

Seminar „Between physics, biology and medicine”

Organized by Department of Medical Physics
and Department of Experimental Particle Physics and Applications, Institute of Physics JU

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„ Applications of spectroscopic methods in the studies of gluten structure”

Abstract

Spectroscopic methods are widely used in the studies of proteins structure. Among these methods, infrared and Raman spectroscopies are used the most often. Both methods are complimentary to each other and provide information about secondary structure, conformation of disulphide bridges, environment of two amino acids (tyrosine and tryptophan), and water populations. In some cases, fluorescence spectroscopy is also applied to determine changes in proteins structure by e.g. analysis of fluorescence emission spectra of aromatic amino acids. Gluten is a continuous, viscoelastic network formed within dough during the dough mixing process. Gluten is composed of two major proteins – gliadins and glutenins that are attached to each other via disulphide bonds, hydrogen bonds and non-covalent hydrophobic interactions. Structure of gluten proteins directly affect quality of the bread dough as well as bread. Addition of some supplements e.g. dietary fibre preparations, polyphenols extracts or pomaces from oil productions to the bread changes its sensory quality and hence disturb structure of the gluten network.

when: 26th November 2019, 4:15 p.m.

where: A 1-08 (Aula), FAIS, Łojasiewicza 11

