

HEAT-AND-MASS TRANSFER IN MICRO- AND NANOSCALE STRUCTURES IN TARGETED ENERGY DELIVERY CONDITIONS

Burdo O.G.¹, Terziev S. G.², Bandura V.N.³, Ruzhitskaya N.V.⁴

¹ Processes, Apparatuses and Energy Management Department
Odesa National Academy of Food technologies
Kanatna Str., 112, Odessa, Ukraine, 65039
+380487124175; terma_onaft@rambler.ru

² Processes, Apparatuses and Energy Management Department
Odesa National Academy of Food technologies
Kanatna Str., 112, Odessa, Ukraine, 65039
+380487124175; terma_onaft@rambler.ru

³ Processes and Equipment of Processing and Food Industry Department
Vinnytsia National Agrarian University
Soniachna St.,3, Vinnytsia, Ukraine, 21008
+380432438520; bandura_3@ukr.net

⁴ Processes, Apparatuses and Energy Management Department
Odesa National Academy of Food technologies
Kanatna Str., 112, Odessa, Ukraine, 65039
+380487124175; garka.nataga@yandex.ua

Abstract

In current paper a problem of nanotechnologies (NT) energy aspect is raised and being solved for the first time. It is shown that energy is not only a characteristic, a main result of technology, but an instrument of technology organization, a means of control of transfer processes in nanoscale elements of different systems kinetics. Development of technologies is to go by the way of directed, selective energy supply to those raw material elements that require energy action. Special attention should be paid to raw material micro- and nanoscale structures. These elements in conventional technologies practically are not being considered. It affords ground to consider that the analysis of transfer processes in nanoscale elements is an important task of NT. Meanwhile authors offer and develop new area – nanoenergotechnologies (NET) as independent one within the NT limits. The prospects of NET are defined.