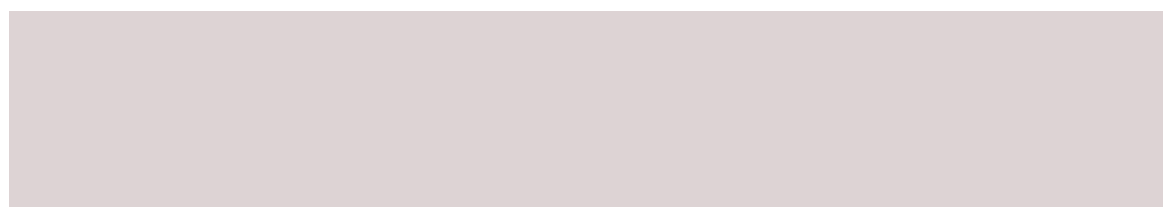


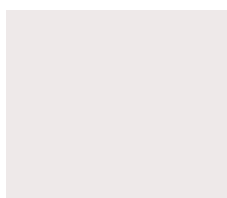
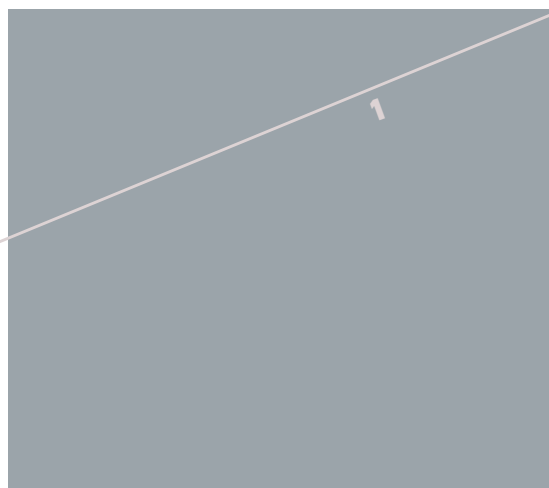
12th Baltic Conference on Food Science and Technology

Food R&D in the Baltics and Beyond

FoodBalt – 2018



Abstract Book



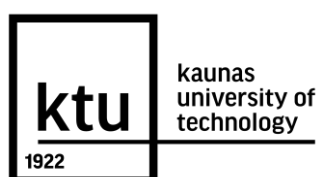
Kaunas University of Technology
Department of Food Science and Technology

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Discrete-impulsive input of energy in milk and dairy products processing processes

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The basis of the discrete-impulsive energy input (DIIE) concept is the rational use of introduced energy. The references describe in detail the general principles of DIIE, examine the energy and thermodynamic aspects and the main mechanisms of intensification that can be initiated on the basis of this principle.

DIIE mechanisms conditionally can be divided into hard and soft ones. The former should be used to stimulate hydromechanical processes, and the latter to accelerate the processes of phase heat and mass transfer, or for the purpose of intensive mixing of multicomponent media.

The authors carried out studies on the possibility of using DIIE for the intensification of hydromechanical processes, in particular emulsification of milk fat (homogenization of milk, preparation of spreads), processing of cream cheese masses. Objects of research were whole non-homogenized milk, fat emulsions, cream cheese mass. In order to evaluate the efficiency of milk homogenization the homogenization coefficient change was studied, which was determined by centrifugation method as the most affordable and accurate. Emulsions were evaluated according to the degree of destabilization, resistance and dispersion of the fat phase. The rheological characteristics of cheese masses were evaluated by the effective viscosity change.

Keywords: discrete-impulsive energy, hydromechanic, process, milk products.