be applied in molecular gastronomy.

1. Connect the properties of carbohydrates, fats and proteins acquired during previous education with the principles of molecular gastronomy.
2. Predict the compatibility of substances according to the principles of molecular gastronomy.
3. To combine the concept of molecular recognition of inclusion complexes with the principles of molecular gastronomy.
4. Illustrate the principles of elasticity and stress using examples of substances known in molecular gastronomy.
5. Correlate viscosity and properties of polymers used in molecular gastronomy.
6. Distinguish the thermodynamic characteristics of gastronomic processes.
7. Sketch phase diagrams of substances from molecular gastronomy.
8. Compare the results obtained by thermogravimetric analysis and differential-search calorimetry on examples from molecular gastronomy.
9. Apply acid-base concepts to obtain desired spherification products.
10. Design a catalytic reaction applicable in molecular gastronomy.

Learning outcomes

